College of Health and Science

Electronic Undergraduate Handbook 2009

University of Western Sydney

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Information contained in this electronic handbook is correct at the time of production (September 2009), unless otherwise noted.

CRICOS Provider Code 00917K

In accordance with the Education Services for Overseas Students (ESOS) Act 2000, the University of Western Sydney (UWS) is registered on the Commonwealth Register of Institutions and Courses for Overseas Students (CRICOS), Provider Code 00917K.

Overseas students studying in Australia must comply with the requirements of the ESOS Act and the National Code. They should consult the Federal Government's Australian Educational International webpage for the description of the ESOS legislation and other relevant information. UWS International Postgraduate and Undergraduate Prospectuses and other promotional material specifically prepared for overseas students also provide information about CRICOS registered courses and conditions relating to study in Australia.

About the College of Health and Science Electronic Undergraduate Handbook

Sessions and dates

There are two main sessions in 2009: Autumn and Spring. Weeks shown in the dateline refer to the session weeks for these main sessions.

The dateline is available at: http://www.uws.edu.au/students/stuadmin/dateline.

Unit outlines

Brief outlines of all UWS undergraduate units listed in the course section are given in the second half of this electronic handbook.

The unit outlines give a brief overview of each unit. For some units this information is not available. Please check the UWS website for more recent information. For more information – details of textbooks, assessment methods, tutorial, group work and practical requirements – contact the unit coordinator.

More information on unit offerings can be found at: http://handbook.uws.edu.au/hbook/UNIT_SEARCH.ASP.

Unit not listed?

If the unit you are looking for is not in the alphabetical units section, consult your course coordinator for details or check the unit search web page for updated details on all units offered in 2009 at: http://handbook.uws.edu.au/hbook/UNIT_SEARCH.ASP.

Prerequisites, co-requisites and assumed knowledge

Students wishing to enrol in a unit for which they do not have the prerequisites or assumed knowledge are advised to discuss their proposed enrolment with an academic adviser.

Where it is necessary to limit the number of students who can enrol in a unit through shortage of space, equipment, library resources, and so on, or to meet safety requirements, preference will be given to students who have completed the unit recommended sequence in the course.

Academic credit

In most courses, academic credit will be granted for previous studies. For example, UWS has a number of agreements with TAFE to grant credit for successfully completed TAFE studies. Seek advice about credit prior to, or at enrolment.

Electives and cross-discipline study

Electives are available in many courses. These may be selected from pools of electives listed under various courses.

Also, UWS actively encourages students to take elective units in disciplines other than their major area of study. Students should seek advice from their course coordinator in the first instance.

How to use this electronic book

The first part of this electronic book contains information about current College of Health and Science undergraduate courses. The next part contains details of undergraduate units in these courses.

The courses are arranged mainly alphabetically. If you know the course code, but not the name, consult the COURSE CODE INDEX.

The units are arranged alphabetically. If you know the code, but not the name, consult the UNIT CODE INDEX at the back of the electronic book.

Tip:

The electronic handbook contains links. These can be accessed by clicking on the text highlighted in blue. To return to the previous screen, click on the green arrow at the bottom of the page.

Check website for updates

Every effort is taken to ensure that the information contained in this electronic book is correct at time of production. The latest information on course and unit offerings can be found at: http://handbook.uws.edu.au/hbook/

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COLLEGE OF HEALTH AND SCIENCE

Bachelor of Applied Science (Honours) Occupational Therapy

4521.1

Occupational therapy is a client centred process that facilitates an individual's performance in chosen life roles and every day tasks across the lifespan, within diverse social, cultural and physical environments. This program views occupational therapy as the practice of using occupation as a therapeutic means to optimise an individual's health, well being and quality of life. Throughout their lives, people have the right to actively choose and particupate in occupations which add meaning, purpose and value to everyday life, regardless of ability, age, gender ethnicity beliefs and/or other status. The UWS occupational therapy program promotes the value of human diversity, fundamental human rights and the dignity and worth of every client.

Study Mode
Four years full-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal

Accreditation
The course is fully accredited with Occupational Therapy Australia. It is also a World Federation of Occupational Therapists (WFOT) approved course.

Course Structure
Qualification for this award requires the successful completion of 320 credit points which include the units listed in the recommended sequence below. Students in the embedded Honours program undertake different units in fourth year, as outlined below.

Recommended Sequence

Full-time

Year 1

Autumn session

400130.1	Human Medical Sciences 1
400160.1	Introduction to Occupational Therapy
400732.1	Communication in Health
400733.1	Occupational Analysis

Spring session

400134.1	Human Medical Sciences 3
400136.1	Introduction to the Psychology of Health
400137.1	Introduction to Research for Health Sciences
400161.1	Occupational Therapy Clinical Practice 1

Year 2

Autumn session

400164.1	Introduction to Sociology of Health
400138.2	Pathophysiology 1
400148.2	Quantitative Research
400734.1	Functional Analysis

Spring session

400166.1	Clinical Neurosciences
400167.1	Occupational Therapy Clinical Practice 2
400165.1	Occupation and the Environment
400162.1	Child and Adolescent Occupations

Year 3

Autumn session

400168.1	Ergonomics and Work Occupations
400169.1	Occupation and Mental Health
400171.1	Occupation and Neurology
400170.1	Occupation and Social Participation

Spring session

400172.1	Occupational Therapy Clinical Specialties 1
400173.1	Occupational Therapy Clinical Specialties 2
400174.1	Occupational Therapy Clinical Practice 3a
400175.1	Occupational Therapy Clinical Practice 3b

Year 4 (Honours)

Autumn session

400154.1	Integrating Evidence into Practice
400176.1	Occupation and Ageing
400180.1	Occupational Therapy Honours Thesis 1
400177.1	Professional Reasoning

Spring session

400182.1	Occupational Therapy Clinical Practice 4 (Honours)
400181.1	Occupational Therapy Honours Thesis 2

Elective Units
Elective units in the Bachelor of Applied Science (Occupational Therapy) may be chosen from across UWS, provided that unit prerequisites are met and space is available.

The following is a list of elective units in the Occupational Therapy discipline area which are not listed elsewhere in the Handbook. These electives are open to students from across UWS provided that pre-requisites are met and space is available. Please note that these elective units will not be offered every year:

400183.1	Upper Limb Rehabilitation Following Stroke
400184.1	Conducting Medicolegal Assessments
400186.1	Paediatric Practice
400187.1	Supervision in Clinical Practice
400809.1	Outcome Measures and Indicators in Clinical Practice

Bachelor of Applied Science (Honours) Sport and Exercise Science

4590.1

The Bachelor of Applied Science (Honours) Sport and Exercise Science, is a fourth year extension of the Bachelor of Applied Science (Sport & Exercise Science) degree. For the Sport and Exercise Scientist an Honours degree opens up significant new career opportunities in Elite Sport and Exercise Physiology that are not available to those without research training.

Study Mode

One year full-time or two years part-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Campbelltown Campus	Part Time	Internal

Advanced Standing

Assessment and eligibility for advanced standing is determined in accordance with the University of Western Sydney's advanced standing policy. Advanced standing will only be granted for any equivalent coursework units undertaken at the required level of an honours degree.

Admission

Candidates for admission into the Bachelor of Applied Science (Honours) Sport and Exercise Science, must have:

- Completed the requirements for the award of Bachelor of Applied Science (Sport and Exercise) or an equivalent undergraduate program from another university;
- A grade point average greater than 5.0;
- Completed a research unit at undergraduate level or the unit B3086 Advanced Exercise Physiology;
- Submitted a brief (up to 500 word) written statement about the proposed research as part of their application for admission to the course.

International applicants should contact UWS International for details on admission. Contact information for the International Office is available via the UWS website. http://sites.uws.edu.au/international

Course Structure

Qualification for this award requires the successful completion of 80 credit points, including the units listed in the recommended sequence below.

The course consists of a 10 credit point research methodology unit, a 10 credit point seminar series unit, a 50 credit point discipline specific Honours thesis and a 10 credit point unit in quantitative and/or qualitative data analysis or additional research methodology.

Recommended Sequence

Full-time

Autumn session

400471.1	Exercise and Health Science Research and Practice
400472.1	Exercise and Health Sciences Honours Seminar
400477.1	Sport and Exercise Science Thesis A

And one 10 credit point data analysis/additional research methodology unit

Spring session

400478.1	Sport and Exercise Science Thesis B

Part-time

Year 1

Autumn session

400471.1	Exercise and Health Science Research and Practice
400479.2	Sport and Exercise Science Thesis C

Spring session

400479.2	Sport and Exercise Science Thesis C

And one 10 credit point Data Analysis/additional Research Methodology unit.

Year 2

Autumn session

400472.1	Exercise and Health Sciences Honours Seminar
400480.2	Sport and Exercise Science Thesis D

Spring session

400480.2	Sport and Exercise Science Thesis D
400477.1	Sport and Exercise Science Thesis A

Data Analysis / Additional Research Methodology

The data analysis/research methodology component will be chosen by the student's thesis supervisor in consultation with the student and be based on the student's research methodology and data analysis background and the nature of the statistics required for the analysis of thesis data. Statistic units that may be recommended include, but are not limited to, the following units:

200041.1	Applied Regression Analysis and Forecasting
200033.2	Applied Statistics
200035.1	Decision Analysis and Statistical Process Control
200037.1	Regression Analysis & Experimental Design
200032.2	Statistics for Business
200192.1	Statistics for Science
200039.1	Surveys and Multivariate Analysis

Bachelor of Applied Science (Occupational Therapy)

4520.2

Occupational therapy is a client centred process that facilitates an individual's performance in chosen life roles and every day tasks across the lifespan, within diverse social, cultural and physical environments. This program views occupational therapy as the practice of using occupation as a therapeutic means to optimise an individual's health, well being and quality of life. Throughout their lives, people have the right to actively choose and particupate in occupations which add meaning, purpose and value to everyday life, regardless of ability, age, gender ethnicity beliefs and/or other status. The UWS occupational therapy program promotes the value of human diversity, fundamental human rights and the dignity and worth of every client.

Study Mode
Four years full-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal

Advanced Standing
Applications for recognition of prior learning will be assessed in accordance with current UWS policies, and students may be given advanced standing for units where equivalent content is demonstrated.

Accreditation
The course is fully accredited with Occupational Therapy Australia. It is also a World Federation of Occupational Therapists (WFOT) approved course.

Admission
Potential students normally apply for admission to the course through the Universities Admission Centre (UAC). Other admission schemes of the University of Western Sydney are available.

International applicants should contact UWS International for details on admission. Contact information for the International Office is available via the UWS website. http://sites.uws.edu.au/international

Admission to the Honours program is assessed on completion of the first semester in year three. Students deemed eligible are invited into the honours program. Grade point average (GPA) over the first five semesters of the pass program is used to determine eligibility and must represent credit average or above.

Special Requirements
To be enrolled in this course you must comply with the occupational screening and vaccination policy of NSW Health at course commencement. Students must also possess a current Work Cover Authority approved First Aid Certificate before commencing any clinical practice units.

Course Structure
Qualification for this award requires the successful completion of 320 credit points which include the units listed in the recommended sequence below.

Students in the embedded Honours program undertake different units in fourth year, as outlined below.

Recommended Sequence

Full-time

Year 1

Autumn session

400130.1	Human Medical Sciences 1
400160.1	Introduction to Occupational Therapy
400732.1	Communication in Health
400733.1	Occupational Analysis

Spring session

400134.1	Human Medical Sciences 3
400136.1	Introduction to the Psychology of Health
400137.1	Introduction to Research for Health Sciences
400161.1	Occupational Therapy Clinical Practice 1

Year 2

Autumn session

400164.1	Introduction to Sociology of Health
400138.2	Pathophysiology 1
400148.2	Quantitative Research
400734.1	Functional Analysis

Spring session

400166.1	Clinical Neurosciences
400167.1	Occupational Therapy Clinical Practice 2
400165.1	Occupation and the Environment
400162.1	Child and Adolescent Occupations

Year 3

Autumn session

400168.1	Ergonomics and Work Occupations
400169.1	Occupation and Mental Health
400171.1	Occupation and Neurology
400170.1	Occupation and Social Participation

Spring session

400172.1	Occupational Therapy Clinical Specialties 1
400173.1	Occupational Therapy Clinical Specialties 2
400174.1	Occupational Therapy Clinical Practice 3a
400175.1	Occupational Therapy Clinical Practice 3b

Year 4 (Pass)

Autumn session

400154.1	Integrating Evidence into Practice
400177.1	Professional Reasoning
400178.2	Occupational Therapy Qualitative Project

400176.1 Occupation and Ageing

Spring session

400179.1 Occupational Therapy Clinical Practice 4

And two electives

Year 4 (Honours)

Autumn session

400154.1 Integrating Evidence into Practice
400176.1 Occupation and Ageing
400180.1 Occupational Therapy Honours Thesis 1
400177.1 Professional Reasoning

Spring session

400182.1 Occupational Therapy Clinical Practice 4 (Honours)
400181.1 Occupational Therapy Honours Thesis 2

Elective Units

Elective units in the Bachelor of Applied Science (Occupational Therapy) may be chosen from across UWS, provided that unit prerequisites are met and space is available.

The following is a list of elective units in the Occupational Therapy discipline area which are not listed elsewhere in the Handbook. These electives are open to students from across UWS provided that pre-requisites are met and space is available. Please note that these elective units may not be offered every year:

400183.1 Upper Limb Rehabilitation Following Stroke
400184.1 Conducting Medicolegal Assessments
400186.1 Paediatric Practice
400187.1 Supervision in Clinical Practice
400809.1 Outcome Measures and Indicators in Clinical Practice

Bachelor of Applied Science (Sport and Exercise Science)

4558.3

Sport and Exercise Science is a field encompassing the use of specialist knowledge and skills in sport and exercise within a wide range of settings such as community, and corporate health and fitness, government agencies associated with sport, physical activity and health, sports academics, professional sports, rehabilitation clinics and hospitals, private business in personal training and rehabilitation, and in universities and colleges with involvement in teaching and research. This course prepares graduates for the Exercise Science and Sport Science industries. Students undertake advanced studies in Exercise Physiology, Sports Physiology, Biomechanics, Exercise Prescription and Programming, Motor Control and Learning. A research methodology elective is highly recommended.

Study Mode

Three years full-time. Students may take a reduced load from time to time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal

Advanced Standing

Applications for advanced standing will be assessed in accordance with current UWS policy.

Accreditation

Graduates completing the Bachelor of Applied Science (Sport and Exercise Science) program will be eligible to apply for full membership of the Australian Association for Exercise and Sports Science (AAESS) and will have the knowledge skills and competences on which to build the additional professional practice requirements for specialist accreditation by AAESS in: Sports Science; Sports Physiology; and Exercise Physiology.

Admission

Students normally apply through the Universities Admission Centre (UAC).

International applicants should contact UWS International for details on admission. Contact information for the International Office is available via the UWS website. http://sites.uws.edu.au/international

Special Requirements

To undertake this course, students must comply with the following special requirements: completion of a Prohibited Persons Declaration; Criminal Record Check Clearance; Work Cover approved First Aid Certificate; Provide evidence of compliance with the occupational screening and immunisation policy of NSW Health.

Course Structure

Qualification for this award requires the successful completion of 240 credit points which include the units listed in the recommended sequence below.

Elective units may be chosen from any award offered by UWS, provided that unit prerequisites are met and space is available. To fulfil requirements for AAESS accreditation, one of the electives must be a research unit.

Students must possess a Work Cover approved First Aid Certificate prior to enrolment in 400282 - Introduction to Sports Medicine. The nature of the activities carried out in the laboratory classes for this and subsequent units for which this unit is a prerequisite requires a knowledge of first aid in a sport and exercise specific context to ensure safe conduct of activities

Recommended Sequence

Full-time

Year 1

Autumn Session

400802.1 Professional Practice in Sport and Exercise Science 1

400130.1 Human Medical Sciences 1
400256.1 Human Medical Sciences 2
400148.2 Quantitative Research

Spring Session

400134.1 Human Medical Sciences 3
100678.1 Introduction to Sport Psychology
400322.1 Sociological Aspects of Sport and Exercise
400282.2 Introduction to Sports Medicine

Year 2

Autumn Session

400325.1 Bioenergetics of Exercise
400139.2 Biomechanics and Kinesiology
400324.2 Foundations of Exercise Prescription
400323.1 Physiology of Exercise

Spring Session

400326.3 Exercise Prescription for General Populations
100680.1 Exercise Psychology
100679.1 Motor Control and Learning
400650.3 Professional Practice in Sport and Exercise Science 2

Year 3

Autumn Ssession

400327.2 Exercise in Musculo-Skeletal Injury Rehabilitation
400328.2 Exercise Prescription for Special Populations
400329.2 Sports Physiology

And one elective

Spring Session

400330.2 Applied Biomechanics of Exercise
400156.1 Practice Management for Health Professionals
400331.1 Sport and Exercise Science in Practice

And one elective

Bachelor of Applied Science (Traditional Chinese Medicine)

4565.2

This course will be replaced by 4660 - Bachelor of Health Science/Master of Traditional Chineses Medicine from 2010.

This course prepares graduates to function as competent practitioners of Traditional Chinese Medicine (TCM). Students undertake study in acupuncture, herbal medicine and Chinese medical theory, and human medical sciences including anatomy, physiology, pharmacology, pathophysiology, clinical examination and diagnosis. Students will participate in over 900 hours of clinical education at the University's clinical facility and at external placement sites. Graduates will have acquired flexible skills permitting them to specialise further in a range of clinical areas.

For more information about this course and the Centre for Complementary Medicine Research, click here.

Study Mode
Four years full-time. Some classes will be held at the specialist outpatient clinic and anatomy facilities at Campbelltown campus as required.

Location

Campus	Attendance	Mode
Bankstown Campus	Full Time	Internal
Campbelltown Campus	Full Time	Internal

Advanced Standing
Students who have previously successfully completed other relevant studies of an equivalent level at a recognised tertiary institution and/or have relevant professional experience may be granted credit for units that form part of their accreditation award, as governed by the University of Western Sydney policies.

Accreditation
The Australian Acupuncture and Chinese Medicine Association, Australian Natural Therapists Association, Australian Traditional Chinese Medicine Association and the NSW Association of Chinese Medicine have accredited the UWS program and will grant recognition of our graduates.

Admission
Potential students normally apply for admission to the course through the Universities Admission Centre (UAC). Other admission schemes of the University of Western Sydney are available.

International applicants should contact UWS International for details on admission. Contact information for the International Office is available via the UWS website. http://sites.uws.edu.au/international

Special Requirements
Any student going on placement in NSW Health facilities will need to comply with its occupational screening and vaccination policy prior to placement. The unit 400363 - Block Clinical Practicum involves 400 hours intensive hospital-based training. It is required to be undertaken at an assigned teaching hospital in China.

Course Structure
Qualification for this award requires the successful completion of 320 credit points including the units listed in the recommended sequence below.

Recommended Sequence

Year 1

Autumn session

400130.1 Human Medical Sciences 1
400346.1 Traditional Chinese Medicine 1
400732.1 Communication in Health

And one elective

Spring session

400347.1 Acupuncture 1
400349.1 Chinese Herbal Medicine 1
400256.1 Human Medical Sciences 2
400348.1 Traditional Chinese Medicine 2

Year 2

Autumn session

400350.1 Acupuncture 2
400351.1 Chinese Herbal Medicine 2
400135.1 Clinical Pharmacology and Microbiology
400352.1 Traditional Chinese Medicine 3

Spring session

400353.1 Chinese Herbal Medicine 3
400262.1 Clinical Diagnosis
400166.1 Clinical Neurosciences
400137.1 Introduction to Research for Health Sciences

Year 3

Autumn session

400355.1 Classical Texts in Chinese Medicine
400138.2 Pathophysiology 1
400354.1 Traditional Chinese Medicine Practice 1

And one elective

Spring session

400357.1 Chinese Internal Medicine 1
400249.1 Ethical and Legal Issues in Health Care
400267.1 Pathophysiology 2
400356.1 Traditional Chinese Medicine Practice 2

Year 4

Autumn session

400360.1 Chinese Internal Medicine 2
400358.1 Specialties in Traditional Chinese Medicine 1
400359.1 Traditional Chinese Medicine Practice 3 (Research Project)

And one elective

Spring session

400363.1 Block Clinical Practicum (TCM)
400361.1 Herbal Pharmacognosy
400364.1 Specialties in Traditional Chinese Medicine 2
400362.1 Traditional Chinese Medicine Practice 4

Bachelor of Biomolecular Science

3632.1

This degree equips students with specialised knowledge and understanding of the molecular basis of human health and disease. After undertaking a common first year, students select a Key Program in Human Molecular Biology or Pharmaceutical Chemistry.

Human Molecular Biology emphasises recent discoveries in molecular and cell biology relevant to human health and disease - molecular biology and functional genomics, protein science, proteomics, human metabolism, genetics, cell signalling and molecular immunology.

Pharmaceutical Chemistry emphasises the applications of chemistry for human health – biomolecular dynamics and pharmacokinetics, coordination chemistry, drug design, development, and analysis.

A range of alternate and elective units enable students to expand their knowledge in specific disciplines or develop research skills through individual projects.

The degree prepares graduates for a wide range of employment prospects as professional scientists in analytical, diagnostic and research laboratories, in science communication, technical sales and secondary science education, and provides a suitable foundation for entry into postgraduate research and coursework programs.

Study Mode
Three years full-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal

Advanced Standing
Applications for advanced standing will be assessed in accordance with current UWS policy.

Accreditation
It is anticipated that the Bachelor of Biomolecular Science with Key Program in Pharmaceutical Chemistry will receive accreditation from the Royal Australian Chemical Institute.

Admission
Students normally apply through the Universities Admission Centre (UAC). HSC level Chemistry and Mathematics studies are assumed.

International applicants should contact UWS International for details on admission. Contact information for the International Office is available via the UWS website. http://sites.uws.edu.au/international

Course Structure
Qualification for this award requires the successful completion of 240 credit points including the units listed in the recommended sequence below.

All students study the same units in Year 1, and then select a Key Program for study in Years 2 and 3.

Recommended Sequence

Full Time

Year 1

Autumn session

300539.1 Biodiversity
300554.1 Principles of Chemistry
300558.1 Physics 1

Choose one of

200191.3	Fundamentals of Mathematics
200189.1	Concepts of Mathematics

Spring session

300543.1	Cell Biology
300550.1	Medicinal Chemistry
300541.1	Biomolecular Frontiers

And one elective

Year 2 and Year 3

Students select a Key Program of study for years 2 and 3

KP3632HMB.1	Human Molecular Biology
KP3632PC.1	Pharmaceutical Chemistry

Bachelor of Computer Science

3506.4

The Bachelor of Computer Science course is a three year course with three distinct majors which allow students to specialise in different applications of computer science and computer systems. The three majors are: computer forensics, networked systems and systems programming. The course and the three majors are all available on the Penrith Campus. Students may graduate without a major but where a major is completed it will appear on the student's transcript . Accreditation with the Australian Computer Society is being sought.

Computer Forensics major: Computer forensics focuses on the gathering of evidence (often as part of an investigation) from computers and computer networks. Such evidence may consist of actual files (e.g. an image) or the traces of a user's activities that are left in the activity logs of operating systems, browsers, databases, web proxies, or network firewalls, etc. Identifying such evidence requires in-depth technical knowledge of the interactions between hardware, the operating system, programs, and the network. Similarly, knowledge of cryptographic techniques is required where data has been encrypted and/or obfuscated. This major develops this requisite knowledge; it also develops the skills necessary to ensure that evidence is not corrupted, and can be documented and presented in an intelligible manner.

Networked Systems major: This major aims to develop graduates with sound skills in the discipline of networked computer systems. Recent advances in computer and telecommunications networked systems, particularly those based on TCP/IP, have increased the importance of network technologies in the discipline of computer science. This major covers a wide range of topics including computer communication network concepts and protocols, multimedia systems, Internet standards and technologies, network security, wireless and mobile computing, and distributed systems. The candidates are also introduced to some of the relevant current key research issues of the field.

Systems Programming major: This major aims to develop graduates with sound skills in the discipline of programming. The focus is on programming at the level of system calls to the underlying operating system and many of the units use the industry standard language for systems programming, namely C/C++, as the vehicle of instruction. There is a strong emphasis on the development of highly efficient and reliable code that can provide support services for higher level application oriented programs, as well as the development of programs suitable for systems administration and management. Practical work utilises both Unix and Microsoft environments. This major is appropriate where a career in systems programming or systems administration is planned, or where the student wishes to develop advanced systems programming skills.

Study Mode
Three years full-time.

Location

Campus	Attendance	Mode
Penrith Campus	Full Time	Internal

Accreditation
The B Computer Science currently is accredited with the Australian Computer Society at Professional Level. It is due for reaccreditation, and this is due to occur early this year.

Admission
Assumed knowledge required: HSC Mathematics (2 unit) and any two units of HSC English

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC).
UAC

International applicants must apply directly to the University of Western Sydney via UWS International.
UWS International

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Details of minimum English proficiency requirements and acceptable proof can be found on the Universities Admissions Centre website (UAC).
UAC

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and UWS.

Course Structure
Qualification for this award requires the successful completion of 240 credit points which include the units listed in the recommended sequence below.

Recommended Sequence

Full-time

Year 1

Autumn session

200192.1	Statistics for Science
300580.1	Programming Fundamentals
100483.1	Principles of Professional Communication 1
200025.1	Discrete Mathematics

Spring session

300096.3 Computer Organisation
300103.1 Data Structures and Algorithms
300104.1 Database Design and Development
300565.1 Computer Networking

Year 2

Autumn session

300167.2 Systems Programming 1
300581.1 Programming Techniques
300121.1 Formal Languages and Automata

And one elective

Spring session

300404.1 Formal Software Engineering

And two Computer Science alternate units
And one elective

Year 3

Autumn session

300578.1 Professional Development

And two Computer Science alternate units
And one elective

Spring session

300579.1 Professional Experience

And two Computer Science alternate units
And one elective

Computer Science Alternate Units

300090.1 Compiler Theory and Practice
300092.1 Computer Architecture
300093.1 Computer Graphics
300095.2 Computer Networks and Internets
300115.1 Distributed Systems and Programming
300128.2 Information Security
300130.1 Internet Programming
300143.2 Network Security
300149.1 Operating Systems
300165.1 Systems Administration Programming
300166.1 Systems and Network Management
300168.1 Systems Programming 2
300368.1 Intelligent Systems
300447.1 Computer Forensics Workshop
300507.1 Extended Computing Project 1
300508.1 Extended Computing Project 2
300575.1 Networked Systems Design

Majors

The majors listed below were designed specifically for this course and are recommended for Bachelor of Computer Science students. Other majors, from the School of Computing and Mathematics or any other School may also be selected but may require more than the standard six semesters to complete depending on their affinity with this course.

M31015V2.1 Computer Forensics
M31026V2.1 Networked Systems
RU3010V2.1 Systems Programming

Bachelor of Computer Science (Advanced)

3634.1

Students in the Bachelor of Computer Science (Advanced) will follow the study program set out for 3506 Bachelor of Computer Science. Each student will have an Academic Mentor and will participate in additional compulsory activities including research projects. To maintain their enrolment in the Bachelor of Computer Science (Advanced) students must maintain an overall above 5 Grade Point Average, otherwise they will be transferred to the standard 3506 Bachelor of Computer Science course. At enrolment students will be required to sign a declaration acknowledging the requirement to maintain a >5 GPA.

For more information refer to the entry for 3506 Bachelor of Computer Science.
3506 - Bachelor of Computer Science

Study Mode

Three years full-time study.

Location

Campus	Attendance	Mode
Penrith Campus	Full Time	Internal

Accreditation

The B Computer Science currently is accredited with the Australian Computer Society at Professional Level. It is due for reaccreditation, and this is due to occur early this year.

Admission

Assumed knowledge required: HSC Mathematics plus any two units of English (or equivalent). Recommended studies: Mathematics (extension 1).

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC).
UAC

International applicants must apply directly to the University of Western Sydney via UWS International.
UWS International

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Details of minimum English proficiency requirements and acceptable proof can be found on the Universities Admissions Centre website (UAC).
UAC

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and UWS.

Special Requirements

Students must maintain a grade point average of above 5 to remain in the course; those who do not maintain this

average will be transferred to the B Computer Science. At enrolment students will be required to sign a declaration acknowledging the requirement to maintain a >5 GPA.

Course Structure

In addition to the units outlined in the course structure for 3506 Bachelor of Computer Science, students in the advanced program must also complete the following three units:

Students must enrol in both 1H and 2H sessions.

Year 1

1H session

300586.1 Advanced Computer Science Activities 1

2H session

300586.1 Advanced Computer Science Activities 1

Year 2

1H session

300587.1 Advanced Computer Science Activities 2

2H session

300587.1 Advanced Computer Science Activities 2

Year 3

1H session

300588.1 Advanced Computer Science Activities 3

2H session

300588.1 Advanced Computer Science Activities 3

Bachelor of Computer Science (Honours)

3614.1

The Honours program encourages independence in learning and research; further develops academic ability, provides the opportunity to pursue undergraduate studies to a more advanced level, deepen intellectual understanding in the major field of study and develop research skills. Honours is a recognised point of entry into postgraduate research studies at PhD and Masters levels. If a career in industry is sought, Honours enables study to a more advanced level with a higher qualification. The course has the opportunity for direct commercial and industrial involvement with a diverse range of organisations through the provision and joint supervision of research projects.

Study Mode

One year full-time or two years part-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Campbelltown Campus	Part Time	Internal
Parramatta Campus	Full Time	Internal
Parramatta Campus	Part Time	Internal
Penrith Campus	Full Time	Internal
Penrith Campus	Part Time	Internal

Accreditation

Professional accreditation by the Australian Computer Society may be available, depending on a student's undergraduate degree.

Course Structure

Qualification for this award requires the successful completion of 80 credit points including the units listed below.

The award is a year long program that will be divided into three main components: Computing Research Process and Practice (10 credit points), Computing Honours Seminar Program (10 credit points) and the Computing Honours Thesis (60 credit points).

Full-time

Year 1

Autumn session

300365.1 Computing Research Process and Practice
300364.2 Computing Honours Seminar Program
300363.2 Computing Honours Thesis

Spring session

300364.2 Computing Honours Seminar Program
300363.2 Computing Honours Thesis

Part-time

Year 1

Autumn session

300365.1 Computing Research Process and Practice
300363.2 Computing Honours Thesis

Spring session

300364.2 Computing Honours Seminar Program
300363.2 Computing Honours Thesis

Year 2

Autumn session

300364.2 Computing Honours Seminar Program
300363.2 Computing Honours Thesis

Spring session

300363.2 Computing Honours Thesis

Bachelor of Computing

3633.2

The Bachelor of Computing is a professional Information Communication Technology course that provides graduates with a skills and knowledge base in the IS/IT areas of ICT and the ability to apply IS/IT solutions to a wide area of ICT. It allows students to develop skills in program design, systems analysis, design and security, data analysis and modelling, networks, web-design and systems planning.

This degree develops the abilities to design, develop, deploy and manage a spectrum of ICT systems.

As an ICT specialist in the ICT world, these attributes enable graduates to work in software development companies, networking companies, banking companies, IT consulting companies, the health care industry and many other IS and business related roles.

The Bachelor of Computing course is a three year ICT course being accredited by the Australian Computer Society. The Key Program in Information Systems focuses on computing and information technology in the context of business. Majors and sub-majors may be chosen from a range of disciplines, subject to the approval of Head of Program and subject to the number of elective units available in the Key Program. Accreditation at Professional level will be sought with the Australian Computer Society.

Study Mode

Three years full-time.

Location

Campus	Attendance	Mode
Parramatta Campus	Full Time	Internal

Accreditation

Accreditation at Professional level will be sought with the Australian Computer Society.

Admission

Assumed knowledge required: HSC Mathematics and any two units of HSC English.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC).
UAC

International applicants must apply directly to the University of Western Sydney via UWS International.
UWS International

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Details of minimum English proficiency requirements and acceptable proof can be found on the Universities Admissions Centre website (UAC).
UAC

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and UWS.

Course Structure

Qualification for this award requires the successful completion of 240 credit points which include the units listed in the recommended sequences below.

Non-recent school leavers who have not studied mathematics, or those students who have completed HSC General Mathematics, or some students who have undertaken HSC Mathematics but have only achieved bands 2 or 3 may benefit from taking the following unit as an elective:

300691.1 Mathematical Reasoning

Please seek further advice from the Head of Program.

Bachelor of Computing (Information Systems)

KT3000.1 Information Systems

Majors

The following majors are only available to students enrolled in the Bachelor of Computing and Bachelor of Information and Communications Technology courses

M3001.1 Advanced Programming
M3000.1 Computer Systems

The following major is available to all students except those enrolled in the Networks or Information Systems key programs within the Bachelor of Computing course, and the Bachelor of Information and Communications Technology course

M3002.1 Information Technology

The following major is available to all students except those enrolled in the Health Informatics key program within the Bachelor of Computing course

M3004.1 Health Informatics

The following major is available to all students except those enrolled in the Bachelor of Computing or the Bachelor of Computer Science or the Bachelor of Information and Communications Technology courses

M3003.1 Web Systems Development

The following majors are available to all students

M3023.1 Computational Decision Making
M3005.1 Entertainment Computing
M3024.1 Knowledge Discovery and Data Mining
M3021.1 Mathematics
M3022.1 Statistics

Sub-majors

The following sub-majors are available to only those students enrolled in the Bachelor of Computing or Bachelor of Information and Communications Technology courses

SM3005.1 Applied Mathematics
SM3000.1 Computer Systems
SM3004.1 Formal Systems
SM3001.1 Systems Administration
SM3003.1 Systems Programming
SM3002.1 Systems Security

Two sub-majors in Web Development are available, one for computing students, the other for non-computing students.

Computing students only (that is, students enrolled in the Bachelor of Computing or Bachelor of Information and Communications Technology courses):

SM3006.1	Web Application Development (for Computing Students)

Non-computing students only:

SM3007.1	Web Application Development (for Non-Computing Students)

The following sub-major is available to all students except those enrolled in the Bachelor of Computing (Networks)

SM3008.1	Networking

The following sub-majors are available to all students except those enrolled in the Health Informatics key program within the Bachelor of Computing course

SM3010.1	Health Information Applications
SM3009.1	Health Information Management

The following sub-majors are available to all students

SM3027.1	Computational Decision Making
SM3011.1	Entertainment Computing
SM3028.1	Knowledge Discovery and Data Mining
SM3025.1	Mathematics
SM3026.1	Statistics

Bachelor of Computing (Honours)

3588.1

The Honours program encourages independence in learning and research; further develops academic ability, provides the opportunity to pursue undergraduate studies to a more advanced level, deepen intellectual understanding in the major field of study and develop research skills. Honours is a recognised point of entry into postgraduate research studies at PhD and Masters levels. If a career in industry is sought, Honours enables study to a more advanced level with a higher qualification. The course has the opportunity for direct commercial and industrial involvement with a diverse range of organisations through the provision and joint supervision of research projects.

Study Mode
One year full-time and two years part-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Campbelltown Campus	Part Time	Internal
Parramatta Campus	Full Time	Internal
Parramatta Campus	Part Time	Internal
Penrith Campus	Full Time	Internal
Penrith Campus	Part Time	Internal

Accreditation
Professional accreditation by the Australian Computer Society may be available, depending on a student's undergraduate degree.

Course Structure
Qualification for this award requires the successful completion of 80 credit points as per the recommended sequence below.

The award is a year long program that will be divided into three main components: Computing Research Process and Practice (10 credit points), Computing Honours Seminar Program (10 credit points) and the Computing Honours Thesis (60 credit points).

Recommended Sequence

Full-time

Year 1

Autumn session

300365.1	Computing Research Process and Practice
300364.2	Computing Honours Seminar Program
300363.2	Computing Honours Thesis

Spring session

300364.2	Computing Honours Seminar Program
300363.2	Computing Honours Thesis

Part-time

Year 1

Autumn session

300365.1	Computing Research Process and Practice
300363.2	Computing Honours Thesis

Spring session

300364.2	Computing Honours Seminar Program
300363.2	Computing Honours Thesis

Year 2

Autumn session

300364.2	Computing Honours Seminar Program
300363.2	Computing Honours Thesis

Spring session

300363.2	Computing Honours Thesis

Bachelor of Construction Management

2607.3

This course is aimed at providing the skills and abilities necessary to perform competently at a professional level in the building industry, in one or more of the following roles: Construction Managers, Project Managers, Building Supervisors, Estimators, Quantity Surveyors and Building Researchers.

Students will develop specialised skills in construction management. The Construction Management program is widely recognised for delivering the full suite of theoretical, practical, and hands-on experience in the area of construction management. It offers a sophisticated, purpose-built laboratory complex where students will conduct experiments across the range of building sciences, including acoustics, heat flow through a building, corrosion of materials, concrete testing, and much more. Additionally, students will be required to undertake a total of 1,200 hours approved practical experience during the course.

There are a number of opportunities during the course for obtaining a cadetship in the building industry in areas including building surveying, construction economics, and construction management.

Study Mode

Four years full-time or eight years part-time

Location

Campus	Attendance	Mode
Penrith Campus	Full Time	Internal

Advanced Standing

Advanced standing is available to students who have completed the following courses at TAFE. Diploma of Building Studies, Diploma of Quantity Surveying, Diploma of Building Surveying, Diploma of Civil Engineering, Diploma of Structural Engineering, Diploma of Architectural Technology - (Credit and Distinctions only).

Accreditation

Graduates are eligible for Probationer membership with advancement to Associate membership of the Australian Institute of Quantity Surveyors after Assessment of Professional Competence.

Admission

HSC Mathematics, Physics and English.

UAI or mature-age entry through the Universities Admissions Centre (UAC). International applicants should contact UWS International for details on admission. Contact information for the International Office is available via the UWS website.

Course Structure

Qualification for this award requires the successful completion of 320 credit points which include units in the recommended sequence below. Electives within the sequence may be used towards obtaining an approved major or submajor for this award.

Recommended Sequence

Full-time

Year 1

Autumn session

BG101A.1	Building 1
BG105A.1	Graphic Communication and Design (V1)
300674.1	Engineering, Design and Construction Practice
300016.1	Design Science

Spring session

BG103A.1	Building 2
200184.2	Introduction to Business Law
200101.2	Accounting Information for Managers
MG102A.2	Management Foundations

Year 2

Autumn session

BG204A.1	Construction Technology 1 (Civil)
200486.1	Quantity Surveying 1
200472.2	Material Science in Construction
BG303A.1	Development Control (V2)

Spring session

BG207A.1	Construction Technology 2 (Substructure)
200468.1	Estimating 1
200482.1	Construction in Practice 1

And one elective

Year 3

Autumn session

200485.1	Decision Making for Construction Professionals
MG313A.1	Project Management
200502.2	Construction Technology 3 (Concrete Construction)
PL302A.1	Construction Planning (V1)

Spring session

200470.2	Construction Technology 4 (Steel Construction)
BG302A.1	Building Regulation Studies
200292.1	Building Law
300053.2	Professional Practice

Non-Honours Stream

Year 4

Autumn session

200471.2	Construction Technology 5 (Envelope)
200504.1	Construction Economics
300536.1	Major Project in Construction

And one elective

Spring session

BG406A.1	Construction Technology 6 (Services)
200484.2	Construction in Practice 3

And two electives

Honours Stream

Potential students must have completed at least 240 credit points and have achieved GPA of credit average in the first 3 years of their pass degree in order to be eligible to complete this embedded Honours stream:

Year 4

Autumn session

200471.2	Construction Technology 5 (Envelope)
200504.1	Construction Economics
300675.1	Honours Thesis

Spring session

BG406A.1	Construction Technology 6 (Services)
200484.2	Construction in Practice 3
300675.1	Honours Thesis

Sub Major in Construction Economics

SM3014.1	Construction Economics

Industrial Experience

BG311A.1	Industry Based Learning (VI)

All students enrolled in Bachelor of Construction Management must obtain, through their own initiative, 1200 hours of construction management related employment prior to undertaking their final year of study.

To facilitate the recording of such experience it will be necessary to enrol in BG311A - Industry Based Learning (in every year Autumn session only) and have an Industry Experience Diary signed off by the Course Coordinator.

Bachelor of Design and Technology

3502.4

This course prepares students for a career in industrial design and/or industrial graphics. This is achieved by providing a sound knowledge of units in a broad range of design disciplines, including design methodology, design innovation, product design, ergonomics, manufacturing technology and design, aesthetics, management 2D and 3D CAD. Students interested in a teaching career in Design and Technology may take the end-on Bachelor of Teaching degree or Graduate diploma in Education after completing their Design and Technology degree.

Study Mode

Three years full-time. Combinations of full-time and part-time study or all part-time study are also permitted under the normal program.

Location

Campus	Attendance	Mode
Penrith Campus	Full Time	Internal

Advanced Standing

Advanced Standing will be assessed in accordance with UWS policy.

Admission

There are no specific subject prerequisites for entry into the course. Preferably, students should have successfully completed the HSC at the 2U level or better in English and at least two of the following units: Design & Technology, Arts, Physics, and Mathematics. Alternative entry: Certificate, Associate Diploma or Advanced Diploma from TAFE or another recognized teaching institution or equivalent in the discipline area. In some cases, professional experience will be counted towards alternative entry.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC).
UAC

International applicants must apply directly to the University of Western Sydney via UWS International.
UWS International

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Details of minimum English proficiency requirements and acceptable proof can be found on the Universities Admissions Centre website (UAC).
UAC

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and UWS.

Course Structure

Qualification for this award requires the successful completion of 240 credit points which include the units listed in the recommended sequence below.

To be eligible to graduate from this course, students are required to complete a sub-major. Refer to the 'note' after the sub-major listing, for further details.

Recommended Sequence

Full-time

Year 1

Autumn session

300674.1	Engineering, Design and Construction Practice
300016.1	Design Science
10943.2	Applied Ergonomics
200191.3	Fundamentals of Mathematics

Spring session

300462.1	Engineering and Design Concepts
300302.1	Industrial Graphics 1: Presentation

300304.2 Sustainable Design: Materials Technology
200083.1 Marketing Principles

Year 2

Autumn session

300305.2 Design Studio 1: Themes and Variations
300309.2 Sustainable Design: Life Cycle Analysis
300282.1 Industrial Graphics 2: Transition

Choose one of
One sub-major alternate unit
Or one elective

Spring session

300308.2 Design Studio 2: The Design Proposal
300306.2 Sustainable Design: Sustainable Futures
300310.2 Industrial Graphics 3: 3D Solids

Choose one of
One sub-major alternate unit
Or one elective

Year 3

Autumn session

300311.2 Design Studio 3: Product Realisation
300014.2 Design Management 3: Organisational Skills for Designers

Choose one of
Two sub-major alternate units
Or two electives

Spring session

300313.2 Design Studio 4: Simulate to Innovate
300314.1 Designed Inquiry

Choose one of
Two sub-major alternate units
Or two electives

Industrial Experience

10915.2 Industrial Experience

Majors

There are three Majors available, composed of units from the program, however these are not compulsory to complete:

M3503IDM.1 Innovation Design Management
M3503IIG2.1 Interactive Industrial Graphics
M3503INTDM.1 International Design Management

Sub-majors

There are three sub-majors, composed of units from the program:

S3502DM.1 Design Management
S3502IG.1 Industrial Graphics
S3502SD.1 Sustainable Design

Note: In addition to the sub-major streams/electives offered from within Industrial Design (as listed above) students may choose other sub-major streams/electives within the School of Engineering and Industrial Design or the University of Western Sydney or other universities (as cross institutional studies).

Bachelor of Engineering

3621.3

This course has two intakes - Start year (Autumn) and Mid year (Spring). Students will need to check the entry relevant to their intake.

The Bachelor of Engineering course is a four year course accredited by Engineers Australia. The course has a common first year program for all engineering disciplines and also shares two units with the Bachelor of Industrial Design, exposing students to a wide range of experiences in the first year. Students have the opportunity to focus on an area of speciality by undertaking a key program in the disciplines of Civil, Computer, Electrical, Environmental, Robotics and Mechatronics and Telecommunications. Sub-majors can be chosen from a range that complement their specialist discipline. Students also have an opportunity to broaden their experience by choosing sub-majors from other disciplines or alternately outside the School. An honours stream is offered, based on meritorious performance over the second and third year of the program.

Study Mode

Four years full-time.

Accreditation

Accredited by Engineers Australia.

Admission

Admission would normally be through UAC. Assumed knowledge required: Mathematics at Band 5 or higher, any two units of Science and any two units of English. Recommended studies: Physics and HSC Mathematics Extension 1 or HSC Mathematics Extension 2.

Course Structure

Qualification for this award requires the successful completion of 320 credit points as per the recommended sequence below.

Recommended Sequence

Full-time - Autumn intake

Year 1

Autumn session

200237.1 Mathematics for Engineers 1
300464.1 Physics and Materials
300027.1 Engineering Computing
300674.1 Engineering, Design and Construction Practice

Spring session

200238.1 Mathematics for Engineers 2

300463.1	Fundamentals of Mechanics
300021.1	Electrical Fundamentals
300462.1	Engineering and Design Concepts

Year 2 - Year 4

Students must select one of the following key programs:

KP3621CIVI.1	Civil
KP3621COMP.1	Computer
KP3621ELEC.1	Electrical
KP3621ENVI.1	Environmental
KP3621R&M.1	Robotics And Mechatronics
KP3621TELE.1	Telecommunications

Recommended Sequence

Full-time - Spring Intake

The sequence of units for Year 1 Spring Intake is different for each Key Program. Refer to each Key Program for details.

Sub-majors

The following sub-majors are available to all UWS students apart from students studying the same Key Program discipline. However, some of the units in the sub-majors require prerequisites, which could restrict their selection to Engineering students. Please seek advice from Head of Program.

SM3621CIVE.1	Civil Engineering
SM3032.1	Computer Engineering
SM3033.1	Construction
SM3621ECOE.1	Ecological Engineering
SM3034.1	Electrical Engineering
SM3035.1	Environmental Engineering
SM3621R&M.1	Robotics and Mechatronics
SM3621SOE.1	Soil Engineering
SM3621STRE.1	Structural Engineering
SM3621WATE.1	Water Engineering
SM3036.1	Wireless Engineering

Bachelor of Engineering (Advanced)

3636.1

The Bachelor of Engineering (Advanced) course is a four year course and is designed for high achieving students to undertake advanced engineering topics and gain substantial research experience. This course is in parallel with the Bachelor of Engineering course which has a common first year program for all engineering disciplines and shares two units with the Bachelor of Industrial Design and one unit with Bachelor of Construction Management, exposing students to a wide range of experiences in the first year. Students have the opportunity to focus on an area of speciality by undertaking a key program in the disciplines of Civil, Environmental, Electrical, Computer, Telecommunications and Robotics & Mechatronics. Students in this course will be challenged with special projects and assignments to realise their full potential. Students need to maintain a specified level of performance in this course and will carry out an honours project of 60 credit points in their fourth year of study.

Study Mode

Four years full-time.

Location

Campus	Attendance	Mode
Penrith Campus	Full Time	Internal

Admission

Admission would normally be through UAC. Assumed knowledge: HSC Mathematics Extension 1, Physics and any two units of English.

Course Structure

Recommended Sequence

Qualification for this award requires the successful completion of 320 credit points as per the recommended sequence below.

Full-time

Year 1

Autumn session

200237.1	Mathematics for Engineers 1
300464.1	Physics and Materials
300027.1	Engineering Computing
300674.1	Engineering, Design and Construction Practice

Spring session

200238.1	Mathematics for Engineers 2
300463.1	Fundamentals of Mechanics
300021.1	Electrical Fundamentals
300462.1	Engineering and Design Concepts

Year 2 - Year 4

Students must then select one of the following key programs

KT3001.1	Civil
KT3002.1	Computer
KT3003.1	Electrical
KT3004.1	Environmental
KT3005.1	Robotics and Mechatronics
KT3006.1	Telecommunications

Bachelor of Health Science

4545.4

Students who commenced the B Health Science in 2007 should refer to the course information available at: Bachelor of Health Science Version 3

Students who commenced the B Health Science in 2005 or 2006 should refer to the course information available at: Bachelor of Health Science Version 2

The Bachelor of Health Science (BHSc) degree is structured on a recognition that health is a highly complex and multidimensional concept. The course has been

developed as a multistrand course which in addition to providing core skills and introductory knowledge, allows for the development of comprehensive and specialised skills and knowledge within defined key programs of study, according to the students' interests and future professional and career aspirations.

Key Program descriptions are provided below.

Study Mode
Three years full-time.

Location

Campus	Attendance	Mode
Penrith Campus	Full Time	Internal

Accreditation
Graduates of the Bachelor of Health Science can apply for full membership of the following Accreditation bodies associated with this program: Australian College of Health Service Executives; Health Promotion Association of New South Wales; Diversional Therapy Association of New South Wales Inc. and Diversional Therapy Association of Australia National Council.

Admission
Any two units of English.

Potential students normally apply for admission to the course through the Universities Admission Centre (UAC). Other admission schemes of the University of Western Sydney are available. International applicants should contact UWS International for details on admission. Contact information for the International Office is available via the UWS website.

Course Structure
Qualification for this award requires the successful completion of 240 credit points including the units within one of the following Key Programs

Recommended Sequence

Full-time

KP4545HPRO.1 Health Promotion

The Health Promotion key program focuses on enabling individuals and communities to increase control over factors that influence health and wellbeing. Students will develop skills enabling them to work on specific health promotion projects such as injury prevention, skin cancer prevention, HIV/AIDs awareness, and community development projects, as well as in areas that deal with policy initiative, development and evaluation.

KP4545HSM.1 Health Services Management

The Health Services Management key program aims to develop beginning level health managers who will understand and, with experience, will facilitate the new directions that health care systems are taking. Graduates will be skilled in managing and responding to rapid changes within the health care system, the broader political sphere and in areas that deal with policy initiative, development and evaluation.

KP4545SHS.1 Social Health Studies

The Social Health Studies key program aims to give graduates an in-depth understanding of the social and behavioural processes contributing to health and illness. It allows students to draw from a suite of specialist units that examine the social and behavioural nature and social impact of health and illness within society. It also provides access to the latest research and knowledge about health in society.

KP4545TR.1 Therapeutic Recreation

The Therapeutic Recreation key program provides students with expertise in designing, implementing and evaluating therapeutic recreation programs for people who experience barriers to participation in leisure and recreation programs such as in special schools, aged care facilities, as well as health care and community settings. Such leisure and recreation participation provides a variety of benefits that promote health and wellbeing. The curriculum aims to produce a graduate who can utilise the appropriate process and content to provide leisure and recreation programs, services for a range of people who experience disabilities, illness or disadvantage.

Majors

These majors are available to Health Promotion, Health Service Management and Therapeutic Recreation students only.

The sharing of some common units across the key programs of Health Promotion, Health Service Management and Therapeutic Recreation in addition to the common core, means that these students may complete a second program of study to graduate with a Key Program (shown on testamur) and a major (shown on their transcript).

M4545HP.1 Health Promotion
M4545HSM.1 Health Services Management
M4545TR.1 Therapeutic Recreation

Bachelor of Health Science (Honours)

4608.2

The Bachelor of Health Science (Honours) program is available to meritorious students. This Honours program has three primary aims:

- To ensure that students are provided with opportunities to further develop research design and analytic skills relevant to their thesis topic and chosen methodology;
- To enable students to conduct a piece of original research on their own (but under careful supervision);
- To write a scholarly thesis of a substantial nature based on this research.

Study Mode
One year full-time or two years part-time.

Location

Campus	Attendance	Mode
Penrith Campus	Full Time	Internal

Campus	Attendance	Mode
Penrith Campus	Part Time	Internal

Admission

Graduates of the Bachelor of Health Science who achieve a credit average or above are eligible to apply for admission.

International applicants should contact UWS International for details on admission. Contact information for the International Office is available via the UWS website. http://sites.uws.edu.au/international

Course Structure

Qualification for this award requires the successful completion of 80 credit points including the units listed in the recommended sequence below.

Recommended Sequence

Full-time

Year 1

Autumn session

400471.1	Exercise and Health Science Research and Practice
400472.1	Exercise and Health Sciences Honours Seminar

1H session

400558.2	Honours Thesis in Health Science (F/T)

2H session

400558.2	Honours Thesis in Health Science (F/T)

Part-time

Year 1

Autumn session

400471.1	Exercise and Health Science Research and Practice
400472.1	Exercise and Health Sciences Honours Seminar

1H session

400559.2	Honours Thesis in Health Science (P/T Year 1)

2H session

400559.2	Honours Thesis in Health Science (P/T Year 1)

Year 2

1H session

400560.2	Honours Thesis in Health Science (P/T Year 2)

2H session

400560.2	Honours Thesis in Health Science (P/T Year 2)

Bachelor of Health Science (Personal Development, Health and Physical Education)

4549.2

The Bachelor of Health Science (Personal Development, Health and Physical Education) course enables students to develop wide ranging skills, which may be applied post graduation in a variety of contexts. Completion of a further Master of Teaching (Secondary or similar qualification) will enable graduates to teach the PDHPE curriculum in secondary schools. The strength of this PDHPE program is the development of graduates with a holistic understanding of the concepts of health and physical activity and it's relationship to other components of personal development and physical education.

Study Mode

Three years full-time study.

Location

Campus	Attendance	Mode
Penrith Campus	Full Time	Internal

Accreditation

Graduates of the Bachelor of Health Science (PDHPE) can apply to complete a Masters of Education through UAC. On completion of a Masters of Education they can apply for teaching status with the Board of Studies NSW.

Admission

Potential students normally apply for admission to the course through the Universities Admission Centre (UAC). Other admission schemes of the University of Western Sydney are available. International applicants should contact UWS International for details on admission. Contact information for the International Office is available via the UWS website.

Course Structure

Qualification for this award requires the successful completion of 240 credit points including the units listed in the recommended sequence below.

Recommended Sequence

Full-time

Year 1

Autumn session

400794.1	PDHPE: Exploring Movement Skills
300361.1	Introduction to Human Biology
400780.2	Nutrition, Physical Activity and Mental Health
400781.1	Dynamics of Health

Spring session

400808.2 Outdoor Recreation
100663.1 Foundations of Wellbeing
400136.1 Introduction to the Psychology of Health
400137.1 Introduction to Research for Health Sciences

Year 2

Autumn session

400782.1 Essentials of Health Promotion
400791.1 Drug Use in Society
400796.1 PDHPE: Efficient Movement Principles

And one elective

Spring session

400272.1 Health Care Systems
400792.1 PDHPE: Lifelong Physical Activity and Fitness
400798.1 PDHPE: Games for Diverse Groups

And one elective

Year 3

Autumn session

400797.1 PDHPE: Gymnastics
400795.1 Contemporary Youth Health Issues
400793.1 PDHPE: Invasion Games

And one elective

Spring session

400799.1 PDHPE: Recreational Sports
400280.3 Sexuality
100672.1 Introduction to Dance

And one elective

Elective Units

Elective units in the Bachelor of Health Science may be chosen from across UWS, provided that unit prerequisites are met and space is available.

The following is a list of elective units in the Health Science/ PDHPE discipline areas, which are not listed elsewhere in the Handbook. These electives are open to students from across UWS provided that pre-requisites are met and space is available.

100674.1 Drugs in Sport
100675.1 Outdoor Recreation 2
100676.1 Outdoor Recreation 3
100677.1 Outdoor Recreation 4
400283.1 Health Services Information Management
400284.1 Health Services Quality Management
400285.1 Public Health
400286.1 Injury Prevention

Bachelor of Housing

3635.3

This course was previously coded
2500.3 Bachelor of Housing

The Bachelor of Housing will prepare students to become managers in the private housing industry. They learn how to plan, finance and construct large scale housing projects.

The Degree provides for specialised skills for working in the housing industry with a strong emphasis on the design, construction, maintenance, and economics of dwellings for human habitation. The Bachelor of Housing degree gives students the opportunity to use the university's state-of-the-art, purpose-built laboratory complex to conduct experiments across the range of building sciences including acoustics, heat flow through a building, corrosion of materials, concrete testing, and much more.

This course is aimed at providing the skills and abilities necessary to perform competently at a professional level in the building industry, in one or more of the following roles: property developer; housing project manager site supervisor; building surveyor; estimator; facilities manager; property manager; building consultant.

Study Mode

Three years full-time or six years part-time.

Location

Campus	Attendance	Mode
Blacktown Campus	Full Time	Internal
Blacktown Campus	Part Time	Internal
Penrith Campus	Full Time	Internal

Advanced Standing

Appropriately qualified TAFE applicants may be given up to 80 credit points worth of specified advanced Standing.

Admission

UAI or mature-age entry through the Universities Admissions Centre (UAC). International applicants should contact UWS International for details on admission. Contact information for the International Office is available via the UWS website.

Normal UWS UAI score with HSC 2 unit Mathematics, Physics and English for entry into first year.

Course Structure

Qualification for this award requires the successful completion of 240 credit points which include the units listed in the recommended sequence below.

Students should have no more than 100 credit points of Level 1 units and no fewer than 60 credit points of Level 3 Units. Electives within the sequence may be used towards obtaining an approved major or sub-major for this award.

In some instances due to resource and demand considerations, there may be a need to rearrange the sequence set down below.

Electives within the sequence may be used towards obtaining an approved major or sub-major for this award.

Recommended Sequence

Full-time

Year 1

Autumn session

BG101A.1	Building 1
BG105A.1	Graphic Communication and Design (V1)
300674.1	Engineering, Design and Construction Practice
300016.1	Design Science

Spring session

200184.2	Introduction to Business Law
200101.2	Accounting Information for Managers
BG103A.1	Building 2
MG102A.2	Management Foundations

Year 2

Autumn session

BG204A.1	Construction Technology 1 (Civil)
200486.1	Quantity Surveying 1
200472.2	Material Science in Construction
BG303A.1	Development Control (V2)

Spring session

BG207A.1	Construction Technology 2 (Substructure)
200468.1	Estimating 1
200482.1	Construction in Practice 1

And one elective

Year 3

Autumn session

200485.1	Decision Making for Construction Professionals
MG313A.1	Project Management
PL302A.1	Construction Planning (V1)

And one elective

Spring session

BG302A.1	Building Regulation Studies
300053.2	Professional Practice
200292.1	Building Law

And one elective

Electives

Students may choose electives from any course at UWS including the following:

200469.1	Quality and Value Management
200470.2	Construction Technology 4 (Steel Construction)
200487.1	Quantity Surveying 2
200502.2	Construction Technology 3 (Concrete Construction)
200503.1	Construction Information Systems

Bachelor of Housing students planning to transfer into the Bachelor of Construction Management are advised to take the following electives:

200502.2	Construction Technology 3 (Concrete Construction)
200470.2	Construction Technology 4 (Steel Construction)

Bachelor of Industrial Design

3503.4

The industrial design program prepares students to be flexible and innovative, with the emphasis placed on design, and its place in and effect on society and people. The Bachelor of Industrial Design program takes account of the rapid transformation of communication and industrial technologies, and recognizes the need for designers to resolve increasingly complex issues. It provides students with the knowledge and skills to enable them to respond with flexibility to the challenges of industrial design.

Study Mode

Four years full-time. Reduced loads are available with consultation during Years 1 to 3 of the program.

Location

Campus	Attendance	Mode
Penrith Campus	Full Time	Internal

Advanced Standing

Where tertiary studies have been undertaken previously, credit transfer may be approved, reducing the overall study time.

Accreditation

Graduates are eligible for membership of the Design Institute of Australia (DIA).

Admission

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC).
UAC

International applicants must apply directly to the University of Western Sydney via UWS International.
UWS International

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Details of minimum English proficiency requirements and acceptable proof can be found on the Universities Admissions Centre website (UAC).
UAC

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and UWS.

Course Structure

Qualification for this award requires the successful completion of 320 credit points which include the units listed in the recommended sequence below. To be eligible to graduate from this course, students are required to complete a sub-major. Refer to the 'note' after the sub-major listing, for further details.

Recommended Sequence

Full-time

Year 1

Autumn session

300674.1	Engineering, Design and Construction Practice
300016.1	Design Science
10943.2	Applied Ergonomics
200191.3	Fundamentals of Mathematics

Spring session

300462.1	Engineering and Design Concepts
300302.1	Industrial Graphics 1: Presentation
300304.2	Sustainable Design: Materials Technology
200083.1	Marketing Principles

Year 2

Autumn session

300305.2	Design Studio 1: Themes and Variations
300309.2	Sustainable Design: Life Cycle Analysis
300282.1	Industrial Graphics 2: Transition

And one sub-major alternate unit or one elective

Spring session

300308.2	Design Studio 2: The Design Proposal
300306.2	Sustainable Design: Sustainable Futures
300310.2	Industrial Graphics 3: 3D Solids

And one sub-major alternate unit or one elective

Year 3

Autumn session

300311.2	Design Studio 3: Product Realisation
300014.2	Design Management 3: Organisational Skills for Designers

And two sub-major alternate units or two electives

Spring session

300313.2	Design Studio 4: Simulate to Innovate
300314.1	Designed Inquiry

And two sub-major alternate units or two electives

Year 4

Honours Stream

Autumn session

85032.2	Industrial Design Project (Commencement)

Spring session

85033.2	Industrial Design Project (Completion)

Industrial Experience

10915.2	Industrial Experience

Year 4

Coursework Stream

Autumn session

300459.1	Major Project Commencement

Choose one of

300012.2	Design Management 1: Product Design Audit
300312.2	Industrial Graphics 4: Surface

Spring session

300460.1	Major Project Completion

Choose one of

300013.2	Design Management 2: Corporate Image and Identity
300015.2	Design Management 4: Design Process
300315.1	Industrial Graphics 5: Integrated
86301.2	Automated Manufacturing

Industrial Experience

10915.2	Industrial Experience

Majors

M3503IDM.1	Innovation Design Management
M3503IIG2.1	Interactive Industrial Graphics
M3503INTDM.1	International Design Management

Sub-majors

S3502DM.1	Design Management
S3502IG.1	Industrial Graphics
S3502SD.1	Sustainable Design

Note: In addition to the sub-major streams/electives offered from within Industrial Design (as listed above) students may choose other sub-major streams/electives within the School of Engineering and Industrial Design or the University of Western Sydney or other universities (as cross institutional studies).

Bachelor of Information and Communications Technology

3639.1

The Bachelor of Information and Communications Technology is a professional ICT course that provides graduates with a skills and knowledge base in networking and IT applications areas of ICT and the ability to apply practical solutions across ICT. It allows students to develop skills in application development, program design, systems analysis & design, networks, web-design, and the implementation of technology.

Their attributes can be conceptually grouped into the knowledge and skills necessary to: •investigate - the ability to draw on a solid technological and software core of ICT knowledge and practice in analysing and developing applications; •integrate – the ability to amalgamate the knowledge and skills in developing new applications and new application areas; •innovate - the required skills and knowledge base to keep up to date with the rapid development in technology and practice across the ICT as an extension of their current understandings and the ability to find innovative ICT solutions and move the ICT field forward.

The Bachelor of Information and Communications Technology is a three year ICT course being accredited by the Australian Computer Society. It provides a solid foundation in Networks, Databases, Systems Analysis & Design, Programming, Web Technologies, Project Management, Professional Communications and Operating Systems and associated Computer Security. It also covers the necessary mathematical and statistical skills as needed by an ICT practitioner. The foundation core provides a basis for electives, sub-majors or majors in further studies including the areas of networks, web, interactive technologies, Mathematics, Statistics, Computational Decision Making, Knowledge Discovery and Data Mining, and health informatics. Some of these majors and electives may be offered at particular campuses and subject to the approval of the Head of Program. Accreditation at Professional level is being sought with the Australian Computer Society.

Study Mode

Three year full time course.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Parramatta Campus	Full Time	Internal
Penrith Campus	Full Time	Internal

Accreditation

Accreditation at Professional level is being sought with the Australian Computer Society.

Admission

Assumed knowledge required: HSC Mathematics and any two units of HSC English.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC).
UAC

International applicants must apply directly to the University of Western Sydney via UWS International.
UWS International

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Details of minimum English proficiency requirements and acceptable proof can be found on the Universities Admissions Centre website (UAC).
UAC

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and UWS.

Course Structure

Qualification for this award requires the successful completion of 240 credit points which include the units listed in the recommended sequence below.

Recommended Sequence

Full-time - Start Year Intake

Year 1

Autumn session

300580.1	Programming Fundamentals
100483.1	Principles of Professional Communication 1
300585.1	Systems Analysis and Design
300700.2	Statistical Decision Making

Spring session

300565.1	Computer Networking
300144.2	Object Oriented Analysis
300104.1	Database Design and Development

And one elective

Year 2

Autumn session

300582.1	Technologies for Web Applications
300581.1	Programming Techniques
300095.2	Computer Networks and Internets

And one elective

Spring session

300583.1	Web Systems Development
300699.1	Discrete Structures and Complexity

And two electives

Year 3

Autumn session

300570.2	Human-Computer Interaction
300578.1	Professional Development
300698.1	Operating Systems Programming

And one elective

Spring session

300579.1 Professional Experience

And three electives

Full-Time Mid Year Intake

Spring session 1

300565.1 Computer Networking
300104.1 Database Design and Development
300144.2 Object Oriented Analysis

And one elective

Autumn session 2

300582.1 Technologies for Web Applications
300580.1 Programming Fundamentals
300585.1 Systems Analysis and Design
300700.2 Statistical Decision Making

Spring session 3

300583.1 Web Systems Development
300699.1 Discrete Structures and Complexity

And two electives

Autumn session 4

300570.2 Human-Computer Interaction
300581.1 Programming Techniques
100483.1 Principles of Professional Communication 1
300095.2 Computer Networks and Internets

Spring session 5

300579.1 Professional Experience

Three electives

Autumn session 6

300578.1 Professional Development
300698.1 Operating Systems Programming

And two electives

Majors

The following major is available only to students enrolled in the Bachelor of Information and Communications Technology

M3025.1 Networking

The following majors are available to only those students enrolled in the Bachelor of Computing and Bachelor of Information and Communications Technology courses

M3001.1 Advanced Programming
M3000.1 Computer Systems

The following major is available to all students except those enrolled in the Networks or Information Systems key programs within the Bachelor of Computing course, and the Bachelor of Information and Communications Technology course

M3002.1 Information Technology

The following major is available to all students except those enrolled in the Health Informatics key program within the Bachelor of Computing course

M3004.1 Health Informatics

The following major is available to all students except those enrolled in the Bachelor of Computing or the Bachelor of Computer Science or the Bachelor of Information and Communications Technology courses

M3003.1 Web Systems Development

The following majors are available to all students

M3023.1 Computational Decision Making
M3005.1 Entertainment Computing
M3024.1 Knowledge Discovery and Data Mining
M3021.1 Mathematics
M3022.1 Statistics

Sub-majors

The following sub-major is available only to students enrolled in the Bachelor of Information and Communications Technology

SM3031.1 IT Support

The following sub-majors are available to only those students enrolled in the Bachelor of Computing or Bachelor of Information and Communications Technology courses

SM3005.1 Applied Mathematics
SM3000.1 Computer Systems
SM3004.1 Formal Systems
SM3001.1 Systems Administration
SM3003.1 Systems Programming
SM3002.1 Systems Security

Two sub-majors in Web Development are available, one for computing students, the other for non-computing students.

Computing students only (that is, students enrolled in the Bachelor of Computing or Bachelor of Information and Communications Technology courses):

SM3006.1 Web Application Development (for Computing Students)

Non-computing students only:

SM3007.1 Web Application Development (for Non-Computing Students)

The following sub-major is available to all students except those enrolled in the Bachelor of Computing (Networks)

SM3008.1 Networking

The following sub-majors are available to all students except those enrolled in the Health Informatics key program within the Bachelor of Computing course

SM3010.1 Health Information Applications
SM3009.1 Health Information Management

The following sub-majors are available to all students

SM3027.1 Computational Decision Making

SM3011.1	Entertainment Computing
SM3028.1	Knowledge Discovery and Data Mining
SM3025.1	Mathematics
SM3026.1	Statistics

Bachelor of Information Technology (Honours)

3613.1

The Honours program encourages independence in learning and research; further develops academic ability, provides the opportunity to pursue undergraduate studies to a more advanced level, deepen intellectual understanding in the major field of study and develop research skills. Honours is a recognised point of entry into postgraduate research studies at PhD and Masters levels. If a career in industry is sought, Honours enables study to a more advanced level with a higher qualification. The course has the opportunity for direct commercial and industrial involvement with a diverse range of organisations through the provision and joint supervision of research projects.

Study Mode
One year full-time or two years part-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Campbelltown Campus	Part Time	Internal
Parramatta Campus	Full Time	Internal
Parramatta Campus	Part Time	Internal
Penrith Campus	Full Time	Internal
Penrith Campus	Part Time	Internal

Accreditation
Professional accreditation by the Australian Computer Society may be available, depending on a student's undergraduate degree.

Course Structure
Qualification for this award requires the successful completion of 80 credit points including the units listed below.

The award is a year long program that will be divided into three main components: Computing Research Process and Practice (10 credit points), Computing Honours Seminar Program (10 credit points) and the Computing Honours Thesis (60 credit points).

Full-time

Year 1

Autumn session

300365.1	Computing Research Process and Practice
300364.2	Computing Honours Seminar Program
300363.2	Computing Honours Thesis

Spring session

300364.2	Computing Honours Seminar Program
300363.2	Computing Honours Thesis

Part-time

Year 1

Autumn session

300365.1	Computing Research Process and Practice
300363.2	Computing Honours Thesis

Spring session

300364.2	Computing Honours Seminar Program
300363.2	Computing Honours Thesis

Year 2

Autumn session

300364.2	Computing Honours Seminar Program
300363.2	Computing Honours Thesis

Spring session

300363.2	Computing Honours Thesis

Bachelor of Medical Research

4647.1

This course gives students who are enrolled in the UWS Bachelor of Medicine / Bachelor of Surgery the opportunity to take leave of absence from the normal medical course for 12 months full-time or 24 months part-time, after successfully completing years 1 and 2 of MBBS, in order to gain a more detailed experience in medical research than is provided in the normal medical course. Years 1 and 2 of the B Med Res are identical to years 1 and 2 of MBBS. It is expected that students will return to the medical course on completion of the intercalated year, which will complete the requirements for the B Med Res, but the degree is also available as an exit point for those who do not wish to resume MBBS.

Study Mode
One year full time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Campbelltown Campus	Part Time	Internal

Admission
Students must be currently enrolled in Bachelor of Medicine / Bachelor of Surgery at UWS, and have successfully completed at least two years of that course, normally with a credit average, before being admitted to year 3 of the intercalated Bachelor of Medical Research.

Course Structure

Qualification for this award requires the successful completion of 240 credit points including the units listed in the recommended sequence below.

Recommended Sequence

Year 1

1H Session

400737.1	Scientific Basis of Medicine 1
400738.1	Health Practice 1

2H Session

400737.1	Scientific Basis of Medicine 1
400738.1	Health Practice 1

Year 2

1H Session

400739.1	Scientific Basis of Medicine 2
400740.1	Health Practice 2

2H Session

400739.1	Scientific Basis of Medicine 2
400740.1	Health Practice 2

Year 3

Students choose one of two pathways in their 3rd Year

Pathway 1

1H

400813.1	Medical Research Project
300411.2	Research Methodology and Experimental Design

2H

400813.1	Medical Research Project
300411.2	Research Methodology and Experimental Design

Pathway 2

1H

400813.1	Medical Research Project

Autumn

400148.2	Quantitative Research

2H

400813.1	Medical Research Project

Spring

400137.1	Introduction to Research for Health Sciences

Bachelor of Medical Science

3577.3

This degree comprises three areas of major: biomedical science, medicinal chemistry and human bioscience. The biomedical science major focuses on microbiology, biochemistry and aspects of health. The medicinal chemistry major focuses on chemistry and biochemistry, while the human bioscience major focuses on anatomy, physiology and pharmacology. Graduates of this degree will find employment in areas such as medical research laboratories, hospital laboratories and in pathology laboratories and be well suited for positions in the pharmaceutical, medical sales and various research and quality control laboratories, as well as further study including research degrees and graduate medicine degrees.

Study Mode

Three years full-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Campbelltown Campus	Part Time	Internal
Hawkesbury Campus	Full Time	Internal
Hawkesbury Campus	Part Time	Internal

Admission

Assumed knowledge required: At least two units of biology, chemistry, mathematics and physics.

Course Structure

Qualification for this award requires the successful completion of 240 credit points which include the units listed in the recommended sequence below.

Recommended Sequence

Full-time

Year 1

300319.1	Introduction to Anatomy and Histology
300320.1	Introduction to Human Physiology

Plus one unit from each of the following combinations:

Choose one of

300543.1	Cell Biology
300221.1	Biology 1

Choose one of

300554.1	Principles of Chemistry
300224.2	Chemistry 1

Choose one of

300539.1	Biodiversity
300222.1	Biology 2

Choose one of

300550.1 Medicinal Chemistry
300225.2 Chemistry 2

And two Alternate units (Note 1)

Note 1 - Year 1 Alternate Units

Choose one of

300558.1 Physics 1
300134.1 Introduction to Information Technology

Only one of the following mathematics/statistics units may be selected

200263.1 Biometry
200189.1 Concepts of Mathematics
200191.3 Fundamentals of Mathematics
200192.1 Statistics for Science

Year 2

300323.1 Pathological Basis of Disease

Choose one of

300555.1 Proteins and Genes
300219.1 Biochemistry 1

And four Major units
And two electives

Year 3

Four Major units
And four electives

Biomedical Science Major - Campbelltown campus

M3577BS_C.1 Biomedical Science

Biomedical Science Major - Hawkesbury campus

M3577BS_H.1 Biomedical Science

Medicinal Chemistry Major - Campbelltown campus

M3577MCV2.1 Medicinal Chemistry

Human Bioscience Major - Campbelltown campus

M3577HBV2.1 Human Bioscience

Bachelor of Medical Science (Honours)

3610.1

The Honours program encourages independent learning and research, further develops academic ability, provides the opportunity to pursue undergraduate studies to a more advanced level, deepens intellectual understanding in the major field of study and develops research skills. An Honours degree is a recognised point of entry for postgraduate research studies at PhD level and enhances a graduate's ability to perform at a high level in a commercial or public organisation. The Honours program consists of a rigorous program of supervised research on a medically related topic, culminating in the production of a thesis and presentation of a final seminar. Students enrol in a 60 credit point honours project and either a 20 credit point research methodology and experimental design unit or a 20 credit point advanced topics and research skills unit, allowing them to explore more advanced topics, including wider areas of research and their applications in science technology and medicine. Although the Honours course is available on several different campuses, some or all of the lectures, workshops and seminars may be held centrally at a single campus to ensure that students are exposed to as wide a range of research topics as possible. The course can provide opportunities for direct commercial and industrial involvement with a diverse range of organisations through the provision of, and joint supervision of, research projects.

Study Mode

One year full-time or two years part-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Campbelltown Campus	Part Time	Internal
Hawkesbury Campus	Full Time	Internal
Hawkesbury Campus	Part Time	Internal
Parramatta Campus	Full Time	Internal
Parramatta Campus	Part Time	Internal
Penrith Campus	Full Time	Internal
Penrith Campus	Part Time	Internal

Course Structure

Qualification for this award requires the successful completion of 80 credit points as per the recommended sequence below.

Recommended Sequence

Full-time

Year 1

Autumn session

300410.2 Advanced Topics and Research Skills
300412.2 Science, Technology and Environment Honours Project

Spring session

300410.2 Advanced Topics and Research Skills
300412.2 Science, Technology and Environment Honours Project

Part-time

Year 1

Autumn session

300410.2 Advanced Topics and Research Skills

Spring session

300410.2 Advanced Topics and Research Skills

Year 2

Autumn session

300412.2 Science, Technology and Environment Honours Project

Spring session

300412.2 Science, Technology and Environment Honours Project

Bachelor of Medicine, Bachelor of Surgery

4641.2

This course prepares graduates for eligibility for registration as a medical practitioner in Australia or New Zealand. It is an integrated program in which the basic sciences and areas of knowledge underpinning medical practice are learnt in a framework that emphasises active learning, based on clinical and other relevant scenarios. Teaching of clinical skills begins in the first year and continues throughout the program. In the last three years of the course, students undertake clinical placements in a wide range of settings across Greater Western Sydney and beyond. The course is arranged around three vertical themes: Professional Skills and Attitudes, The Scientific Basis of Medical Practice, and Health and Illness in Societies.

Study Mode
Five years full-time. In the first two years of the course, students will study at both the Campbelltown campus of the University and at the Liverpool TAFE precinct. In the later years, students may be required to spend a period of time in one or more clinical rotations outside the Sydney metropolitan area, and will also be rotated to a substantial number of different locations within Sydney.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal

Advanced Standing
The course is extensively integrated horizontally, and as a result it will not be possible to grant credit for units taken in other courses.

Accreditation
Graduates will be eligible for registration by medical boards in all Australian states and territories and New Zealand, and able to apply for registration in a number of overseas countries.

Admission
Potential students should apply through the Universities Admission Centre (UAC). Selection is on the basis of:

- academic merit (UAI or its equivalent, for those without a completed degree; grade point average in their most recent degree, for graduate applicants)
- Results of the Undergraduate Medicine and Health Sciences Admission Test (UMAT); and
- Performance at an interview.

Evidence of connection to Greater Western Sydney may also be taken into account.

The requirements for International applicants to be considered for admission to the medical course for 2008 are:

- Achieve a scholastic performance in the final year of secondary school equivalent to a New South Wales University Admission Index of 95 (International Baccalaureate 34) or higher
- for those who have completed a 3 year or longer Bachelors degree, the grade point average in the degree must be at least 5.5 on the 7 point scale
- Have completed IELTS or equivalent examination (Academic Module) and achieve a minimum score of 6.5 in each of the four components, and an overall score of at least 7.0
- Sit the International Student Admissions Test (ISAT) administered by the Australian Council for Educational Research (ACER). For details see the ACER web page at www.acer.edu.au

For more information on entry requirements and how to apply please see the School of Medicine web page: http://www.uws.edu.au/about/acadorg/schools/medicine/courses

Special Requirements
To be enrolled in this course students must comply with the current occupational screening and vaccination policy of NSW Health at course commencement. Students must obtain Student Registration by the Medical Board of NSW, and must successfully complete a Work Cover Authority approved First Aid Certificate prior to the completion of the first semester of the course.

Course Structure
Qualification for the award requires the successful completion of 400 credit points including the units listed in the sequence below.

Please note that successfully passing the previous year's units is a prerequisite for attempting the units in the following year, therefore deviations from the sequence below will not be possible.

Recommended Sequence

Full-time

Year 1

1H Session

400861.1 Foundations of Medicine 1

2H Session

400861.1 Foundations of Medicine 1

Year 2

1H Session

400862.1 Foundations of Medicine 2

2H Session

400862.1 Foundations of Medicine 2

Year 3

400810.2 Integrated Clinical Rotations 1

Year 4

400811.1 Integrated Clinical Rotations 2

Year 5

Integrated Clinical Rotations 3

Please Note: the curriculum for year 5 is subject to approval, and therefore may be altered.

Bachelor of Natural Science

3637.1

The Bachelor of Natural Science is a broadly based, multi-disciplinary undergraduate degree offering flexibility and choice through a range of complementary key programs, each of which embodies a particular discipline. The degree seeks to equip all students with a good understanding of fundamental academic skills complemented by a high level of discipline specific knowledge. Each specific discipline has a capstone unit in engaged learning, to ensure that graduates will be 'business ready' in terms of dealing with real world issues and problems and generating real world supply chain solutions. In addition to the key programs, students will be able to complete (and will be encouraged to do so) either a major or a sub-major related to another key program. For example, the Agriculture key program has the related Managing Enterprises major which is available to all Bachelor of Natural Science students. In addition to these majors and sub-majors, most students (except for key programs that have professional accreditation requirements) will be able to select six elective units from across UWS, subject to availability and UWS rules. Finally, there is the option of completing a separate business honours course for high achieving students who meet the associated entry requirements.

Study Mode

Three years full-time or six years part-time.

Location

Campus	Attendance	Mode
Hawkesbury Campus	Part Time	External
Hawkesbury Campus	Full Time	Internal
Hawkesbury Campus	Part Time	Internal

Accreditation

The Bachelor of Natural Science (Environment and Health) key program includes a major in Environmental Health Management which if completed in addition to the key program is accredited by the Australian Institute of Environmental Health (AIEH).

Admission

For UAC entry the following sets of Assumed Knowledge and Recommended Studies apply:

AGRICULTURE - Recommended studies: One or more of agriculture, business studies, geography, society and culture, and any two units of mathematics and any two units of science.

AGRICULTURAL BUSINESS - Assumed knowledge: Any two units of English. Recommended studies: One or more of agriculture, business studies, geography, society and culture, and any two units of mathematics and any two units of science.

ANIMAL SCIENCE - Assumed knowledge: Any two units of English and any two units of mathematics. Recommended studies: One or more of biology, chemistry, geography or agriculture.

ENVIRONMENT and HEALTH - NSW HSC mathematics or equivalent and NSW HSC science or equivalent.

ENVIRONMENTAL MANAGEMENT - Any two units of science (biology or chemistry recommended) and any two units of English.

FOOD SYSTEMS - Assumed knowledge: Any two units of English and any two units of mathematics. Recommended studies: One or more of biology, chemistry or agriculture.

HORTICULTURE - Recommended studies: Any two units of mathematics and any two units of science (biology or chemistry recommended).

NATURE CONSERVATION - Assumed knowledge: Any two units of English and any two units of mathematics. Recommended studies: One or more of biology, chemistry, geography or agriculture.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC).
UAC

International applicants must apply directly to the University of Western Sydney via UWS International.
UWS International

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Details of minimum English proficiency requirements and acceptable proof can be found on the Universities Admissions Centre website (UAC).
UAC

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and UWS.

Course Structure

Qualification for this award requires the successful completion of 240 credit points which includes compulsory units plus units associated with a particular Natural Science discipline (together making up the Key Program) and free elective units as outlined in the key program structures.

Students must complete a minimum of 60 credit points within their Key Program at Level 3; for some Key Programs this may include a combination of core units and elective units.

Key Programs

All students must complete a Key Program.

KT3010.1 Agriculture

Agriculture is an exciting, inter disciplinary area that is essential to feeding the growing world population.

KT3011.1 Agricultural Business

The agribusiness sector is one of Australia's largest and most vibrant industry sectors, and provides a broad range of exciting career opportunities. The Sydney basin is the focus for Australia's agricultural business.

KT3013.1 Animal Science

Interactions between people and animals are increasing as we become more dependent on animals for companionship and food production, and strive to understand the greater pressures being placed on our unique native wildlife.

KT3008.1 Environment and Health

The air we breathe, the water we drink, the food we eat, and the places we live, work and play all have major impacts on our health and well being. The Environment and Health key program is available on campus or by distance mode (UAC code 706385).

KT3007.1 Environmental Management

Environmental managers are concerned with ensuring the ecological sustainability of human development. History has shown that if we don't effectively manage our environment, we will degrade it – possibly to the point where it can no longer sustain us.

KT3012.1 Food Systems

The food industry is vital to Australia in terms of profitability, exports and jobs growth, with lots of employment opportunities. The Food Systems program covers the value chain management of the food industry, from farm to fork.

KT3009.1 Horticulture

Horticulture is an exciting and diverse field encompassing science, technology, business, tourism and sociology. It impacts our lives through parks and gardens, organic farming, recreational landscape development, rural tourism and the use of plants in alternative therapies, and its practitioners play a key role in our country's economic future.

KT3014.1 Nature Conservation

Nature conservation is shaped by the interplay of diverse political, cultural, economic, scientific and technological forces across Australia and internationally. With the increasing exploitation of the world's non-renewable resources and the rapidly unfolding degradation of the planet's natural systems there is an urgent need to conserve those wild places we have left and begin to restore the damage man has done.

Environmental Health Management Major

Students undertaking the Environment and Health key program may complement their studies by completing the Environmental Health Management major, which is accredited through the Australian Institute for Environmental Health.

M3006.1 Environmental Health Management

Bachelor of Nursing

4642.2

This course prepares graduates for eligibility to apply for registration throughout Australia as beginning professional generalist registered nurses. The focus of the course is on inquiry-based learning, critical thinking and reflective practice in relation to the theory and practice of nursing in health and health breakdown across the lifespan. Students study application of physical and behavioural sciences to nursing; inquiry and evidence-based practice principles and utilisation within nursing; nursing care of individuals, families and groups from diverse backgrounds across the lifespan. The acquisition of nursing knowledge and skills occurs initially in campus-based simulated clinical practice settings and consolidation occurs as students undertake clinical placements in a variety of health care settings. Prospective students should be aware that full disclosure of any issues of impairment or misconduct is a declaration requirement when applying for registration as a registered nurse.

Study Mode

Three years full-time or maximum six years part-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Hawkesbury Campus	Full Time	Internal
Parramatta Campus	Full Time	Internal

Advanced Standing

Prospective students holding the Enrolled Nurses Certificate Level IV or Advanced Certificate with Medication Administration Module will be granted automatic entry to the B Nursing. In recognition of their TAFE studies and professional experience, this group will be granted advanced standing in the following units:

- Elective (unspecified 10 credit points)
- Nursing for Health and Wellbeing
- Understanding Good Health
- Behavioural Foundations for Nursing Practice

Admission

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC).
UAC

International applicants must apply directly to the University of Western Sydney via UWS International.
UWS International

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Details of minimum English proficiency requirements and acceptable proof can be found on the Universities Admissions Centre website (UAC).
UAC

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and UWS.

Special Requirements

Students will need to have completed the NSW Health Special Requirements for clinical practicum attendance. At present these include: Prohibited Persons Employment Declaration (PPED); Criminal Record Check (CRC): Adult Health Immunisation Schedule and Workcover accredited Senior First Aid Certificate.

Course Structure

Qualification for this award requires the successful completion of 240 credit points including the units listed in the recommended sequence below.

Full-time

Year 1

Autumn session

400745.2 Nursing for Health and Wellbeing
400746.2 Understanding Good Health
400747.2 Behavioural Foundations of Nursing Practice
400748.2 Becoming a Nurse

Spring session

400749.2 Nursing and Health Breakdown
400750.2 Introduction to Health Breakdown
400751.2 Nursing and Healthy Communities
400752.2 Knowing Nursing

Year 2

Autumn session

400753.3 Medical-Surgical Nursing 1
400814.2 Alterations in Nutrition, Elimination and Sexuality
400755.2 Evidence-Based Nursing 1
400756.2 Family Health Care: Health Issues and Australian Indigenous People

Spring session

400757.3 Medical-Surgical Nursing 2
400815.2 Alterations in Breathing, Work/Leisure and Mobility
400759.3 Mental Health Nursing 1
400760.2 Family Health Care: Child and Adolescent Nursing

Year 3

Autumn session

400761.2 Family Health Care: High Acuity Nursing
400762.2 Mental Health Nursing 2
400763.2 Family Health Care: Chronicity and Palliative Care Nursing

And one elective

Spring session

400764.2 Transition to Graduate Practice
400765.2 Evidence-Based Nursing 2
400766.2 Leadership in Graduate Practice
400767.2 Family Health Care: Older Adult Nursing

Bachelor of Nursing - Graduate Entry

4643.2

This course prepares graduates for eligibility to apply for registration throughout Australia as beginning professional registered nurses. The focus of the course is on inquiry-based learning, critical thinking and reflective practice in relation to the theory and practice of nursing in health and health breakdown across the lifespan. Students study application of physical and behavioural sciences to nursing; inquiry and evidence-based practice principles; and utilisation within nursing; and the nursing care of individuals, families and groups from diverse backgrounds across the lifespan. The acquisition of nursing knowledge and skills will occur in campus-based simulated clinical practice settings and consolidation occurs as students undertake clinical placements in a variety of health care settings.

Study Mode

Two years full-time.

Location

Campus	Attendance	Mode
Hawkesbury Campus	Full Time	Internal

Advanced Standing

In the Bachelor of Nursing (Graduate Entry) course recognition of prior learning results in admission to the course. No further advanced standing (RPL) will be granted.

Accreditation

Following approval and accreditation by the Nurses and Midwives Board of NSW graduates holding a Bachelor of Nursing (Graduate Entry) degree would be considered eligible to apply to the Board to join the Register of Nurses. The application to register will require applicants to disclose any impairment or academic misconduct.

Admission

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC).
UAC

International applicants must apply directly to the University of Western Sydney via UWS International.
UWS International

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Details of minimum English proficiency requirements and acceptable proof can be found on the Universities Admissions Centre website (UAC).
UAC

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and UWS.

Applicants must have successfully completed an undergraduate degree in biological sciences: human biological sciences, anatomy and physiology, chemistry, physics, biology, natural science, microbiology, medicine, dentistry, pharmacy, human science, naturopathy, complimentary medicine

OR

An undergraduate degree in arts/behavioural sciences: human behavioural and social sciences, psychology, sociology, human communications, human behaviour

Special Requirements

To be enrolled in this course students must comply with the current occupational screening and vaccination policy of NSW Health at course commencement. The Bachelor of Nursing (Graduate Entry) program incorporates the teaching of nursing practical techniques/ skills and clinical training through physical contact between supervising clinicians, lecturers, students and patients of both genders and all backgrounds. This contact is guided by protocols and codes of conduct and is a compulsory requirement of the course as currently accredited. Students entering the program must do so with an understanding that accommodations cannot be made in this area for any reason.

Course Structure

Qualification for this award requires the successful completion of 170 credit points including the units listed in the recommended sequence below.

Recommended Sequence

Full-time

Year 1

Quarter 1 session

400776.2	Introduction to Nursing Practice

Autumn session

400753.3	Medical-Surgical Nursing 1
400814.2	Alterations in Nutrition, Elimination and Sexuality
400755.2	Evidence-Based Nursing 1
400756.2	Family Health Care: Health Issues and Australian Indigenous People

Spring session

400757.3	Medical-Surgical Nursing 2
400815.2	Alterations in Breathing, Work/Leisure and Mobility
400759.3	Mental Health Nursing 1
400760.2	Family Health Care: Child and Adolescent Nursing

Year 2

Autumn session

400761.2	Family Health Care: High Acuity Nursing
400762.2	Mental Health Nursing 2
400763.2	Family Health Care: Chronicity and Palliative Care Nursing

Spring session

400764.2	Transition to Graduate Practice
400765.2	Evidence-Based Nursing 2
400766.2	Leadership in Graduate Practice
400767.2	Family Health Care: Older Adult Nursing

Bachelor of Nursing (Advanced)

4648.1

This course prepares graduates for eligibility to apply for registration throughout Australia as beginning professional generalist registered nurses. The focus of the course is on inquiry-based learning, critical thinking and reflective practice in relation to the theory and practice of nursing in health and health breakdown across the lifespan. Students study application of physical and behavioural sciences to nursing; inquiry and evidence-based practice principles and utilisation within nursing; nursing care of individuals, families and groups from diverse backgrounds across the lifespan. The acquisition of nursing knowledge and skills occurs initially in campus-based simulated clinical practice settings and consolidation occurs as students undertake clinical placements in a variety of health care settings. Prospective students should be aware that full disclosure of any issues of impairment or misconduct is a declaration

requirement when applying for registration as a registered nurse.

Students in the Bachelor of Nursing (Advanced) will follow the study program set out for the 4642 - Bachelor of Nursing. Each student will have an Academic Mentor and will participate in additional compulsory activities related to nursing research and professional practice. To maintain their enrolment in the Bachelor of Nursing (Advanced) students must maintain a Grade Point Average of 5.5 or above, otherwise they will be transferred to the standard 4642 – Bachelor of Nursing course. At enrolment students will be required to sign a declaration acknowledging the requirement to maintain a ≥ 5.5 GPA.

Study Mode

Three years full-time study.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Hawkesbury Campus	Full Time	Internal
Parramatta Campus	Full Time	Internal

Accreditation

The Bachelor of Nursing (4642) has accreditation and approval by the Nurses and Midwives Board NSW until 2012. The professional registration body will be notified of this proposal and accreditation for the Bachelor of Nursing (Advanced) course will be sought if required.

Admission

Students may apply for admission to the course through the Universities Admission Centre (UAC) or as a Year 1 Bachelor of Nursing student with GPA > 5.5.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC).
UAC

International applicants must apply directly to the University of Western Sydney via UWS International.
UWS International

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Details of minimum English proficiency requirements and acceptable proof can be found on the Universities Admissions Centre website (UAC).
UAC

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and UWS.

Course Structure

Qualification for this award requires the successful completion of 240 credit points including the units listed in the recommended sequence below.

Recommended Sequence

Year 1

Autumn session

400745.2	Nursing for Health and Wellbeing
400746.2	Understanding Good Health
400747.2	Behavioural Foundations of Nursing Practice
400748.2	Becoming a Nurse

Spring session

400749.2	Nursing and Health Breakdown
400750.2	Introduction to Health Breakdown
400751.2	Nursing and Healthy Communities
400752.2	Knowing Nursing

Year 2

Autumn session

400753.3	Medical-Surgical Nursing 1
400814.2	Alterations in Nutrition, Elimination and Sexuality
400824.2	Evidence-Based Nursing 1 (Advanced)
400854.2	Family Health Care:Health Issues and Australian Indigenous People (Advanced)

Spring session

400825.2	Medical Surgical Nursing 2 (Advanced)
400815.2	Alterations in Breathing, Work/Leisure and Mobility
400759.3	Mental Health Nursing 1
400760.2	Family Health Care: Child and Adolescent Nursing

Year 3

Autumn session

400761.2	Family Health Care: High Acuity Nursing
400762.2	Mental Health Nursing 2
400855.1	Family Health Care:Chronicity and Palliative Care Nursing (Advanced)

One elective

Spring session

400764.2	Transition to Graduate Practice
400827.2	Evidence-Based Nursing 2 (Advanced)
400767.2	Family Health Care: Older Adult Nursing
400849.1	Leadership in Graduate Practice (Advanced)

Bachelor of Nursing (Honours)

4529.2

This program is designed for graduates of the Bachelor of Nursing degree and other similar degrees. Successful completion of the program will provide students with a sound basis for subsequent research within their own work environments as well as enabling them to progress to higher researcher-related programs.

This program provides an opportunity for students, under guidance, to plan and implement a research project in the area of nursing practice. Knowledge and experience gained by students through completing this program will contribute to the knowledge base for nursing practice.

The program of study combines a research project with course work. The course work, undertaken during the first semester of enrolment, comprises two units of study. The remainder of the program is devoted to completion of a research project and the preparation of a thesis.

This program can be undertaken concurrently with any new graduate transitional program offered by various hospitals.

Study Mode
One year full-time or two years part-time.

Location

Campus	Attendance	Mode
Parramatta Campus	Full Time	Multi Modal
Parramatta Campus	Part Time	Multi Modal

Advanced Standing
Advanced Standing will be assessed in accordance with UWS policy.

Admission
The Bachelor of Nursing (Honours) degree is a second award as nursing students must satisfy the requirements for State registration as a Registered Nurse with a Bachelor's pass before proceeding into an Honours program.

Applicants must have obtained a Grade Point Average (GPA) of 5 (Credit level) or better throughout their Bachelor of Nursing course or a GPA of 5.75 or better in the final year of their Bachelor of Nursing (pass) degree. This criterion ensures that candidates are capable of achieving the high standards required for BN (Hons) studies. In addition, applicants must have completed at least 20 credit points of research or equivalent at an undergraduate level.

International applicants should contact UWS International for details on admission. Contact information for the International Office is available via the UWS website.

Special Requirements
To be enrolled in this course you must comply with the Occupational Screening and Vaccination Policy of NSW Health at course commencement.

Course Structure
Qualification for this award requires the successful completion of 80 credit points including the units listed in the recommended sequence below.

Recommended Sequence

Full-time

Year 1

Autumn session

400803.2	Research in Nursing Practice
400202.2	Nursing Honours Thesis A (Full-time)
400201.3	Readings and Methodology

Spring session

400203.2	Nursing Honours Thesis B (Full-time)

Part-time

Year 1

Autumn session

400803.2	Research in Nursing Practice

Spring session

400201.3	Readings and Methodology

2H session

400204.2	Nursing Honours Thesis (Part-time)

Year 2

1H session

400204.2	Nursing Honours Thesis (Part-time)

2H session

400204.2	Nursing Honours Thesis (Part-time)

Bachelor of Nursing Studies

4646.1

This course is designed to provide a bridging program for registered nurses from India who hold a Diploma of Nursing with an opportunity to convert their qualification to a Bachelors level. The program is 12 months in duration and has been developed to enhance and advance nursing skills and knowledge in the professional nursing domain. The course does not entitle the graduate to apply for registration as a Registered Nurse in Australia.

Study Mode
One year full-time.

Location

Campus	Attendance	Mode
Hawkesbury Campus	Full Time	Internal

Admission
Applicants must have completed a Diploma of Nursing and be registered with the India Nursing Council.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC).
UAC

International applicants must apply directly to the University of Western Sydney via UWS International.
UWS International

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Details of minimum English proficiency requirements and acceptable

proof can be found on the Universities Admissions Centre website (UAC).
UAC

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and UWS.

Course Structure

Qualification for this award requires the successful completion of 80 credit points including the units listed in the recommended sequence below.

Recommended Sequence

Spring Session

400816.2	Critical Thinking and Reflective Nursing Practice
400818.2	Leadership and Management in Graduate Practice
400820.2	Community Health and the Nurse

Choose one of

400823.2	Nursing and the Older Person
E1250.2	Drugs on Line
HC318A.1	Women's Health

Autumn Session

400817.2	Evidence Based Nursing Practice
400819.2	Child and Adolescent Nursing Studies
400821.2	Issues in Chronic and Palliative Nursing Care
400822.2	Contemporary Issues in Health and Nursing

Bachelor of Science

3640.1

Please contact the Head of Program for the Key Program your enquiry relates to. The 11 Key Programs available in the Bachelor of Science and the Head of Program details are listed below under "Key Programs".

A Bachelor of Science prepares students for a professional career in science. Fundamental to this degree are the skills necessary for quantification and analysis, the capacity for critical analysis, problem solving, and independent thinking. Students may choose one of the available Key Programs, or they may elect to take a Bachelor of Science without a Key Program. Units from a range of scientific and other disciplines may be combined to suit a student's interests and educational aims. Students complete a core of basic science units, to which other science units and, if desired, non-science electives can be added.

Study Mode

Three years full-time. Students may study at a reduced load.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Hawkesbury Campus	Full Time	Internal
Parramatta Campus	Full Time	Internal

Accreditation

The Royal Australian Chemical Institute will be contacted to confirm whether accreditation can be extended to the new Bachelor of Science (Chemistry) and Bachelor of Science (Nanotechnology).

Admission

Applications are via UAC.

International applicants should contact UWS International for information on admission.
Click here for the UWS International Office website

The following sets of Assumed Knowledge and Recommended Studies apply:

Agricultural Science - Assumed knowledge: Any two units of English and any two units of science. Recommended studies: One or more of Biology, Chemistry or Agriculture.

Animal Science- Assumed knowledge: Any two units of English and any two units of science. Recommended studies: One or more of Biology, Chemistry or Agriculture.

Biological Science - Recommended studies: Mathematics and Chemistry.

Biotechnology - Recommended studies: Chemistry.

Chemistry - Recommended studies: Chemistry.

Environmental Science - Assumed knowledge: Any two units of English and any two units of science (Biology or Chemistry recommended). Recommended studies: Geography.

Food Science - Recommended studies: Biology, Chemistry and Mathematics.

Mathematical Science- Recommended studies: Mathematics.

Nanotechnology - Recommended studies: Mathematics and Chemistry.

Nutrition and Food - Assumed knowledge: Mathematics and Biology. Recommended studies: Chemistry and Food Technology.

Plant Science- Assumed knowledge: At least two of Biology, Chemistry and Mathematics.

Science (No Key Program) - Assumed knowledge: At least two of Biology, Chemistry, Mathematics, Physics.

Special Requirements

Students who do not satisfy the Assumed Knowledge for the Level 1 unit in mathematics, statistics or biometry will be advised to complete unit 300691 - Mathematical Reasoning as one of their electives, as preparation for this core requirement of the degree.

Course Structure

Qualification for this award requires the successful completion of 240 credit points with no more than 100 credit points at Level 1, including electives. 60 credit points must be at Level 3 or above, of which 40 must be science-based units, including a Capstone Unit which draws the overall academic program together. The degree must include six core units from the Bachelor of Science Unit Pool (shown below), including one Level 1 unit in mathematics, statistics or biometry, plus at least one Level

1 unit from two of the following discipline areas: Biology, Chemistry, Computer Science, Geoscience and Physics.

Key Program in Agricultural Science

KT3015.1 Agricultural Science

This key program equips graduates with specialised knowledge and understanding of agronomy, animal science and soil science underpinned by a sound background in biology, chemistry and biometry. Graduates will understand how agriculture impacts on the structure and function of production ecosystems in the context of nutrient, water and energy flows, carbon sequestration and use of introduced and genetically modified organisms. There is an emphasis on developing field and laboratory skills related to the major study areas that will prepare students for technical, production, research or advisory careers.

Key Program in Animal Science

KT3016.1 Animal Science

This key program recognises the increased demand for knowledge of how to best care for and protect our animals, including scientific knowledge of companion animals, production animals and their products, as well as knowledge related to our native animals.

Key Program in Biological Science

KT3017.1 Biological Science

This key program focuses on the areas of biology that are most relevant to industry and research: biochemistry, microbiology and molecular biology. Other areas of study include anatomy and physiology, environmental science, biotechnology, human biology and plant biology.

Key Program in Biotechnology

KT3018.1 Biotechnology

This key program harnesses microbial, plant and animal cells to produce useful goods and services, including food, drink, medicines and chemicals. Biotechnology also plays an important role in dealing with waste materials, the removal of pollutants from the environment, and microbial control of plants, pests and diseases.

Key Program in Chemistry

KT3019.1 Chemistry

This key program consists of core studies in analytical, inorganic, organic and physical chemistry. A major in geochemistry will prepare you for a career in the minerals and mining industries. A sub-major in biochemistry or microbiology will prepare you for a career in the pharmaceutical, health or food industries.

Key Program in Environmental Science

KT3020.1 Environmental Science

This key program provides a strong background in key analytical techniques that have contemporary applications such as the handling and interpretation of data and the modelling of real world problems such as global warming.

Key Program in Food Science

KT3021.1 Food Science

This key program recognises that the manufacture of food is vital to Australia in terms of investment, export income and jobs growth. Within this framework there is a strong demand for practical food scientists who have skills in chemistry and microbiology and who can apply this knowledge to food processing, ensuring a safe, nutritious and appetising food supply.

Key Program in Mathematical Science

KT3022.1 Mathematical Science

Specialise in mathematics, statistics or a combination of both. You'll develop skills that allow you to model and solve real world problems using mathematical techniques. Minor studies can be completed in science related areas such as computer science and the physical sciences or in areas such as marketing, management, accounting, economics and finance, arts, humanities and social sciences.

Key Program in Nanotechnology

KT3023.1 Nanotechnology

This key program prepares you for a cutting-edge career, giving you the opportunity to revolutionise medicine, industry, electronics, defence, aerospace, communications, law enforcement, energy production and environmental sustainability. It combines real-life nanotechnology innovations, advanced theory in virtually all the sciences, and the opportunity to specialise in Nanophysics, Nanochemistry, Nanobiology, Materials Science or Nanoengineering.

Key Program in Nutrition and Food

KT3024.1 Nutrition and Food

Healthy eating is a vital part of good health. Nutrition and Food covers a range of subjects from the nutritional benefits of particular foods to food safety and medical conditions affected by diet, such as diabetes and heart disease.

Key Program in Plant Science

KT3025.1 Plant Science

At UWS, Plant Science includes how plants grow, what they need for growth, how they respond to their environment, how they evolved, and more.

Science (no Key Program)

KP3000.1 Science (No Key Program)

Intended for students who do not wish to specialise in a single key area of study, but who want a versatile and flexible course of study in science, this program includes a core of basic science units including biology, chemistry, mathematics and physics. You can then add units from a range of scientific and other disciplines to suit your interests and career aspirations.

Year 1 - Autumn Session
Three Level 1 units from the Bachelor of Science Unit Pool
And one elective

Year 1 - Spring session
Three Level 1 units from the Bachelor of Science Unit Pool
And one elective

Year 2 - Autumn Session
Three Level 2 units from the Bachelor of Science Unit Pool
And one elective

Year 2 - Spring session
Three Level 2 units from the Bachelor of Science Unit Pool
And one elective

Year 3 - Autumn Session
Two Level 3 units from the Bachelor of Science Unit Pool
And one Level 3 elective
And one elective

Year 3 - Spring session
Two Level 3 units from the Bachelor of Science Unit Pool
And one Level 3 elective
And one elective

Majors

M3016.1	Animal Science
M3011.1	Biochemistry and Molecular Biology
M3018.1	Biotechnology
M3019.1	Chemistry
M3023.1	Computational Decision Making
M3012.1	Conservation Biology
M3020.1	Geochemistry
M3013.1	General Biology
M3024.1	Knowledge Discovery and Data Mining
M3021.1	Mathematics
M3014.1	Microbiology
M3017.1	Nutrition and Physiology
M3015.1	Plant Science
M3022.1	Statistics

Sub-majors

SM3020.1	Animal Science
SM3016.1	Biochemistry and Molecular Biology
SM3027.1	Computational Decision Making
SM3017.1	Conservation Biology
SM3023.1	Environmental Chemistry
SM3024.1	Forensic Chemistry
SM3022.1	Geochemistry
SM3011.1	Entertainment Computing
SM3010.1	Health Information Applications
SM3009.1	Health Information Management
SM3028.1	Knowledge Discovery and Data Mining
SM3025.1	Mathematics
SM3018.1	Microbiology
SM3008.1	Networking
SM3021.1	Nutrition and Physiology
SM3019.1	Plant Science
SM3026.1	Statistics
SM3007.1	Web Application Development (for Non-Computing Students)

Bachelor of Science Unit Pool

Level 1

Biology Core Units
Choose one of:

300221.1	Biology 1
300543.1	Cell Biology

Choose one of:

300222.1	Biology 2
300539.1	Biodiversity

Chemistry Core Units
Choose one of:

300224.2	Chemistry 1
300554.1	Principles of Chemistry
300469.1	Introductory Chemistry

Choose one of:

300225.2	Chemistry 2
300550.1	Medicinal Chemistry

Computing and Information Technology Core Units

300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals

Geoscience Core Units

300232.1	Introduction to Earth Sciences
300613.1	Introductory Geochemistry: Earth, Resources and Environments

Mathematics and Statistics Core Units

200025.1	Discrete Mathematics
200191.3	Fundamentals of Mathematics
300672.1	Mathematics 1A
300673.1	Mathematics 1B

Choose one of:

200263.1	Biometry
200192.1	Statistics for Science
200032.2	Statistics for Business

Physics Core Units

300558.1	Physics 1
300559.1	Physics 2

Professional Skills Core Unit

300497.1	Professional Skills for Science

Professional Skills Alternate Unit

300661.1	Integrated Science 1

Level 2

Biology Core Units

300321.1 Microbiology 2

Choose one of:

300219.1 Biochemistry 1
300555.1 Proteins and Genes

Choose one of:

300220.1 Biochemistry 2
300548.1 Human Metabolism and Disease

Choose one of:

300300.1 Microbiology 1
300331.2 General Microbiology

Biology Alternate Units

300608.1 Animal Physiology
300328.1 Botany
300634.1 Ecology
300658.1 Endocrinology and Metabolism
300333.1 Introductory Plant Physiology
300323.1 Pathological Basis of Disease
300609.1 Plant Physiology
300646.1 Principles of Biotechnology

Choose one of:

300623.1 Genetics
300547.1 Human Genetics

Chemistry Core Units

300297.1 Analytical Chemistry 2

Choose one of:

300230.1 Inorganic Chemistry 2
300545.1 Coordination Chemistry

Choose one of:

300301.1 Organic Chemistry 2
300553.1 Molecules of Life: Synthesis and Reactivity

Choose one of:

300236.1 Physical Chemistry 2
300540.1 Biomolecular Dynamics

Chemistry Alternate Units

300493.1 Forensic and Environmental Analysis

Geoscience Alternate Units

300611.1 Chemical Mineralogy
300612.1 Geochemical Systems

Mathematics and Statistics Core Units

200028.2 Advanced Calculus
200033.2 Applied Statistics
200030.1 Differential Equations
300606.1 Foundations of Statistical Modelling and Decision Making
200042.2 Introduction to Operations Research
200027.1 Linear Algebra
200029.1 Numerical Analysis

Level 3

Biology Alternate Units

300556.1 Analytical Protein Science
300307.1 Analytical Microbiology
300427.1 Animal Production
300327.1 Australian Plants
300465.1 Aquatic Ecology
300542.1 Biomolecular Science Project
300610.1 Biotechnology
300644.1 Biophysics
300544.1 Cell Signalling
300617.1 Conservation Biology
300607.1 Environmental Biology
300647.1 Environmental Biotechnology
300504.1 Fermentation Science
300648.1 Food and Pharmaceutical Biotechnology
300656.1 Laboratory Quality Management
300552.1 Molecular Biology of the Immune System
300229.1 Immunology
300408.1 Mammalian Cell Biology and Biotechnology
300407.1 Mammalian Molecular Medicine
300233.1 Medical Microbiology
300621.1 Plant Biotechnology
300615.1 Science Research Project 1
300645.1 Science Research Project 2
300470.1 Vertebrate Biodiversity

Choose one of:

300234.1 Molecular Biology
300549.1 Human Molecular Biology

Chemistry Alternate Units

300218.1 Applied Aspects of Inorganic Chemistry
300542.1 Biomolecular Science Project
300557.1 Molecular Spectroscopy
300615.1 Science Research Project 1
300645.1 Science Research Project 2

Choose one of:

300298.1 Analytical Chemistry 3
300537.1 Advanced Chemical Analysis

Choose one of:

300231.1 Inorganic Chemistry 3
300538.1 Advanced Inorganic Chemistry

Choose one of:

300235.1 Organic Chemistry 3
300546.1 Drug Design and Synthesis

Choose one of:

300303.1 Physical Chemistry 3
300475.1 Molecular Pharmacokinetics

Geoscience Alternate Units

300614.1	Environmental Geochemistry

Mathematics and Statistics Alternate Units

200193.1	Abstract Algebra
200023.1	Analysis
200036.2	Data Mining and Visualisation
200024.1	Mathematical Finance
200022.1	Mathematical Modelling
300670.1	Optimisation Techniques
300671.1	Principles and Practice of Decision Making
200040.1	Probability & Stochastic Processes
200045.1	Quantitative Project
200037.1	Regression Analysis & Experimental Design
200044.1	Simulation Techniques
200039.1	Surveys and Multivariate Analysis
200038.1	Time Series and Forecasting

Bachelor of Science Capstone Units

300530.1	Advances in Agronomy
300427.1	Animal Production
300542.1	Biomolecular Science Project
300610.1	Biotechnology
300617.1	Conservation Biology
300648.1	Food and Pharmaceutical Biotechnology
300637.1	Food Product Development Practicum
300656.1	Laboratory Quality Management
300643.1	Plant Protection
200045.1	Quantitative Project
300615.1	Science Research Project 1
300645.1	Science Research Project 2

Bachelor of Science - Pathway to Teaching (Secondary)

3638.1

The consecutive combination of an undergraduate Bachelor of Science degree and a postgraduate Masters qualification gives you direct access to a teaching career in four years with improved prospects for career advancement. The first three years of study in the Bachelor of Science - Pathway to Teaching (Secondary) will allow you to focus on a general science program of your choice and to structure your units of study to gain the necessary learning areas to satisfy the NSW Institute of Teachers discipline knowledge requirements for entry into teaching.

The degree also gives the advantage of early access to Education Studies units through mandatory completion of 40 credit points from the Education Studies major offered on both the Penrith and Bankstown campuses. The Education units are taken as part of the elective strand in the Bachelor of Science. You will need to take advice to ensure that your program of study meets these requirements during your Bachelor of Science degree by consulting your Head of Program and the Institute of Teachers document, Subject Content Requirements for Teaching in a NSW Primary or Secondary School. Institute of Teachers document, Subject Content Requirements for Teaching in a NSW Primary or Secondary School

The fourth year of study in the Master of Teaching will concentrate on the skills and knowledge needed to translate your disciplinary expertise to a classroom setting. Initial enrolment in this combined program will be enrolment into the Bachelor of Science - Pathway to Teaching (Secondary).

Graduates of this degree who complete the requisite units to meet the requirements of the Institute will receive guaranteed entry to M Teaching.

Students can select a Key Program in Biological Science, Biotechnology, Chemistry or Mathematical Science, or choose a more flexible program within the degree rules, including a Major that is related to a Secondary Teaching discipline. Students may combine their Key Program or Science Studies (no Key Program) with one or more Majors or Sub-majors, as offered in course 3640 Bachelor of Science. A range of elective units in the Earth and Environmental Sciences is also available, depending on the campus of study.

As well as being equipped with all the necessary elements for initial teacher training, a Bachelor of Science - Pathway to Teaching (Secondary) prepares students for a professional career in science. Fundamental to this degree are the skills necessary for quantification and analysis, the capacity for critical analysis, problem solving and independent thinking. Graduates will be prepared for a very wide range of employment opportunities in the sciences and related disciplines. Bachelor of Science graduates find employment in industry, research, forensics, patents, quality control, environmental analysis, scientific instrumentation, medical laboratories and technical management.

Students who complete a specified Key Program will be eligible for the title of the Key Program to appear on their Testamur and will graduate with Bachelor of Science (Key Program Title), as follows:

- Bachelor of Science (Biological Science)
- Bachelor of Science (Biotechnology)
- Bachelor of Science (Chemistry)
- Bachelor of Science (Mathematical Science)

Students who elect to complete the degree without selecting a specific Key Program will not be eligible for a Key Program title to appear on their testamur, and will graduate with the generic course title Bachelor of Science.

Study Mode

Three years full-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Hawkesbury Campus	Full Time	Internal
Parramatta Campus	Full Time	Internal

Accreditation

B Science (Biological Science) - Depending on the units chosen within the course, graduates can satisfy the requirements for membership of professional bodies such as the Australian Society for Microbiology and the

Australian Institute of Biology. Graduates may also join other professional societies such as the Australian Biotechnology Organisation, Australian Society for Medical Research and the Royal Zoological Society. Bachelor of Science (Biotechnology) Graduates satisfy the requirements for membership of the Australian Society for Microbiology and the Australian Biotechnology Association. Bachelor of Science (Chemistry) Continued accreditation is being sought from the Royal Australian Chemical Institute. Bachelor of Science (Mathematical Science) Graduates may be eligible for membership of the Australian Mathematical Society and the Statistical Society of Australia depending on the units studied.

Admission

Local students will normally be admitted through UAC.

Assumed knowledge: At least two of Biology, Chemistry, Mathematics and Physics.

Course Structure

Students may combine their studies with one or more Majors or Sub-majors from science or non-science disciplines.

To be eligible to graduate from the course, students must:

- obtain an aggregate of 240 credit points with no more than 100 credit points at Level 1, including electives.
- complete 60 credit points at Level 3 or above, of which 40 credit points must be science-based units, including a Capstone Unit that will draw the overall academic program together.
- include at least six core units from the Bachelor of Science Unit Pool (shown below), including one Level 1 unit in mathematics, statistics or biometry, plus at least one Level 1 unit from two out of the following discipline areas: Biology, Chemistry, Computer Science, Geoscience and Physics.
- satisfy the Assumed Knowledge for the Level 1 unit in mathematics, statistics or biometry.
- students who do not satisfy the Assumed Knowledge for the Level 1 unit in mathematics, statistics or biometry. will be recommended to complete 300601 Mathematical Reasoning as one of their electives, as preparation for this core requirement of the degree.
- complete 300497 Professional Skills for Science (available in both internal and external modes) or an equivalent academic skilling unit as recommended by the Head of Program.
- complete mandatory Education Studies within their elective stream, comprising any 40 credit points from the units within the Education Studies Major pool.

M1112.1 Education Studies

Each Key Program consists of 160-180 credit points of specified units or alternates, satisfying the core requirements for the degree, plus 60-80 credit points of electives, to a total of 240 credit points. At least 40 credit points at Level 3 will be specified within the Key Program. At least one of these will be a Capstone Unit.

Key Program in Biological Science

KT3017.1 Biological Science

To satisfy the requirements for Secondary Biotechnology teaching, students should take two units from one of the following unit combinations as their Level 1 Bachelor of Science Unit Pool units, or as elective units.

Choose one from:

300224.2 Chemistry 1
300554.1 Principles of Chemistry

And one from:

300225.2 Chemistry 2
300550.1 Medicinal Chemistry

Or select the following two units:

300558.1 Physics 1
300559.1 Physics 2

Key Program in Biotechnology

KT3018.1 Biotechnology

To satisfy the requirements for Secondary Biotechnology teaching, students should take at least two of the following units as electives.

Level 2

300328.1 Botany
300634.1 Ecology
300333.1 Introductory Plant Physiology

Level 3

300327.1 Australian Plants
300465.1 Aquatic Ecology
300617.1 Conservation Biology
300470.1 Vertebrate Biodiversity

Key Program in Chemistry

KT3019.1 Chemistry

To satisfy the requirements for Secondary Chemistry teaching, students should take two units from one of the following unit combinations as their Level 1 Bachelor of Science Unit Pool units, or as elective units.

Choose one unit from:

300221.1 Biology 1
300543.1 Cell Biology

And one unit from:

300222.1 Biology 2
300539.1 Biodiversity

Or select the following two units:

300558.1 Physics 1
300559.1 Physics 2

Key Program in Mathematical Science

KT3022.1 Mathematical Science

Majors

Additional majors are also available from course 3640 Bachelor of Science.

M3019.1	Chemistry
M3013.1	General Biology
M3021.1	Mathematics

Course Structure - no Key Program

Students with no Key Program must satisfy the mandatory requirements of the course which include, completing at least 160 credit points from the Bachelor of Science Unit Pool (shown below), completing one of the available Majors listed in the course structure and completing the mandatory Education Studies.

Full-time

Year 1 - Autumn Session

Three Level 1 units from the Bachelor of Science Unit Pool
And one elective

Year 1 - Spring session

Three Level 1 units from the Bachelor of Science Unit Pool
And one elective

Year 2 - Autumn session

Three Level 2 units from the Bachelor of Science Unit Pool
And one elective

Year 2 - Spring session

Three Level 2 units from the Bachelor of Science Unit Pool
And one elective

Year 3 - Autumn session

Three Level 3 units from the Bachelor of Science Unit Pool
And one elective

Year 3 - Spring session

Three Level 3 units from the Bachelor of Science Unit Pool
And one elective

Bachelor of Science Unit Pool

Level 1

Biology Core Units

Choose one from the following two units:

300221.1	Biology 1
300543.1	Cell Biology

Choose one from the following two units:

300222.1	Biology 2
300539.1	Biodiversity

Chemistry Core Units

Choose one from the following three units:

300224.2	Chemistry 1
300554.1	Principles of Chemistry
300469.1	Introductory Chemistry

Choose one from the following two units:

300225.2	Chemistry 2
300550.1	Medicinal Chemistry

Computing and Information Technology Core Units

300134.1	Introduction to Information Technology
300580.1	Programming Fundamentals

Geoscience Core Units

300232.1	Introduction to Earth Sciences
300613.1	Introductory Geochemistry: Earth, Resources and Environments

Mathematics and Statistics Core Units

200025.1	Discrete Mathematics
200191.3	Fundamentals of Mathematics
300672.1	Mathematics 1A
300673.1	Mathematics 1B
200042.2	Introduction to Operations Research

Choose one from the following three units:

200263.1	Biometry
200192.1	Statistics for Science
200032.2	Statistics for Business

Physics Core Units

300558.1	Physics 1
300559.1	Physics 2

Professional Skills Core Unit

300497.1	Professional Skills for Science

Professional Skills Alternate Unit

300661.1	Integrated Science 1

Level 2

Biology Core Units

300321.1	Microbiology 2

Choose one of the following two units:

300219.1	Biochemistry 1
300555.1	Proteins and Genes

Choose one from the following two units:

300220.1	Biochemistry 2
300548.1	Human Metabolism and Disease

Choose one from the following two units:

300300.1	Microbiology 1
300331.2	General Microbiology

Biology Alternate Units

300608.1	Animal Physiology
300328.1	Botany
300634.1	Ecology

300658.1 Endocrinology and Metabolism
300333.1 Introductory Plant Physiology
300323.1 Pathological Basis of Disease
300609.1 Plant Physiology
300646.1 Principles of Biotechnology

Choose one from the following units:

300227.1 General Biochemistry
300623.1 Genetics
300547.1 Human Genetics

Chemistry Core Units

300297.1 Analytical Chemistry 2

Choose one from the following units:

300230.1 Inorganic Chemistry 2
300545.1 Coordination Chemistry

Choose one from the following units:

300301.1 Organic Chemistry 2
300553.1 Molecules of Life: Synthesis and Reactivity

Choose one from the following units:

300236.1 Physical Chemistry 2
300540.1 Biomolecular Dynamics

Chemistry Alternate Units

300493.1 Forensic and Environmental Analysis

Geoscience Alternate Units

300611.1 Chemical Mineralogy
300612.1 Geochemical Systems

Mathematics and Statistics Core Units

200028.2 Advanced Calculus
200033.2 Applied Statistics
200030.1 Differential Equations
300606.1 Foundations of Statistical Modelling and Decision Making
200042.2 Introduction to Operations Research
200027.1 Linear Algebra
200029.1 Numerical Analysis

Level 3

Biology Alternate Units

300556.1 Analytical Protein Science
300307.1 Analytical Microbiology
300427.1 Animal Production
300327.1 Australian Plants
300465.1 Aquatic Ecology
300542.1 Biomolecular Science Project
300610.1 Biotechnology
300644.1 Biophysics
300544.1 Cell Signalling
300617.1 Conservation Biology
300607.1 Environmental Biology
300647.1 Environmental Biotechnology
300504.1 Fermentation Science
300648.1 Food and Pharmaceutical Biotechnology
300656.1 Laboratory Quality Management
300552.1 Molecular Biology of the Immune System
300229.1 Immunology
300408.1 Mammalian Cell Biology and Biotechnology
300407.1 Mammalian Molecular Medicine
300749.1 Medical Microbiology
300621.1 Plant Biotechnology
300615.1 Science Research Project 1
300645.1 Science Research Project 2
300470.1 Vertebrate Biodiversity

Choose one from the following units:

300234.1 Molecular Biology
300549.1 Human Molecular Biology

Chemistry Alternate Units

300218.1 Applied Aspects of Inorganic Chemistry
300542.1 Biomolecular Science Project
300557.1 Molecular Spectroscopy
300615.1 Science Research Project 1
300645.1 Science Research Project 2

Choose one from the following two units:

300298.1 Analytical Chemistry 3
300537.1 Advanced Chemical Analysis

Choose one from the following two units:

300231.1 Inorganic Chemistry 3
300538.1 Advanced Inorganic Chemistry

Choose one from the following two units:

300235.1 Organic Chemistry 3
300546.1 Drug Design and Synthesis

Choose one from the following two units:

300303.1 Physical Chemistry 3
300475.1 Molecular Pharmacokinetics

Geoscience Alternate Units

300614.1 Environmental Geochemistry

Mathematics and Statistics Alternate Units

200193.1 Abstract Algebra
200023.1 Analysis
200036.2 Data Mining and Visualisation
200024.1 Mathematical Finance
200022.1 Mathematical Modelling
300670.1 Optimisation Techniques
300671.1 Principles and Practice of Decision Making
200040.1 Probability & Stochastic Processes
200045.1 Quantitative Project
200037.1 Regression Analysis & Experimental Design
200044.1 Simulation Techniques
200039.1 Surveys and Multivariate Analysis
200038.1 Time Series and Forecasting

Bachelor of Science Capstone Units

300530.1 Advances in Agronomy
300427.1 Animal Production
300542.1 Biomolecular Science Project
300610.1 Biotechnology

300617.1 Conservation Biology
300648.1 Food and Pharmaceutical Biotechnology
300637.1 Food Product Development Practicum
300656.1 Laboratory Quality Management
300643.1 Plant Protection
200045.1 Quantitative Project
300615.1 Science Research Project 1
300645.1 Science Research Project 2

Bachelor of Science (Advanced Science)

3562.3

This degree equips students with both specialised knowledge and understanding in any one of agricultural science, anatomy and physiology, animal science, biochemistry and human biology, biomedical science, biotechnology, chemistry, environmental science, food science, forensic science, general biology, general science, human biology, human bioscience, human molecular biology, mathematics, medicinal chemistry, microbiology, nanotechnology, nutrition and food, operations research, pharmaceutical chemistry, plant biology and statistics AND the skills to apply this in the research context.

Students in the Bachelor of Science (Advanced Science) may follow any of the study programs - including key programs and majors - set out for the following four courses: 3640 Bachelor of Science, 3589 Bachelor of Science (Forensic Science), 3577 Bachelor of Medical Science, and 3632 Bachelor of Biomolecular Science.
3640 Bachelor of Science
3589 Bachelor of Science (Forensic Science)
3577 Bachelor of Medical Science
3632 Bachelor of Biomolecular Science

This degree is specially designed to provide the initial training for a range of scientific careers involving research and to facilitate the transition to an Honours year, on top of the employment areas available to graduates from the standard science programs in these areas.

Admission

Minimum 90 UAI with assumed knowledge of HSC mathematics and at least two of biology, chemistry and/or physics. Students must maintain a GPA of 5.0 or above to continue their enrolment in the course. As part of the admission/enrolment process students will be required to sign a statement acknowledging that they understand that a minimum 5.0 GPA is required to remain in the program and that if this GPA is not maintain that they will be automatically transferred into the standard program. Students in other UWS science courses who achieve a GPA of 5.0 or greater at the end of their first year of study may be admitted into the Advanced Science program if sufficient places are available.

Course Structure

Students enrolled in Bachelor of Science (Advanced Science) must complete the following units in conjunction with the requirements of the key program they are undertaking. These units replace three elective units in the key program:

300591.1 Advanced Science Research Project A
300592.1 Advanced Science Research Project B
300593.1 Advanced Science Research Project C

In addition, students must complete the appropriate timetabled project in their discipline in their final semester.

Bachelor of Science (Forensic Science)

3589.2

This is a three year program that produces scientists who have a good background in the biological and chemical sciences, coupled with specialised expertise in forensic science, including methods of forensic analysis, crime scene investigation, forensic photography, finger printing, forensic materials/drug investigations, crime and criminal justice and complex case studies on terrorism, corporate crime, computer crime, money laundering and people smuggling. Students may specialise in forensic biology, chemistry or microbiology or combine the core units with additional forensic electives or studies in a related or unrelated discipline. Career opportunities include forensic scientists, crime scene investigators, private investigators and consultants, quality controllers, drug analysts, researchers and academics, document and fingerprint investigators. The main employers of forensic scientists are State and Federal police services, State and Commonwealth Government Health Departments and analytical chemical laboratories. Graduates will be versatile with a wide skills base with (depending on their choice of electives) potential for employment in analytical chemistry and microbiology, quality control and assurance, biochemistry and molecular biology, scientific research, education and the chemical industry.

Study Mode

Three years full-time.

Location

Campus	Attendance	Mode
Hawkesbury Campus	Full Time	Internal

Admission

There is no specific prerequisite for entry into the course. Preferably, students should have successfully completed the HSC at the 2U level or better in at least two of the following units: Biology, Chemistry or Mathematics.

Applications from Australian and New Zealand citizens and holders of permanent resident visas must be made via the Universities Admissions Centre (UAC).
UAC

International applicants must apply directly to the University of Western Sydney via UWS International.
UWS International

Applicants who have undertaken studies overseas may have to provide proof of proficiency in English. Details of minimum English proficiency requirements and acceptable proof can be found on the Universities Admissions Centre website (UAC).
UAC

Overseas qualifications must be deemed by the Australian Education International - National Office of Overseas Skills Recognition (AEI-NOOSR) to be equivalent to Australian qualifications in order to be considered by UAC and UWS.

Course Structure

Qualification for this award requires the successful completion of 240 credit points as per the recommended sequence below.

Students need to obtain an aggregate of at least 240 credit points, with no more than 100 credit points at Level 1. In addition, 60 credit points must be at Level 3 or above.

Recommended Sequence

Full-time

Year 1

Autumn session

300221.1 Biology 1
300224.2 Chemistry 1
300375.1 Digital Forensic Photography 1

And one elective

Spring session

300222.1 Biology 2
300225.2 Chemistry 2
300654.1 Forensic Science
200263.1 Biometry

Year 2

Autumn session

300219.1 Biochemistry 1
300493.1 Forensic and Environmental Analysis

Choose one of

400680.1 Crime and Criminal Justice
400681.2 Crime and Criminology

And one elective

Spring session

300374.1 Crime Scene Investigation
300377.1 Forensic Analysis of Physical Evidence

Choose one of

300376.1 Digital Forensic Photography 2
300535.1 Soils

And one elective

Year 3

Autumn session

300234.1 Molecular Biology
300494.1 Forensic Chemistry

Choose one of

300378.1 Forensic Archaeology
300334.1 Invertebrate Biology

And one elective

Spring session

300373.1 Complex Forensic Case Studies
300627.1 Toxicology

And two electives

Note: Where an alternate unit option is available in the recommended course sequence, but a unit is not on offer in the same session, please contact the Course Advisor or Head of Program for advice.

Bachelor of Science (Honours)

3611.1

The Honours program encourages independent learning and research, further develops academic ability, provides the opportunity to pursue undergraduate studies to a more advanced level, deepens intellectual understanding in the major field of study and develops research skills. An Honours degree is a recognised point of entry for postgraduate research studies at PhD level and enhances a graduate's ability to perform at a high level in a commercial or public organisation. The Honours program consists of a rigorous program of supervised research on a scientific topic, culminating in the production of a thesis and presentation of a final seminar. Students enrol in a 60 credit point honours project and either a 20 credit point research methodology and experimental design unit, or a 20 credit point advanced topics and research skills unit, allowing them to explore more advanced topics, including wider areas of research and their applications in science, technology, medicine and the environment. Although the Honours course is available on several different campuses, some or all of the lectures, workshops and seminars may be held centrally at a single campus to ensure that students are exposed to as wide a range of research topics as possible. The course can provide opportunities for direct commercial and industrial involvement with a diverse range of organisations through the provision of, and joint supervision of, research projects.

Study Mode

One year full-time or two years part-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Campbelltown Campus	Part Time	Internal
Hawkesbury Campus	Full Time	Internal
Hawkesbury Campus	Part Time	Internal
Parramatta Campus	Full Time	Internal
Parramatta Campus	Part Time	Internal
Penrith Campus	Full Time	Internal
Penrith Campus	Part Time	Internal

Course Structure

Recommended Sequence

Qualification for this award requires the successful completion of 80 credit points as per the recommended sequence below.

Full-time

Year 1

Autumn session

300412.2	Science, Technology and Environment Honours Project
300410.2	Advanced Topics and Research Skills

Spring session

300412.2	Science, Technology and Environment Honours Project
300410.2	Advanced Topics and Research Skills

Part-time

Year 1

Autumn session

300410.2	Advanced Topics and Research Skills

Spring session

300410.2	Advanced Topics and Research Skills

Year 2

Autumn session

300412.2	Science, Technology and Environment Honours Project

Spring session

300412.2	Science, Technology and Environment Honours Project

Bachelor of Science (Honours) Mathematics

2711.1

The honours program encourages independence in learning and research, further develops academic ability, provides the opportunity to pursue undergraduate studies to a more advanced level, deepen intellectual understanding in the major field of study and develop research skills. An Honours degree is a recognised point of entry into postgraduate research studies at PhD level. If a career in industry is sought, Honours enables study to a more advanced level with a higher qualification. The course has the opportunity for direct commercial and industrial involvement with a diverse range of organisations through the provision of and joint supervision of research projects.

Study Mode

One year full-time or two years part-time.

Location

Campus	Attendance	Mode
Campbelltown Campus	Full Time	Internal
Campbelltown Campus	Part Time	Internal
Parramatta Campus	Full Time	Internal
Parramatta Campus	Part Time	Internal

Admission

Admission requirements follow the recommendations and guidelines in the UWS Honours Policy. The basic requirement is completion of a bachelors pass degree in which the advanced level units in a relevant field of study were completed at a grade point average of 5.0 or better.

Course Structure

Qualification for this award requires the successful completion of 80 credit points which includes three core units made up of an advanced topic unit in mathematics, a research proposal and seminar plus a thesis in mathematics.

Core Units

200411.1	Advanced Topics in Mathematics
200412.3	Research Proposal and Seminar
200413.2	Mathematics Honours Thesis

Diploma in Engineering

7006.1

This course is delivered by UWSCollege as an agent of the University of Western Sydney.

The Diploma in Engineering is designed to provide prepare students for tertiary study in Engineering and in doing so address any perceived deficiencies in the students' mathematical and physics knowledge and skills. The Diploma presents students with subjects from the first year of subjects in the Bachelor of Engineering Degree. The Diploma aims to produce students who are fully prepared for study beyond the first year of the Bachelor of Engineering degree. The Diploma in Engineering, completed in a smaller, more supportive learning environment than usually found in first year undergraduate programs, is designed to develop students to have greater ability in self-directed study and have the self esteem that comes from prior achievement in a tertiary environment.

For more information on UWSCollege, please refer to the UWSCollege web site.
UWSCollege

Location

Campus	Attendance	Mode
Blacktown Campus	Full Time	Internal
	Full Time	Internal

Admission

The aim of the Diploma is to prepare students for tertiary study in Engineering. The Diploma is accredited by the University, as principal, to enable its agent, UWSCollege, to offer to its students who are fully prepared for study beyond the first year of a tertiary award.

1. English Entry Requirements International students must satisfy one of the following language requirements:

- IELTS 6.0 with a minimum of 5.0 in all areas OR
- Completion of UWS College EAPIII course with a 50% pass OR
- A pass in the Foundation Academic English course OR
- A pass in the UWS College English Entrance test at IELTS 6.0 equivalent

2. Academic Entry Requirements vary according to country of origin. However, in general, completion of Year 12 or its equivalent is the minimum entry requirement OR to have passed the UWS College Foundation Certificate, offered by UWS College, with a Grade Point Average of 5.5 or higher. Students are also assumed to have completed study in mathematics at Senior High School Level or to have passed Foundation Level Mathematics at UWSCollege.

Local students entering this Diploma are:

1. Required to have completed an English course in the NSW Higher School Certificate, or to have competency in English at IELTS 6.0 with a minimum of 5.0 in all areas (unless a native speaker) or have completed the UWS College English test at IELTS 6.0 equivalent with a minimum of 5.0 in all areas; or to have passed the UWSCollege Foundation English Course.

2. Required to have met other entry requirements such as an ATAR identified prior to the offer of a place, or to have completed the UWS College Foundation Studies course, offered by UWS College, with a GPA of 5.5 or better and a pass in Foundation level Mathematics Extension.

3. Assumed to have background in mathematics at Senior High School level or to have passed Foundation Mathematics at UWSCollege and assumed background Science knowledge preferably in Physics.

Special Requirements

All students must complete Tertiary Study Skills with UWSCollege prior to completion of the diploma.

Course Structure

Qualification for this award requires the successful completion of the units listed in the recommended sequence below.

Students who have completed an HSC equivalent qualification with study in the relevant areas will be eligible for advanced standing for Mathematics C and Physics and therefore need to complete the remaining 8 units.

700025.1	Mathematics C (UWSCDip)
700026.1	Physics (UWSCDip)
700038.1	Engineering Design and Construction Practice (UWSC)
700019.1	Mathematics for Engineers 1 (UWSC)
700020.1	Physics and Materials (UWSC)
700018.1	Engineering Computing (UWSC)
700022.1	Mathematics for Engineers 2 (UWSC)
700023.1	Fundamentals of Mechanics (UWSC)
700024.1	Electrical Fundamentals (UWSC)
700021.1	Engineering and Design Concepts (UWSC)

Students also complete a mandatory special requirement unit, Tertiary Study Skills, although this does not count for credit towards the Diploma.

Diploma in Information and Communications Technology

7005.1

This course is delivered by UWSCollege as an agent of the University of Western Sydney.

The Diploma in Information and Communications Technology is designed to provide a generalist tertiary level foundation for further study in undergraduate Information and Communications Technology program. It has been constructed to provide students with a sample of ICT units and university experiences to allow for well informed choices to be made in selecting their professional focus.

The Diploma aims to produce students who are fully prepared for study beyond the first year of an undergraduate degree. The Diploma in Information and Communications Technology, completed in a smaller, more supportive learning environment than usually found in first year undergraduate programs, is designed to develop students who are more aware of their roles and responsibilities within a university, have greater ability in self-directed study and have the self esteem that comes from prior achievement in a tertiary environment.

For more information on UWSCollege, please refer to the UWSCollege web site.
UWSCollege

Location

Campus	Attendance	Mode
Blacktown Campus	Full Time	Internal
	Full Time	Internal

Accreditation

It is intended that accreditation will be sought from the Australian Computer Society.

Admission

The aim of the Diploma is to prepare students for tertiary study in Information and Communications Technology. The Diploma is accredited by the University, as principal, to enable its agent, UWSCollege, to offer to its students who are fully prepared for study beyond the first year of a tertiary award.

1. English Entry Requirements

Students who come from overseas must satisfy one of the following language requirements:

- IELTS 6.0 with a minimum of 5.0 in all areas
- Completion of UWSCollege EAPIII course with a 50% pass level.
- Pass in the Foundation Studies English course.

2. Academic Entry Requirements

Vary according to country of origin. However, in general, completion of Year 12 or its equivalent is the minimum entry requirement OR to have passed the Foundation Certificate, offered by UWSCollege, with a Grade Point Average of 5.5 or higher.

Students are also assumed to have completed a Mathematics course, equivalent to the Mathematics course in the NSW Higher School Certificate or to have passed Foundation Level Mathematics.

Local students entering this Diploma are required to have:

1. Required to have completed an English course in the NSW Higher School Certificate; or to have competency in English at IELTS 6.0 with a minimum of 5.0 in all areas (unless a native speaker); or have completed the UWS College English test at IELTS 6.0 equivalent with a minimum of 5.0 in all areas; or to have passed the UWSCollege Foundation English Course.

2 Met other entry requirements such as a ATAR identified prior to the offer of a place, or to have completed the UWSCollege Foundation Studies course, offered by UWSCollege, with a GPA of 5.5 or better and with a pass in Foundation Mathematics .

3. Assumed knowledge of Mathematics at the NSW Higher School Certificate or a pass in Foundation Mathematics.

Special Requirements

Students must complete Tertiary Study Skills with UWSCollege prior to completion of the diploma.

Course Structure

To be awarded a Diploma in Information and Communications Technology students will successfully complete with at least a pass (50% or more) the eight units listed below.

Students who wish to enter the Bachelor of Computing on completion of this Diploma course will, subject to student numbers, study 700007 Statistics for Business (UWSC). Students intending to enter the Bachelor of Information and Communications Technology will study 700041 Statistical Decision Making (UWSC).

All other units are compulsory core units of the course.

Choose one of:

700007.1	Statistics for Business (UWSC)
700041.1	Statistical Decision Making (UWSC)

Students must complete the following units:

700040.1	Principles of Professional Communication 1 (UWSC)
700008.1	Programming Fundamentals (UWSC)
700000.1	Information Systems in Context (UWSC)
700011.1	Database Design and Development (UWSC)
700012.1	Computer Networking (UWSC)
700013.1	System Analysis and Design (UWSC)
700039.1	Object Oriented Analysis (UWSC)

Students will also complete the following two units for which no advanced standing will be granted in the degree program:

700045.1	Statistics for Academic Purposes (UWSCFS)
700047.1	Programming Design (UWSCFS)

Students also complete a mandatory unit Tertiary Study Skills, although this does not count for credit towards the Diploma.

Diploma in Information and Communications Technology Fast Track

7004.1

This course is delivered by UWSCollege as an agent of the University of Western Sydney.

The Diploma in Information and Communications Technology is designed to provide a generalist tertiary level foundation for further study in undergraduate Information and Communications Technology and Computing programs. It has been constructed to provide students with a sample of computing units and university experiences to allow for well informed choices to be made in selecting their professional focus.

The Diploma aims to produce students who are fully prepared for study beyond the first year of an undergraduate degree. The Diploma in Information and Communications Technology, completed in a smaller, more supportive learning environment than usually found in first year undergraduate programs, is designed to develop students who are more aware of their roles and responsibilities within a university, have greater ability in self-directed study and have the self esteem that comes from prior achievement in a tertiary environment.

For more information on UWSCollege, please refer to the UWSCollege web site.
UWS College

Location

Campus	Attendance	Mode
Blacktown Campus	Full Time	Internal
	Full Time	Internal

Accreditation

It is intended that accreditation will be sought from the Australian Computer Society.

Admission

The aim of the Diploma is to prepare students for tertiary study in Information and Communications Technology or Computing. The Diploma is accredited by the University, as principal, to enable its agent, UWSCollege, to offer to its students who are fully prepared for study beyond the first year of a tertiary award.

1. English Entry Requirements:

Students who come from overseas must satisfy one of the following language requirements:

- IELTS 6.0 with a minimum of 5.0 in all areas OR
- Completion of UWSCollege EAPIII course with a 50% pass level OR
- Pass in the Foundation Studies English course.

2. Academic Entry Requirements

Vary according to country of origin. However, in general, completion of Year 12 or its equivalent is the minimum entry requirement OR to have passed the Foundation

Certificate, offered by UWSCollege, with a Grade Point Average of 5.5 or higher.

Students are also assumed to have completed a Mathematics course, equivalent to the Mathematics course in the NSW Higher School Certificate or to have passed Foundation Level Mathematics.

Local students entering this Diploma are required to have:

1. Required to have completed an English course in the NSW Higher School Certificate; or to have competency in English at IELTS 6.0 with a minimum of 5.0 in all areas (unless a native speaker); or have completed the UWS College English test at IELTS 6.0 equivalent with a minimum of 5.0 in all areas; or to have passed the UWSCollege Foundation English Course.

2 Met other entry requirements such as a UAI identified prior to the offer of a place, or to have completed the UWSCollege Foundation Studies course, offered by UWSCollege, with a GPA of 5.5 or better and with a pass in Foundation Mathematics .

3. Assumed knowledge of Mathematics at the NSW Higher School Certificate or a pass in Foundation Mathematics.

Special Requirements

Students must complete Tertiary Study Skills with UWSCollege prior to completion of the diploma.

Course Structure

To be awarded a Diploma in Information and Communications Technology Fast Track, students will successfully complete with at least a pass (50% or more) eight units as listed below.

Students who wish to enter the B Computing on completion of this Diploma course will, subject to student numbers, study 700007 Statistics for Business (UWSC). Students intending to enter the Bachelor of Information and Communications Technology will, subject to student numbers, study 700041 Statistical Decision Making (UWSC).

All other units are compulsory core units of the course.

Choose one of:

700007.1	Statistics for Business (UWSC)
700041.1	Statistical Decision Making (UWSC)

Students must also complete the following seven units:

700040.1	Principles of Professional Communication 1 (UWSC)
700008.1	Programming Fundamentals (UWSC)
700000.1	Information Systems in Context (UWSC)
700011.1	Database Design and Development (UWSC)
700012.1	Computer Networking (UWSC)
700013.1	System Analysis and Design (UWSC)
700039.1	Object Oriented Analysis (UWSC)

Students also complete a mandatory unit Tertiary Study Skills, although this does not count for credit towards the Diploma.

Diploma in Science

7003.1

This course is delivered by UWSCollege as an agent of the University of Western Sydney.

The Diploma in Science is designed to provide prepare students for tertiary study in Science and in doing so address any perceived deficiencies in the students' mathematical and chemistry knowledge and skills. It presents students with first year level Bachelor of Science subjects. The Diploma aims to produce students who are fully prepared for study beyond the first year of the Bachelor of Science degree. The Diploma in Science, completed in a smaller, more supportive learning environment than usually found in first year undergraduate programs, is designed to develop students to have greater ability in self-directed study and have the self esteem that comes from prior achievement in a tertiary environment.

For more information on UWSCollege, please refer to the UWSCollege web site.
UWSCollege

Location

Campus	Attendance	Mode
Blacktown Campus	Full Time	Internal
	Full Time	Internal

Admission

The aim of the Diploma is to prepare students for tertiary study in Science. The Diploma is accredited by the University, as principal, to enable its agent, UWSCollege, to produce students who should be fully prepared for study beyond the first year of a tertiary award.

International students entering this Diploma are required to meet the following:

1. English Entry Requirements - International students must satisfy the following language requirements:

- IELTS 6.0 OR
- Completion of UWS College EAPIII course with a 50% pass OR
- A pass in the Foundation Academic English course OR
- A pass in the UWS College English Entrance Test at IELTS 6.0 equivalent.

2. Academic Entry Requirements:

Vary according to country of origin. However, in general, completion of Year 12 or its equivalent is the minimum entry requirement OR have passed the UWS College Foundation Certificate offered by UWS College with a Grade Point Average of 6.0 or higher.

Students are also assumed to have completed some study in Mathematics and Science at Senior High School level or its equivalent.

Local students entering this Diploma are:

1. Required to have completed an English course in the NSW Higher School Certificate or to have competency in English at IELTS 6.0 (unless a native speaker) or have completed the UWS College English test at IELTS 6.0

equivalent or have passed the UWS College Foundation English course.

2. Required to have met other entry requirements such as a ATAR identified prior to the offer of a place, or to have completed the UWS College Foundation Studies course offered by UWS College with a GPA of 5.5 or better.

3. Assumed to have completed some study in Mathematics and Science at Senior High School level or its equivalent.

Special Requirements

All students must complete Tertiary Study Skills with UWSCollege prior to completion of the diploma.

Course Structure

Session one

700042.1 Professional Skills for Science (UWSC)
700032.1 Biodiversity (UWSC)
700043.1 Chemistry (UWSC Foundation Studies)

Students must either complete the following two units

700045.1 Statistics for Academic Purposes (UWSCFS)
900038.1 Scientific Method (UWSC)

OR complete the following one unit

700044.1 Mathematics (UWSCFS)

Session two

700033.1 Biometry (UWSC)
700036.1 Chemistry 1 (UWSC)
700000.1 Information Systems in Context (UWSC)

Session three

700037.1 Chemistry 2 (UWSC)
700034.1 Cell Biology (UWSC)
700035.1 Physics 1 (UWSC)

Unit Sets

Key Program - Science (No Key Program)

KP3000.1

Intended for students who do not wish to specialise in a single key area of study, but who want a versatile and flexible course of study in science, this program includes a core of basic science units including biology, chemistry, mathematics and physics. You can then add units from a range of scientific and other disciplines to suit your interests and career aspirations.

Offer

Campus	Mode
Campbelltown Campus	Multi Modal
Hawkesbury Campus	Multi Modal
Parramatta Campus	Multi Modal

Unit Set Structure

Bachelor of Science (without a Key Program)

Students who do not wish to enrol in a Bachelor of Science Key Program must complete at least 160 credit points from the Bachelor of Science Unit Pool, and complete one of the Majors listed in the UWS Handbook entry for the Bachelor of Science.

Year 1

Autumn session

Three Level 1 units from the Bachelor of Science Unit Pool
And one elective

Spring session

Three Level 1 units from the Bachelor of Science Unit Pool
And one elective

Year 2

Autumn session

Three Level 2 units from the Bachelor of Science Unit Pool
And one elective

Spring session

Three Level 2 units from the Bachelor of Science Unit Pool
And one elective

Year 3

Autumn session

Two Level 3 units from the Bachelor of Science Unit Pool
And one Level 3 elective
And one elective

Spring session

Two Level 3 units from the Bachelor of Science Unit Pool
And one Level 3 elective
And one elective

Key Program - Civil

KP3621CIVI.1

Civil engineering covers the fields of structural design, construction management and water engineering, together with quality assurance and environmental engineering. Graduates will work in the fields of design, construction and management. Projects may cover roads, airports, water supply and sewerage schemes, and large buildings. You may be an engineer in private industry, government departments, or in city, municipal or shire councils.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Full-time - Autumn intake

Year 2

Autumn session

85012.2	Soil Engineering
300040.1	Mechanics of Materials
85009.2	Water Engineering
300482.1	Engineering Geology and Concrete Materials

Spring session

85006.2	Introduction to Structural Engineering
MG102A.2	Management Foundations
85003.1	Surveying for Engineers
85021.2	Environmental Engineering

Year 3

Autumn session

85010.1	Structural Analysis

Choose one of

300479.1	Drainage Engineering
300486.1	Infrastructure Engineering

Choose one of

85015.2	Timber Structures (UG)
85020.2	Water Resources Engineering (UG)

And one elective

Spring session

300053.2	Professional Practice
85014.3	Steel Structures (UG)

85251.2 Concrete Structures (UG)

Choose one of

300485.1 Foundation Engineering
300488.2 Numerical Methods in Engineering

Industrial Experience:

81999.1 Industrial Experience (Engineering)

Year 4 (Non-Honours stream)

Autumn session

300483.1 Engineering Project

Choose one of

300479.1 Drainage Engineering
300486.1 Infrastructure Engineering

Choose one of

85015.2 Timber Structures (UG)
85020.2 Water Resources Engineering (UG)

And one elective

Spring session

300483.1 Engineering Project

Choose one of

300485.1 Foundation Engineering
300488.1 Numerical Methods in Engineering

And two electives

Year 4 (Honours stream)

Honours streaming is based on performance in the first 3 years

Autumn session

300675.1 Honours Thesis

And two electives

Spring session

300675.1 Honours Thesis

Choose one of

300485.1 Foundation Engineering
300488.1 Numerical Methods in Engineering

And one elective

Full-time - Spring Intake

Year 1

Spring session

200237.1 Mathematics for Engineers 1
300463.1 Fundamentals of Mechanics
300021.1 Electrical Fundamentals
300462.1 Engineering and Design Concepts

Autumn session

200238.1 Mathematics for Engineers 2
300464.1 Physics and Materials
300040.1 Mechanics of Materials
300674.1 Engineering, Design and Construction Practice

Year 2

Spring session

85006.2 Introduction to Structural Engineering
MG102A.2 Management Foundations
85003.1 Surveying for Engineers
85021.2 Environmental Engineering

Autumn session

85012.2 Soil Engineering
300027.1 Engineering Computing
85009.2 Water Engineering
300482.1 Engineering Geology and Concrete Materials

Year 3

Spring session

300053.2 Professional Practice
85014.3 Steel Structures (UG)
85251.2 Concrete Structures (UG)

Choose one of:

300485.1 Foundation Engineering
300488.1 Numerical Methods in Engineering

Autumn session

85010.1 Structural Analysis

Choose one of:

300479.1 Drainage Engineering
300486.1 Infrastructure Engineering

Choose one of:

85015.2 Timber Structures (UG)
85020.2 Water Resources Engineering (UG)

And one elective

Industrial Experience:

81999.1 Industrial Experience (Engineering)

Year 4 (Non-Honours stream)

Spring session

300483.1 Engineering Project

Choose one of:

300485.1 Foundation Engineering
300488.1 Numerical Methods in Engineering

And two electives

Autumn session

300483.1 Engineering Project

Choose one of:

300479.1 Drainage Engineering
300486.1 Infrastructure Engineering

Choose one of:

85015.2 Timber Structures (UG)
85020.2 Water Resources Engineering (UG)

And one elective

Year 4 (Honours stream)

Honours streaming is based on performance in the first 3 years

Spring session

300675.1 Honours Thesis

Choose one of:

300485.1 Foundation Engineering
300488.1 Numerical Methods in Engineering

And one elective

Autumn session

300675.1 Honours Thesis

And two electives

Key Program - Computer

KP3621COMP.1

Computer engineering is a specialist area that relates to computers and communication systems that process information and control physical processes and to designing faster computers. Subjects include computer networks, digital systems and communications, microprocessors and embedded micro-controllers. Graduates will work in hardware and software development, in supervisory and data acquisition systems, in industrial applications of computer controlled equipment, in networking and data communications and in developing networking technologies. You will primarily be a problem-solver and organiser, with specialist knowledge of computer hardware, software, communications, computer networking, computer control and real-time computer systems.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Full-time - Autumn intake

Year 2

Autumn session

200242.1 Mathematics for Engineers 3
300018.1 Digital Systems 1
300005.1 Circuit Theory
300025.2 Electronics

Spring session

300076.1 Microprocessor Systems
300057.2 Signals and Systems
300096.3 Computer Organisation
300052.1 Power and Machines

Year 3

Autumn session

300167.2 Systems Programming 1
300069.2 Digital Signal Processing
300075.2 Instrumentation and Measurement
300009.2 Control Systems

Spring session

300149.1 Operating Systems
300053.2 Professional Practice
300010.2 Data Networks

One elective

Industrial Experience:

81999.1 Industrial Experience (Engineering)

Year 4 (Non-Honours stream)

Autumn session

300483.1 Engineering Project
300092.1 Computer Architecture

Choose one of

300019.2 Digital Systems 2
300029.2 Engineering Visualization

And one elective

Spring session

300483.1 Engineering Project

Choose one of

300370.2 Digital Control Systems
300044.1 Microcontrollers and PLCs

And two electives

Year 4 (Honours stream)

Honours streaming is based on performance in the first 3 years

Autumn session

300675.1 Honours Thesis
300092.1 Computer Architecture

And one elective

Spring session

300675.1 Honours Thesis

And two electives

Full-time - Spring Intake

Year 1

Spring session

200237.1 Mathematics for Engineers 1
300463.1 Fundamentals of Mechanics
300021.1 Electrical Fundamentals
300462.1 Engineering and Design Concepts

Autumn session

200238.1 Mathematics for Engineers 2
300464.1 Physics and Materials
300027.1 Engineering Computing
300005.1 Circuit Theory

Year 2

Spring session

200242.1 Mathematics for Engineers 3
300057.2 Signals and Systems
300052.1 Power and Machines

And one elective

Autumn session

300018.1 Digital Systems 1
300674.1 Engineering, Design and Construction Practice
300025.2 Electronics

And one elective

Year 3

Spring session

300096.3 Computer Organisation
300053.2 Professional Practice
300010.2 Data Networks
300076.1 Microprocessor Systems

Autumn session

300167.1 Systems Programming 1
300069.2 Digital Signal Processing
300075.2 Instrumentation and Measurement
300009.2 Control Systems

Industrial Experience:

81999.1 Industrial Experience (Engineering)

Year 4 (Non-Honours stream)

Spring session

300483.1 Engineering Project
300149.1 Operating Systems

Choose one of:

300370.1 Digital Control Systems
300044.1 Microcontrollers and PLCs

And one elective

Autumn session

300483.1 Engineering Project
300092.1 Computer Architecture

Choose one of:

300019.2 Digital Systems 2
300029.1 Engineering Visualization

And one elective

Year 4 (Honours stream)

Honours streaming is based on performance in the first 3 years

Spring session

300675.1 Honours Thesis
300149.1 Operating Systems

And one elective

Autumn session

300675.1 Honours Thesis
300092.1 Computer Architecture

And one elective

Key Program - Electrical

KP3621ELEC.1

This program includes core subjects from all branches of electrical engineering. Graduates will work in the fields of electronic components, computers, electro-magnetics, power generation and distribution systems, power and control in public utilities, telecommunications, manufacturing, and electrical systems.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Full-time - Autumn intake

Year 2

Autumn session

200242.1 Mathematics for Engineers 3
300018.1 Digital Systems 1
300005.1 Circuit Theory
300025.2 Electronics

Spring session

300076.1 Microprocessor Systems
300057.2 Signals and Systems
300481.1 Engineering Electromagnetics
300052.1 Power and Machines

Year 3

Autumn session

300007.1 Communication Systems
300069.2 Digital Signal Processing
300071.1 Electrical Machines 1
300009.2 Control Systems

Spring session

300026.2 Energy Systems
300053.2 Professional Practice
300070.2 Electrical Drives

And one elective

Industrial Experience:

81999.1 Industrial Experience (Engineering)

Year 4 (Non-Honours stream)

Autumn session

300483.1 Engineering Project
300075.2 Instrumentation and Measurement

Choose one of

300019.2 Digital Systems 2
300024.2 Electronic Systems Design

And one elective

Spring session

300483.1 Engineering Project

Choose one of

300370.2 Digital Control Systems
300010.2 Data Networks

And two electives

Year 4 (Honours stream)

Honours streaming is based on performance in the first 3 years

Autumn session

300675.1 Honours Thesis
300075.2 Instrumentation and Measurement

And one elective

Spring session

300675.1 Honours Thesis

And two electives

Full-time - Spring Intake

Year 1

Spring session

200237.1 Mathematics for Engineers 1
300463.1 Fundamentals of Mechanics
300021.1 Electrical Fundamentals
300462.1 Engineering and Design Concepts

Autumn session

200238.1 Mathematics for Engineers 2
300464.1 Physics and Materials
300027.1 Engineering Computing
300005.1 Circuit Theory

Year 2

Spring session

200242.1 Mathematics for Engineers 3
300057.2 Signals and Systems
300481.1 Engineering Electromagnetics
300052.1 Power and Machines

Autumn session

300018.1 Digital Systems 1
300674.1 Engineering, Design and Construction Practice
300025.2 Electronics

And one elective

Year 3

Spring session

300026.1 Energy Systems
300053.2 Professional Practice
300076.1 Microprocessor Systems

And one elective

Autumn session

300007.1 Communication Systems
300069.2 Digital Signal Processing
300071.1 Electrical Machines 1
300009.2 Control Systems

Industrial Experience:

81999.1 Industrial Experience (Engineering)

Year 4 (Non-Honours stream)

Spring session

300483.1 Engineering Project
300070.2 Electrical Drives

Choose one of:

300370.1 Digital Control Systems
300010.2 Data Networks

And one elective

Autumn session

300483.1 Engineering Project
300075.2 Instrumentation and Measurement

Choose one of:

300019.2 Digital Systems 2
300024.2 Electronic Systems Design

And one elective

Year 4 (Honours stream)

Honours streaming is based on performance in the first 3 years

Spring session

300675.1 Honours Thesis
300070.2 Electrical Drives

And one elective

Autumn session

300675.1 Honours Thesis
300075.1 Instrumentation and Measurement

And one elective

Key Program - Environmental

KP3621ENVI.1

This program provides an essential grounding in ecology, civil engineering and environmental management. Environmental engineers are concerned with ensuring a sustainable and better future for the community by developing and managing systems that integrate with and protect our environment. Graduates will work as environmental engineers in private, industrial, and mining companies; government departments; and city, municipal and shire councils.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Full-time - Autumn intake

Year 2

Autumn session

85012.2 Soil Engineering
300040.1 Mechanics of Materials
85009.2 Water Engineering
300469.1 Introductory Chemistry

Spring session

85006.2 Introduction to Structural Engineering
85003.1 Surveying for Engineers
85021.2 Environmental Engineering

And one elective

Year 3

Autumn session

EY104A.1 Management of Aquatic Environments
300482.1 Engineering Geology and Concrete Materials

Choose one of

300479.1 Drainage Engineering
300486.1 Infrastructure Engineering

Choose one of

MG309A.1 Water and Waste Management
85020.2 Water Resources Engineering (UG)

Spring session

EY101A.1 Terrestrial Environment Management
MG102A.2 Management Foundations
300053.2 Professional Practice

Choose one of

EH321A.1 Air Quality Assessment & Management (UG)
300488.2 Numerical Methods in Engineering

Industrial Experience:

81999.1 Industrial Experience (Engineering)

Year 4 (Non-Honours stream)

Autumn session

300483.1 Engineering Project

Choose one of

300479.1 Drainage Engineering
300486.1 Infrastructure Engineering

Choose one of

MG309A.1 Water and Waste Management
85020.2 Water Resources Engineering (UG)

And one elective

Spring session

300483.1 Engineering Project

Choose one of

EH321A.1 Air Quality Assessment & Management (UG)
300488.1 Numerical Methods in Engineering

And two electives

Year 4 (Honours stream)

Honours streaming is based on performance in the first 3 years

Autumn session

300675.1 Honours Thesis

And two electives

Spring session

300675.1 Honours Thesis

Choose one of

EH321A.1 Air Quality Assessment & Management (UG)
300488.1 Numerical Methods in Engineering

And one elective

Full-time - Spring Intake

Year 1

Spring session

200237.1 Mathematics for Engineers 1
300463.1 Fundamentals of Mechanics
300021.1 Electrical Fundamentals
300462.1 Engineering and Design Concepts

Autumn session

200238.1 Mathematics for Engineers 2
300464.1 Physics and Materials
300040.1 Mechanics of Materials
300674.1 Engineering, Design and Construction Practice

Year 2

Spring session

85006.2 Introduction to Structural Engineering
85003.1 Surveying for Engineers
85021.2 Environmental Engineering

And one elective

Autumn session

85012.2 Soil Engineering
300027.1 Engineering Computing
85009.2 Water Engineering
300469.1 Introductory Chemistry

Year 3

Spring session

EY101A.1 Terrestrial Environment Management
MG102A.2 Management Foundations
300053.2 Professional Practice

Choose one of:

EH321A.1 Air Quality Assessment & Management (UG)
300488.1 Numerical Methods in Engineering

Autumn session

EY104A.1 Management of Aquatic Environments
300482.1 Engineering Geology and Concrete Materials

Choose one of:

300479.1 Drainage Engineering
300486.1 Infrastructure Engineering

Choose one of:

MG309A.1 Water and Waste Management
85020.2 Water Resources Engineering (UG)

Industrial Experience:

81999.1 Industrial Experience (Engineering)

Year 4 (Non-Honours stream)

Spring session

300483.1 Engineering Project

Choose one of:

EH321A.1 Air Quality Assessment & Management (UG)
300488.1 Numerical Methods in Engineering

And two electives

Autumn session

300483.1 Engineering Project

Choose one of:

300479.1 Drainage Engineering
300486.1 Infrastructure Engineering

Choose one of:

MG309A.1 Water and Waste Management
85020.2 Water Resources Engineering (UG)

And one elective

Year 4 (Honours stream)

Honours streaming is based on performance in the first 3 years

Spring session

300675.1 Honours Thesis

Choose one of:

EH321A.1 Air Quality Assessment & Management (UG)

300488.1 Numerical Methods in Engineering

And one elective

Autumn session

300675.1 Honours Thesis

And two electives

Key Program - Robotics And Mechatronics

KP3621R&M.1

This program provides the skills necessary for the design of smart machines of all types: cruise control in automobiles, pilotless spacecraft, automated factories and medical telerobotics. The course, accompanied by an extensive and integrated hands-on laboratory program, is essentially concerned with the design of intelligent mechanical systems and automation, and includes the study of robotics, computer control, automated manufacturing, microprocessor applications and machine design. Graduates in the program acquire the combined skills of mechanical and computer/electrical engineering that are needed in leading-edge industries such as aerospace systems, the car industry, automation and robotic applications, biomedical engineering, laser systems, and building materials manufacture.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Full-time - Autumn intake

Year 2

Autumn session

300035.2 Kinematics and Kinetics of Machines
300040.1 Mechanics of Materials
300005.1 Circuit Theory
300025.2 Electronics

Spring session

300044.1 Microcontrollers and PLCs
86301.2 Automated Manufacturing
300480.1 Dynamics of Mechanical Systems
300052.1 Power and Machines

Year 3

Autumn session

300018.1 Digital Systems 1
300071.1 Electrical Machines 1
300009.2 Control Systems

Choose one of

300056.2 Robotics
300043.2 Mobile Robotics

Spring session

300053.2 Professional Practice

Choose one of

300478.1 Design of Servo-systems
300487.1 Mechatronic Design

And two electives

Industrial Experience:

81999.1 Industrial Experience (Engineering)

Year 4 (Non-Honours stream)

Autumn session

300483.1 Engineering Project
300075.2 Instrumentation and Measurement

Choose one of

300056.2 Robotics
300043.2 Mobile Robotics

And one elective

Spring session

300483.1 Engineering Project

Choose one of

300478.1 Design of Servo-systems
300487.1 Mechatronic Design

Choose one of

300304.2 Sustainable Design: Materials Technology
300076.1 Microprocessor Systems

And one elective

Year 4 (Honours stream)

Honours streaming is based on performance in the first 3 years

Autumn session

300675.1 Honours Thesis

Choose one of

300056.2 Robotics
300043.2 Mobile Robotics

And one elective

Spring session

300675.1 Honours Thesis

Choose one of

300478.1 Design of Servo-systems
300487.1 Mechatronic Design

And one elective

Full-time - Spring Intake

Year 1

Spring session

200237.1 Mathematics for Engineers 1
300463.1 Fundamentals of Mechanics
300021.1 Electrical Fundamentals
300462.1 Engineering and Design Concepts

Autumn session

200238.1 Mathematics for Engineers 2
300464.1 Physics and Materials
300040.1 Mechanics of Materials
300005.1 Circuit Theory

Year 2

Spring session

86301.2 Automated Manufacturing
300052.1 Power and Machines

And two electives

Autumn session

300035.2 Kinematics and Kinetics of Machines
300027.1 Engineering Computing
300674.1 Engineering, Design and Construction Practice
300025.2 Electronics

Year 3

Spring session

300053.2 Professional Practice
300480.1 Dynamics of Mechanical Systems
300044.1 Microcontrollers and PLCs

Choose one of:

300478.1 Design of Servo-systems
300487.1 Mechatronic Design

Autumn session

300018.1 Digital Systems 1
300071.1 Electrical Machines 1
300009.2 Control Systems

Choose one of:

300056.2 Robotics
300043.1 Mobile Robotics

Industrial Experience:

81999.1 Industrial Experience (Engineering)

Year 4 (Non-Honours stream)

Spring session

300483.1 Engineering Project

Choose one of:

300478.1 Design of Servo-systems
300487.1 Mechatronic Design

Choose one of:

300304.2 Sustainable Design: Materials Technology
300076.1 Microprocessor Systems

And one elective

Autumn session

300483.1 Engineering Project
300075.2 Instrumentation and Measurement

Choose one of:

300056.2 Robotics
300043.1 Mobile Robotics

And one elective

Year 4 (Honours stream)

Honours streaming is based on performance in the first 3 years

Spring session

300675.1 Honours Thesis

Choose one of:

300478.1 Design of Servo-systems
300487.1 Mechatronic Design

And one elective

Autumn session

300675.1 Honours Thesis

Choose one of:

300056.2 Robotics
300043.2 Mobile Robotics

And one elective

Key Program - Telecommunications

KP3621TELE.1

This program emphasises the hardware issues related to telecommunications, including digital systems, antenna design, communication hardware, data transfer and management and signal processing. Graduates will work in a variety of situations, such as communications in offices, communications between machines, and intercontinental communication issues. There is a high demand for telecommunications engineers as providers struggle to meet the rapid increase demand for both personal and business use of different modes of communications, including the mobile telephone and Internet.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Full-time - Autumn intake

Year 2

Autumn session

200242.1 Mathematics for Engineers 3
300018.1 Digital Systems 1
300005.1 Circuit Theory
300025.2 Electronics

Spring session

300076.1 Microprocessor Systems
300057.2 Signals and Systems
300481.1 Engineering Electromagnetics
300052.1 Power and Machines

Year 3

Autumn session

300007.1 Communication Systems
300069.2 Digital Signal Processing
300167.1 Systems Programming 1
300029.2 Engineering Visualization

Spring session

300065.2 Wireless Communications
300053.2 Professional Practice
300010.2 Data Networks

And one elective

Industrial Experience:

81999.1 Industrial Experience (Engineering)

Year 4 (Non-Honours stream)

Autumn session

300483.1 Engineering Project

Choose one of

300075.2 Instrumentation and Measurement
300009.2 Control Systems

Choose one of

300019.2 Digital Systems 2
300046.1 Multimedia Signal Processing

And one elective

Spring session

300483.1 Engineering Project

Choose one of

300068.2 Communication Electronics
300489.1 Radio and Satellite Communication

And two electives

Year 4 (Honours stream)

Honours streaming is based on performance in the first 3 years

Autumn session

300675.1 Honours Thesis

And two electives

Spring session

300675.1 Honours Thesis

Choose one of

300068.2 Communication Electronics
300489.1 Radio and Satellite Communication

And one elective

Full-time - Spring Intake

Year 1

Spring session

200237.1 Mathematics for Engineers 1
300463.1 Fundamentals of Mechanics
300021.1 Electrical Fundamentals
300462.1 Engineering and Design Concepts

Autumn session

200238.1 Mathematics for Engineers 2
300464.1 Physics and Materials
300027.1 Engineering Computing
300005.1 Circuit Theory

Year 2

Spring session

200242.1 Mathematics for Engineers 3
300057.2 Signals and Systems
300481.1 Engineering Electromagnetics
300052.1 Power and Machines

Autumn session

300018.1 Digital Systems 1
300674.1 Engineering, Design and Construction Practice
300025.2 Electronics

And one elective

Year 3

Spring session

300053.2 Professional Practice
300010.2 Data Networks
300076.1 Microprocessor Systems

And one elective

Autumn session

300007.1 Communication Systems
300069.2 Digital Signal Processing
300167.2 Systems Programming 1
300029.1 Engineering Visualization

Industrial Experience:

81999.1 Industrial Experience (Engineering)

Year 4 (Non-Honours stream)

Spring session

300483.1 Engineering Project
300065.2 Wireless Communications

Choose one of:

300068.2 Communication Electronics
300489.1 Radio and Satellite Communication

And one elective

Autumn session

300483.1 Engineering Project

Choose one of:

300075.2 Instrumentation and Measurement
300009.2 Control Systems

Choose one of:

300019.1 Digital Systems 2
300046.1 Multimedia Signal Processing

And one elective

Year 4 (Honours stream)

Honours streaming is based on performance in the first 3 years

Spring session

300675.1 Honours Thesis
300065.1 Wireless Communications

Choose one of:

300068.2 Communication Electronics
300489.1 Radio and Satellite Communication

Autumn session

300675.1 Honours Thesis

And two electives

Key Program - Human Molecular Biology

KP3632HMB.1

Human Molecular Biology emphasises recent discoveries in molecular and cell biology relevant to human health and disease - molecular biology and functional genomics, protein science, proteomics, human metabolism, genetics, cell signalling and molecular immunology.

Offer

Campus	Mode
Campbelltown Campus	Multi Modal

Unit Set Structure

Qualification for the Bachelor of Biomolecular Science with a Key Program in Human Molecular Biology requires the successful completion of 240 credit points including the units listed in the recommended sequence below.

Full Time

Year 1

Autumn session

300539.1 Biodiversity
300554.1 Principles of Chemistry
300558.1 Physics 1

Choose one of

200191.3 Fundamentals of Mathematics
200189.1 Concepts of Mathematics

Spring session

300543.1 Cell Biology
300550.1 Medicinal Chemistry
300541.1 Biomolecular Frontiers

And one elective

Year 2

Autumn session

300555.1 Proteins and Genes
300300.1 Microbiology 1
300547.1 Human Genetics

And one elective

Spring session

300548.1 Human Metabolism and Disease
300321.1 Microbiology 2

One Level 2 Chemistry unit

And one elective

Please note: some Chemistry Level 2 units are on offer in Autumn only. Students may choose to study a Chemistry Level 2 unit in Autumn in place of an elective, and then choose two electives in the Spring session.

Year 3

Autumn session

300549.1 Human Molecular Biology
300544.1 Cell Signalling
300556.1 Analytical Protein Science

And one elective

Spring session

300551.1 Molecular Basis of Disease
300757.1 Molecular Biology of the Immune System

One Level 3 alternate unit

And one elective

Please note: some Level 3 Alternate Units are on offer in Autumn only. Students may choose to study an Alternate Unit in Autumn in place of an elective, and then choose two electives in the Spring session.

Level 2 Chemistry Units

300297.1 Analytical Chemistry 2
300540.1 Biomolecular Dynamics
300545.1 Coordination Chemistry
300553.1 Molecules of Life: Synthesis and Reactivity

Level 3 Alternate Units

300749.1 Medical Microbiology
300324.1 Pharmacological Chemistry
300756.1 Topics in Physiology
300537.1 Advanced Chemical Analysis
300538.1 Advanced Inorganic Chemistry
300542.1 Biomolecular Science Project
300546.1 Drug Design and Synthesis

Key Program - Pharmaceutical Chemistry

KP3632PC.1

Pharmaceutical Chemistry emphasises the applications of chemistry for human health – biomolecular dynamics and pharmacokinetics, coordination chemistry, drug design, development, and analysis.

Offer

Campus	Mode
Campbelltown Campus	Multi Modal

Unit Set Structure

Qualification for the Bachelor of Biomolecular Science with a Key Program in Pharmaceutical Chemistry requires the successful completion of 240 credit points including the units listed in the recommended sequence below.

Full Time

Year 1

Autumn session

300539.1 Biodiversity
300554.1 Principles of Chemistry
300558.1 Physics 1

Choose one of

200191.3 Fundamentals of Mathematics
200189.1 Concepts of Mathematics

Spring session

300543.1 Cell Biology
300550.1 Medicinal Chemistry
300541.1 Biomolecular Frontiers

And one elective

Year 2

Autumn session

300545.1 Coordination Chemistry
300540.1 Biomolecular Dynamics
300555.1 Proteins and Genes

And one elective

Spring session

300297.1 Analytical Chemistry 2
300553.1 Molecules of Life: Synthesis and Reactivity
300505.1 Pharmacology

And one elective

Year 3

Autumn session

300537.1 Advanced Chemical Analysis
300546.1 Drug Design and Synthesis

One Level 3 Alternate unit

And one elective

Spring session

300538.1 Advanced Inorganic Chemistry
300324.1 Pharmacological Chemistry
300475.1 Molecular Pharmacokinetics

And one elective

Please note: some Level 3 Alternate units are on offer in Spring only. Students may choose to study two elective units in the Autumn session and an Alternate unit in Spring.

Level 3 Alternate Units

300542.1 Biomolecular Science Project
300544.1 Cell Signalling
300549.1 Human Molecular Biology
300757.1 Molecular Biology of the Immune System
300556.1 Analytical Protein Science
300557.1 Molecular Spectroscopy

Key Program - Health Promotion

KP4545HPRO.1

The Health Promotion key program focuses on enabling individuals and communities to increase control over factors that influence health and wellbeing. Students will develop skills enabling them to work on specific health promotion projects such as injury prevention, skin cancer prevention, HIV/AIDs awareness, and community

development projects, as well as in areas that deal with policy initiative, development and evaluation.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Qualification for the Bachelor of Health Science with a Key Program in Health Promotion requires the successful completion of 240 credit points including the units listed in the recommended sequence below.

Full-time

Year 1

Autumn session

400783.1 Professional Pathways in Health Science
300361.1 Introduction to Human Biology
400780.2 Nutrition, Physical Activity and Mental Health
400781.1 Dynamics of Health

Spring session

400285.1 Public Health
100663.1 Foundations of Wellbeing
400136.1 Introduction to the Psychology of Health
400137.1 Introduction to Research for Health Sciences

Year 2

Autumn session

400782.1 Essentials of Health Promotion
400148.2 Quantitative Research

And two electives

Spring session

400272.1 Health Care Systems
400273.1 Health Politics, Policy and Planning
400286.1 Injury Prevention

And one elective

Year 3

Autumn session

400784.1 Health Promotion Practice 1
400275.1 Health Planning Project

And two electives

Spring session

400785.1 Health Promotion Practice 2
400249.1 Ethical and Legal Issues in Health Care
400786.1 Professional Transition Project

And one elective

Key Program - Health Services Management

KP4545HSM.1

Health Services Management key program aims to develop beginning level health managers who will understand and, with experience, will facilitate the new directions that health care systems are taking. Graduates will be skilled in managing and responding to rapid changes within the health care system, the broader political sphere and in areas that deal with policy initiative, development and evaluation.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Qualification for the Bachelor of Health Science with a Key Program in Health Services Management requires the successful completion of 240 credit points including the units listed in the recommended sequence below.

Full-time

Year 1

Autumn session

400783.1 Professional Pathways in Health Science
300361.1 Introduction to Human Biology
400780.2 Nutrition, Physical Activity and Mental Health
400781.1 Dynamics of Health

Spring session

400277.2 Health Services Management
100663.1 Foundations of Wellbeing
400137.1 Introduction to Research for Health Sciences
400136.1 Introduction to the Psychology of Health

Year 2

Autumn session

400782.1 Essentials of Health Promotion
400148.2 Quantitative Research

And two electives

Spring session

400272.1 Health Care Systems
400273.1 Health Politics, Policy and Planning
400788.1 Health Services Workforce Management

And one elective

Year 3

Autumn session

400787.1 Health Services Management Practice
400275.1 Health Planning Project

And two electives

Spring session

400249.1 Ethical and Legal Issues in Health Care
400279.2 Health Services Financial Management
400786.1 Professional Transition Project

And one elective

Key Program - Social Health Studies

KP4545SHS.1

The Social Health Studies key program aims to give graduates an in-depth understanding of the social and behavioural processes contributing to health and illness. It allows students to draw from a suite of specialist units that examine the social and behavioural nature and social impact of health and illness within society. It also provides access to the latest research and knowledge about health in society.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Qualification for the Bachelor of Health Science with a Key Program in Social Health Studies requires the successful completion of 240 credit points including the units listed in the recommended sequence below.

Full-time

Year 1

Autumn session

400783.1 Professional Pathways in Health Science
300361.1 Introduction to Human Biology
400780.2 Nutrition, Physical Activity and Mental Health
400781.1 Dynamics of Health

Spring session

100663.1 Foundations of Wellbeing
400136.1 Introduction to the Psychology of Health
400137.1 Introduction to Research for Health Sciences

And one elective

Year 2

Autumn session

400782.1 Essentials of Health Promotion

And two units from the Social Health Studies Unit Pool
And one elective

Spring session

400272.1 Health Care Systems

Two units from the Social Health Studies Unit Pool
And one elective

Year 3

Autumn session

Two units from the Social Health Studies Unit Pool
And two electives

Spring session

101326.1 Work-based Learning Project: Humanitarian, Peace and Health Studies
400786.1 Professional Transition Project

And one elective

Social Health Studies Unit Pool

101318.1 Gender and Society
101319.1 Drugs, Addiction and Society
101322.1 Family Life, Health and Leisure
101325.1 Children, Wellbeing and Society
101326.1 Work-based Learning Project: Humanitarian, Peace and Health Studies
101336.1 Introduction to Sociology
101351.1 Health and Personality
101352.1 Mind, Body and Emotion
101369.1 Statistical Knowledge and Social Power
101370.1 Power, Control and Decision Making
400086.2 Adulthood and Ageing
400088.2 Critical Qualitative Research

All units not available each year - please check timetable for availability

Key Program - Therapeutic Recreation

KP4545TR.1

The Therapeutic Recreation key program provides students with expertise in designing, implementing and evaluating therapeutic recreation programs for people who experience barriers to participation in leisure and recreation programs such as in special schools, aged care facilities, as well as health care and community settings. Such leisure and recreation participation provides a variety of benefits that promote health and wellbeing. The curriculum aims to produce a graduate who can utilise the appropriate process and content to provide leisure and recreation programs, services for a range of people who experience disabilities, illness or disadvantage.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Qualification for the Bachelor of Health Science with a Key Program in Therapeutic Recreation requires the successful completion of 240 credit points including the units listed in the recommended sequence below.

Full-time

Year 1

Autumn session

400783.1 Professional Pathways in Health Science
300361.1 Introduction to Human Biology
400780.2 Nutrition, Physical Activity and Mental Health
400781.1 Dynamics of Health

Spring session

100663.1 Foundations of Wellbeing
400136.1 Introduction to the Psychology of Health
400137.1 Introduction to Research for Health Sciences
400244.1 Introduction to Leisure and Recreation Theory

Year 2

Autumn session

400782.1 Essentials of Health Promotion
400148.2 Quantitative Research

And two electives

Spring session

400272.1 Health Care Systems
400246.2 Workplace Learning 1 (Therapeutic Recreation)
400790.1 Professional Practice in Aged Care and Disability

And one elective

Year 3

Autumn session

400252.1 Workplace Learning 2 (Community Placement)
400789.1 Leisure Education Programming and Mental Health

And two electives

Spring session

400249.1 Ethical and Legal Issues in Health Care
400254.1 Therapeutic Recreation Professional Project
400786.1 Professional Transition Project

And one elective

Key Program - Information Systems

KT3000.1

The Key Program in Information Systems focuses on computing and information technology in the context of business.

Offer

Campus	Mode
Parramatta Campus	Multi Modal

Unit Set Structure

Start of Year Intake

Year 1

Autumn session

300580.1 Programming Fundamentals
100483.1 Principles of Professional Communication 1
300585.1 Systems Analysis and Design
300573.1 Information Systems in Context

Spring session

300565.1 Computer Networking
300104.1 Database Design and Development
300144.2 Object Oriented Analysis

And one elective

Year 2

Autumn session

300582.1 Technologies for Web Applications
300570.2 Human-Computer Interaction
300581.1 Programming Techniques
200032.2 Statistics for Business

Spring session

300583.1 Web Systems Development
300569.1 Computer Security
300572.1 Information Systems Deployment and Management
300089.3 Commercial Applications Development

Year 3

Autumn session

300578.1 Professional Development
300584.1 Emerging Trends in Information Systems

And two electives

Spring session

300579.1 Professional Experience

And three electives

Mid Year Intake

Year 1

Spring session

300565.1 Computer Networking
300104.1 Database Design and Development
300144.2 Object Oriented Analysis

And one elective

Year 2

Autumn session

300580.1	Programming Fundamentals
100483.1	Principles of Professional Communication 1
300585.1	Systems Analysis and Design
300573.1	Information Systems in Context

Spring session

300569.1	Computer Security
300572.1	Information Systems Deployment and Management
300089.3	Commercial Applications Development

And one elective

Year 3

Autumn session

300582.1	Technologies for Web Applications
300570.2	Human-Computer Interaction
300581.1	Programming Techniques
200032.1	Statistics for Business

Spring session

300579.1	Professional Experience
300583.1	Web Systems Development

And two electives

Year 4

Autumn session

300578.1	Professional Development
300584.1	Emerging Trends in Information Systems

And two electives

Key Program - Civil

KT3001.1

Civil engineering covers the fields of structural design, construction management and water engineering, together with quality assurance and environmental engineering. Graduates will work in the fields of design, construction and management. Projects may cover roads, airports, water supply and sewerage schemes, and large buildings. You may be an engineer in private industry, government departments, or in city, municipal or shire councils.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Full-time

Year 1

Autumn session

200237.1	Mathematics for Engineers 1
300464.1	Physics and Materials
300027.1	Engineering Computing
300674.1	Engineering, Design and Construction Practice

Spring session

200238.1	Mathematics for Engineers 2
300463.1	Fundamentals of Mechanics
300021.1	Electrical Fundamentals
300462.1	Engineering and Design Concepts

Year 2

Autumn session

85012.2	Soil Engineering
300040.1	Mechanics of Materials
85009.2	Water Engineering
300482.1	Engineering Geology and Concrete Materials

Spring session

85006.2	Introduction to Structural Engineering
MG102A.2	Management Foundations
85003.1	Surveying for Engineers
85021.2	Environmental Engineering

Year 3

Autumn session

85010.1	Structural Analysis
300666.1	Advanced Engineering Topic 1

Choose one of

300479.1	Drainage Engineering
300486.1	Infrastructure Engineering

Choose one of

85020.2	Water Resources Engineering (UG)
85015.2	Timber Structures (UG)

Spring

85014.3	Steel Structures (UG)
300053.2	Professional Practice
85251.2	Concrete Structures (UG)

Choose one of

300485.1	Foundation Engineering
300488.2	Numerical Methods in Engineering

Industrial experience:

81999.1	Industrial Experience (Engineering)

Year 4 (Honours stream)

Autumn session

300667.1 Advanced Engineering Topic 2
300668.1 Advanced Engineering Thesis

Spring session

300668.1 Advanced Engineering Thesis

Choose one of

300485.1 Foundation Engineering
300488.1 Numerical Methods in Engineering

Key Program - Computer

KT3002.1

Computer engineering is a specialist area that relates to computers and communication systems that process information and control physical processes and to designing faster computers. Subjects include computer networks, digital systems and communications, microprocessors and embedded micro-controllers. Graduates will work in hardware and software development, in supervisory and data acquisition systems, in industrial applications of computer controlled equipment, in networking and data communications and in developing networking technologies. You will primarily be a problem-solver and organiser, with specialist knowledge of computer hardware, software, communications, computer networking, computer control and real-time computer systems.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Full-time

Year 1

Autumn session

200237.1 Mathematics for Engineers 1
300464.1 Physics and Materials
300027.1 Engineering Computing
300674.1 Engineering, Design and Construction Practice

Spring session

200238.1 Mathematics for Engineers 2
300463.1 Fundamentals of Mechanics
300021.1 Electrical Fundamentals
300462.1 Engineering and Design Concepts

Year 2

Autumn session

200242.1 Mathematics for Engineers 3
300018.1 Digital Systems 1
300005.1 Circuit Theory
300025.2 Electronics

Spring session

300076.1 Microprocessor Systems
300057.2 Signals and Systems
300096.3 Computer Organisation
300052.1 Power and Machines

Year 3

Autumn session

300167.1 Systems Programming 1
300167.2 Systems Programming 1
300069.2 Digital Signal Processing
300075.2 Instrumentation and Measurement
300009.2 Control Systems

Spring session

300149.1 Operating Systems
300053.2 Professional Practice
300010.2 Data Networks
300666.1 Advanced Engineering Topic 1

Industrial experience:

81999.1 Industrial Experience (Engineering)

Year 4 (Honours stream)

Autumn session

300092.1 Computer Architecture
300668.1 Advanced Engineering Thesis

Spring session

300667.1 Advanced Engineering Topic 2
300668.1 Advanced Engineering Thesis

Key Program - Electrical

KT3003.1

This program includes core subjects from all branches of electrical engineering. Graduates will work in the fields of electronic components, computers, electro-magnetics, power generation and distribution systems, power and control in public utilities, telecommunications, manufacturing, and electrical systems.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Full-time

Year 1

Autumn session

200237.1 Mathematics for Engineers 1
300464.1 Physics and Materials
300027.1 Engineering Computing
300674.1 Engineering, Design and Construction Practice

Spring session

200238.1 Mathematics for Engineers 2
300463.1 Fundamentals of Mechanics
300021.1 Electrical Fundamentals
300462.1 Engineering and Design Concepts

Year 2

Autumn session

200242.1 Mathematics for Engineers 3
300018.1 Digital Systems 1
300005.1 Circuit Theory
300025.2 Electronics

Spring session

300076.1 Microprocessor Systems
300057.2 Signals and Systems
300481.1 Engineering Electromagnetics
300052.1 Power and Machines

Year 3

Autumn session

300007.1 Communication Systems
300069.2 Digital Signal Processing
300071.1 Electrical Machines 1
300009.2 Control Systems

Spring session

300026.2 Energy Systems
300053.2 Professional Practice
300070.2 Electrical Drives
300666.1 Advanced Engineering Topic 1

Industrial experience:

81999.1 Industrial Experience (Engineering)

Year 4 (Honours stream)

Autumn session

300075.2 Instrumentation and Measurement
300668.1 Advanced Engineering Thesis

Spring session

300667.1 Advanced Engineering Topic 2
300668.1 Advanced Engineering Thesis

Key Program - Environmental

KT3004.1

This program provides an essential grounding in ecology, civil engineering and environmental management. Environmental engineers are concerned with ensuring a sustainable and better future for the community by developing and managing systems that integrate with and protect our environment. Graduates will work as environmental engineers in private, industrial, and mining companies; government departments; and city, municipal and shire councils.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Full-time

Year 1

Autumn session

200237.1 Mathematics for Engineers 1
300464.1 Physics and Materials
300027.1 Engineering Computing
300674.1 Engineering, Design and Construction Practice

Spring session

200238.1 Mathematics for Engineers 2
300463.1 Fundamentals of Mechanics
300021.1 Electrical Fundamentals
300462.1 Engineering and Design Concepts

Year 2

Autumn session

85012.2 Soil Engineering
300040.1 Mechanics of Materials
85009.2 Water Engineering
300482.1 Engineering Geology and Concrete Materials

Spring session

85006.2 Introduction to Structural Engineering
85024.1 Introduction to Environmental Chemistry
85003.1 Surveying for Engineers
85021.2 Environmental Engineering

Year 3

Autumn session

EY104A.1 Management of Aquatic Environments
300666.1 Advanced Engineering Topic 1

Choose one of

300479.1 Drainage Engineering
300486.1 Infrastructure Engineering

Choose one of

MG309A.1 Water and Waste Management
85020.2 Water Resources Engineering (UG)

Spring session

MG102A.2 Management Foundations
300053.2 Professional Practice
EY101A.1 Terrestrial Environment Management

Choose one of

EH321A.1 Air Quality Assessment & Management (UG)
300488.1 Numerical Methods in Engineering

Industrial experience:

81999.1 Industrial Experience (Engineering)

Year 4 (Honours stream)

Autumn session

300667.1 Advanced Engineering Topic 2
300668.1 Advanced Engineering Thesis

Spring session

300668.1 Advanced Engineering Thesis

Choose one of

EH321A.1 Air Quality Assessment & Management (UG)
300488.2 Numerical Methods in Engineering

Key Program - Robotics and Mechatronics

KT3005.1

This program provides the skills necessary for the design of smart machines of all types: cruise control in automobiles, pilotless spacecraft, automated factories and medical telerobotics. The course, accompanied by an extensive and integrated hands-on laboratory program, is essentially concerned with the design of intelligent mechanical systems and automation, and includes the study of robotics, computer control, automated manufacturing, microprocessor applications and machine design. Graduates in the program acquire the combined skills of mechanical and computer/electrical engineering that are needed in leading-edge industries such as aerospace systems, the car industry, automation and robotic applications, biomedical engineering, laser systems, and building materials manufacture.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Full-time

Year 1

Autumn session

200237.1 Mathematics for Engineers 1
300464.1 Physics and Materials
300027.1 Engineering Computing
300674.1 Engineering, Design and Construction Practice

Spring session

200238.1 Mathematics for Engineers 2
300463.1 Fundamentals of Mechanics
300021.1 Electrical Fundamentals
300462.1 Engineering and Design Concepts

Year 2

Autumn session

300035.2 Kinematics and Kinetics of Machines
300040.1 Mechanics of Materials
300005.1 Circuit Theory
300025.2 Electronics

Spring session

300044.1 Microcontrollers and PLCs
86301.2 Automated Manufacturing
300480.1 Dynamics of Mechanical Systems
300052.1 Power and Machines

Year 3

Autumn session

300018.1 Digital Systems 1
300071.1 Electrical Machines 1
300009.2 Control Systems

Choose one of

300056.2 Robotics
300043.2 Mobile Robotics

Spring session

300053.2 Professional Practice
300666.1 Advanced Engineering Topic 1

Choose one of

300478.1 Design of Servo-systems
300487.1 Mechatronic Design

And one elective

Industrial experience:

81999.1 Industrial Experience (Engineering)

Year 4 (Honours stream)

Autumn session

300667.1 Advanced Engineering Topic 2
300668.1 Advanced Engineering Thesis

Spring session

300668.1 Advanced Engineering Thesis

Choose one of

300478.1 Design of Servo-systems
300487.1 Mechatronic Design

Key Program - Telecommunications

KT3006.1

This program emphasises the hardware issues related to telecommunications, including digital systems, antenna design, communication hardware, data transfer and management and signal processing. Graduates will work in a variety of situations, such as communications in offices, communications between machines, and intercontinental communication issues. There is a high demand for telecommunications engineers as providers struggle to meet the rapid increase demand for both personal and business use of different modes of communications, including the mobile telephone and Internet.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Full-time

Year 1

Autumn session

200237.1 Mathematics for Engineers 1
300464.1 Physics and Materials
300027.1 Engineering Computing
300674.1 Engineering, Design and Construction Practice

Spring session

200238.1 Mathematics for Engineers 2
300463.1 Fundamentals of Mechanics
300021.1 Electrical Fundamentals
300462.1 Engineering and Design Concepts

Year 2

Autumn session

200242.1 Mathematics for Engineers 3
300018.1 Digital Systems 1
300005.1 Circuit Theory
300025.2 Electronics

Spring session

300076.1 Microprocessor Systems
300057.2 Signals and Systems
300481.1 Engineering Electromagnetics
300052.1 Power and Machines

Year 3

Autumn session

300007.1 Communication Systems
300069.2 Digital Signal Processing
300167.2 Systems Programming 1
300029.2 Engineering Visualization

Spring session

300065.2 Wireless Communications
300053.1 Professional Practice
300053.2 Professional Practice
300010.2 Data Networks
300666.1 Advanced Engineering Topic 1

Industrial experience:

81999.1 Industrial Experience (Engineering)

Year 4 (Honours stream)

Autumn session

300667.1 Advanced Engineering Topic 2
300668.1 Advanced Engineering Thesis

Spring session

300668.1 Advanced Engineering Thesis

Choose one of

300068.2 Communication Electronics
300489.1 Radio and Satellite Communication

Key Program - Environmental Management

KT3007.1

Environmental managers are concerned with ensuring the ecological sustainability of human development. History has shown that if we don't effectively manage our environment, we will degrade it – possibly to the point where it can no longer sustain us. The UWS Environmental Management program equips graduates with the problem solving skills to work with community members and professional practitioners to develop innovative policy and strategies that

address the increasingly complex causes of today's environmental problems, including urban development, global climate change, persistent organic pollutants, decreasing biodiversity and deteriorating air and water quality.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal
Hawkesbury Campus	Multi Modal

Unit Set Structure

Qualification for this award requires the successful completion of 240 credit points as per the recommended sequence below.

Recommended Sequence

Full-time

Year 1

Autumn session

300497.1 Professional Skills for Science
300221.1 Biology 1
300633.1 Management of Aquatic Environments
300642.1 Understanding Landscape

Spring session

200263.1 Biometry
300663.1 Resource Sustainability
300425.1 Introduction to Wildlife Studies

And one elective

Year 2

Autumn session

300664.1 Science in Society
300630.1 Environmental Regulations

And two electives

Spring session

300662.1 Research Methods
300624.1 Landuse and the Environment
300629.1 Environmental Planning

And choose one of the following two units:

300635.1 Water Quality Assessment and Management
BG103A.1 Building 2

Year 3

Autumn session

300659.1 Field Project 1
300284.2 Environmental Risk Management

And two electives

Spring session

300660.1 Field Project 2
300471.1 Urban Development Systems
300289.1 Regional Environmental Management

And one elective

Key Program - Environment and Health

KT3008.1

The air we breathe, the water we drink, the food we eat, and the places we live, work and play all have major impacts on our health and well being. Health scares such as bird flu, obesity, cancers and asthma have all been connected to our environmental conditions. The UWS Environment and Health program focuses on the application of science to the mitigation of human health impacts of global climate change through to the more localised issues of air and water quality, waste management, food security, environmental noise and healthy communities.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal
Hawkesbury Campus	Multi Modal

Unit Set Structure

Year 1

Autumn

300497.1 Professional Skills for Science
300221.1 Biology 1
300469.1 Introductory Chemistry
300633.1 Management of Aquatic Environments

Spring

200263.1 Biometry
300663.1 Resource Sustainability
300362.1 Environment and Health
300704.1 Healthy Built Environments

Year 2

Autumn session

300664.1 Science in Society
300331.2 General Microbiology
300626.1 Epidemiology

And one elective

Spring session

300662.1 Research Methods
300635.1 Water Quality Assessment and Management

And two electives

Year 3

Autumn session

300659.1 Field Project 1
300625.1 Noise Assessment

Choose one from the following two units:

300639.1 Food Safety
300500.1 Quality Assurance and Food Safety

And one elective

Spring session

300660.1 Field Project 2
300471.1 Urban Development Systems

And two electives

Key Program - Horticulture

KT3009.1

Horticulture is an exciting and diverse field encompassing science, technology, business, tourism and sociology. It impacts our lives through parks and gardens, organic farming, recreational landscape development, rural tourism and the use of plants in alternative therapies, and its practitioners play a key role in our country's economic future. The UWS Horticulture program embraces such areas as plant form and function, soils, landscape design, production systems, pest and disease control, people/plant relationships and business management. It offers a range of specialisations, underpinned by studies in biotechnology, molecular biology, genetic engineering, process engineering, botany, chemistry, microbiology and soil science.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

Year 1

Autumn

300497.1 Professional Skills for Science
300221.1 Biology 1
300502.1 Primary Production

Choose one of:

300642.1 Understanding Landscape
300469.1 Introductory Chemistry

Spring

200263.1 Biometry
300663.1 Resource Sustainability
300616.1 Crop Production

Choose one of:

300535.1 Soils
300222.1 Biology 2

Year 2

Autumn session

300664.1 Science in Society
300328.1 Botany
300452.1 Postharvest

And one elective

Spring session

300662.1 Research Methods
300501.1 Plant Diversity

And two Electives

Year 3

Autumn session

300659.1 Field Project 1
300336.1 Plant-Microbe Interactions

And two Electives

Spring session

300660.1 Field Project 2
300534.1 Analysis of Agricultural Supply Chains
300643.1 Plant Protection

And one Elective

Key Program - Agriculture

KT3010.1

Agriculture is an exciting, inter disciplinary area that is essential to feeding the growing world population. It involves the application of science and business skills to the management of over half of Australia's land for the production of food, feed, fibre and other goods by the systematic growing/harvesting/distribution of plants, animals and other life forms. It contributes to fundamental aspects of urban development and rural prosperity: sustainable resource usage, food security, social stability, and environmental protection for this and future generations. With its applied focus, the UWS Agriculture program prepares graduates for an extensive range of employment opportunities, with specialised knowledge and understanding of the balance between agriculture, landscape ecology, and business activities.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

Year 1

Autumn

300497.1 Professional Skills for Science
300221.1 Biology 1
300523.1 Agricultural Supply Chains
300502.1 Primary Production

Spring

200263.1 Biometry
300663.1 Resource Sustainability
300535.1 Soils
300616.1 Crop Production

Year 2

Autumn session

300664.1 Science in Society
300524.1 Agronomy

And two electives

Spring session

300662.1 Research Methods

Choose one of the following two units:

300530.1 Advances in Agronomy
300563.1 Animal Reproduction

And

300635.1 Water Quality Assessment and Management

And one elective

Year 3

Autumn session

300659.1 Field Project 1

Choose one of the following two units:

300427.1 Animal Production
300284.2 Environmental Risk Management

And two electives

Spring session

300660.1 Field Project 2
300534.1 Analysis of Agricultural Supply Chains
300624.1 Landuse and the Environment

And one elective

Key Program - Agricultural Business

KT3011.1

The agribusiness sector is one of Australia's largest and most vibrant industry sectors, and provides a broad range of exciting career opportunities. The Sydney basin is the focus for Australia's agricultural business. Local agribusiness companies enjoy major competitive advantages on a global scale, and Australia is recognised as having one of the most sophisticated agricultural industries in the world, with extensive trade and investment alliances. Based at the intersection between production and business, the UWS Agricultural Business program provides a critical stepping-stone to a varied career, and has been developed to enable graduates to service this diverse and essential sector of the economy with its innovative mix of science, production and business studies, and a focus on agricultural supply chains.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

Year 1

Autumn

300497.1 Professional Skills for Science
300221.1 Biology 1
200083.1 Marketing Principles
300523.1 Agricultural Supply Chains

Spring

200263.1 Biometry
300663.1 Resource Sustainability
200525.1 Principles of Economics
300616.1 Crop Production

Year 2

Autumn session

300664.1 Science in Society
300452.1 Postharvest

And two electives

Spring session

300662.1 Research Methods

Two Business Specialisation Units
And one elective

Year 3

Autumn session

300659.1 Field Project 1
300524.1 Agronomy
300284.2 Environmental Risk Management

And one elective

Spring session

300660.1 Field Project 2

Choose one from the following two units:

300534.1 Analysis of Agricultural Supply Chains

Business Specialisation Unit
And two electives

Key Program - Food Systems

KT3012.1

The food industry is vital to Australia in terms of profitability, exports and jobs growth, with lots of employment opportunities. The Food Systems program covers the value chain management of the food industry, from farm to fork. The program fills a critical niche in our increasingly complex food provision systems, by addressing food supply chains, production processes and business elements. Graduates will develop a grounding in food production from harvest, food possessing technologies through to the consumer. Training will be underpinned by developing an appreciation for the management and control of a safe food supply. There will be opportunities for sub-majors in management or marketing. The program is set within a strong environmental framework of learning, enabling the graduates to be equipped to deal with new challenges in a changing world. The course has strong links with the food industry and unique well equipped facilities, including a food processing pilot plant, which gives hands-on experience with equipment similar to that found in industry.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

Year 1

Autumn session

300497.1 Professional Skills for Science
300221.1 Biology 1
300498.1 Food Science 1

Choose one of:

300469.1 Introductory Chemistry
300502.1 Primary Production

Spring session

200263.1 Biometry
300663.1 Resource Sustainability
300499.1 Food Science 2

Choose one of:

300616.1 Crop Production
300342.1 Wines and their Appreciation

Year 2

Autumn session

300664.1 Science in Society
300452.1 Postharvest

Choose one of:

300300.1 Microbiology 1
300331.2 General Microbiology

And one elective

Spring session

300662.1 Research Methods
300636.1 Food Processing and Analysis

Choose one of:

200571.1 Management Dynamics
200083.1 Marketing Principles

And one elective

Year 3

Autumn session

300659.1 Field Project 1
300701.1 Food Quality Assurance

And two electives

Spring session

300660.1 Field Project 2
300641.1 Packaging Science and Technology

And two electives

Key Program - Animal Science

KT3013.1

Interactions between people and animals are increasing as we become more dependent on animals for companionship and food production, and strive to understand the greater pressures being placed on our unique native wildlife. The UWS program in Animal Science embraces a unique hands on approach to understanding the interactions between animals and their environments, and combines the fields of animal behaviour and anthrozoology to explore and enhance the quality of life of wild, captive and domesticated animals. It is underpinned by on campus access to animal facilities including reptiles, small marsupials, horses, sheep, cattle and deer linked with off campus animal professionals and organisations such as national parks, wildlife parks, zoos, farms and horse studs.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

Year 1

Autumn

300497.1 Professional Skills for Science
300221.1 Biology 1

300560.1 Introduction to Animal Science
300426.1 Human Animal Interactions

Spring

200263.1 Biometry
300663.1 Resource Sustainability
300421.2 Animal Science
300425.1 Introduction to Wildlife Studies

Year 2

Autumn

300664.1 Science in Society
300562.1 Animal Nutrition and Feeding

And two electives

Spring

300662.1 Research Methods
300424.1 Animal Health and Welfare
300563.1 Animal Reproduction

And one elective

Year 3

Autumn

300659.1 Field Project 1
300427.1 Animal Production

And two electives

Spring

300660.1 Field Project 2
300564.1 Animal Behaviour
300470.1 Vertebrate Biodiversity

And one elective

Key Program - Nature Conservation

KT3014.1

Nature conservation is shaped by the interplay of diverse political, cultural, economic, scientific and technological forces across Australia and internationally. With the increasing exploitation of the world's non-renewable resources and the rapidly unfolding degradation of the planet's natural systems there is an urgent need to conserve those wild places we have left and begin to restore the damage man has done. The UWS program in Nature Conservation provides a deep understanding of sustainable ecosystems management, policy formulation and environmental advocacy underpinned by a solid scientific foundation.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

Year 1

Autumn

300497.1 Professional Skills for Science
300221.1 Biology 1
300633.1 Management of Aquatic Environments
300642.1 Understanding Landscape

Spring

200263.1 Biometry
300663.1 Resource Sustainability
300425.1 Introduction to Wildlife Studies
300631.1 Indigenous Landscape

Year 2

Autumn

300664.1 Science in Society
300632.1 Living in Country

And two electives

Spring

300662.1 Research Methods
300563.1 Animal Reproduction
300624.1 Landuse and the Environment

And one elective

Year 3

Autumn

300659.1 Field Project 1
300284.2 Environmental Risk Management

And two electives

Spring

300660.1 Field Project 2
300465.1 Aquatic Ecology
300470.1 Vertebrate Biodiversity

And one elective

Key Program - Agricultural Science

KT3015.1

This key program equips graduates with specialised knowledge and understanding of agronomy, animal science and soil science underpinned by a sound background in biology, chemistry and biometry. Graduates will understand how agriculture impacts on the structure and function of production ecosystems in the context of nutrient, water and energy flows, carbon sequestration and use of introduced and genetically modified organisms. There is an emphasis on developing field and laboratory skills related to the major

study areas that will prepare students for technical, production, research or advisory careers.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

Year 1

Autumn session

300221.1 Biology 1
300497.1 Professional Skills for Science
300502.1 Primary Production

Choose one of:

300469.1 Introductory Chemistry
300224.2 Chemistry 1

Spring session

300222.1 Biology 2
200263.1 Biometry
300421.2 Animal Science
300535.1 Soils

Year 2

Autumn session

300300.1 Microbiology 1
300562.1 Animal Nutrition and Feeding
300619.1 Ecology of Production

And one elective

Spring session

300563.1 Animal Reproduction
300333.1 Introductory Plant Physiology

And two electives

Year 3

Autumn session

300427.1 Animal Production
300524.1 Agronomy

One Level 3 elective
And one elective

Spring session

300564.1 Animal Behaviour
300334.1 Invertebrate Biology
300530.1 Advances in Agronomy

And one Level 3 elective

Key Program - Animal Science

KT3016.1

The key program in Animal Science recognises the increased demand for knowledge of how to best care for and protect our animals, including scientific knowledge of companion animals, production animals and their products, as well as knowledge related to our native animals. This program will allow students to develop in depth scientific understanding of how animals function; from the physiology and biochemistry of tissues and major organ systems down to structure and function of biomolecules and cells. The program gives particular emphasis to the study of physiology, growth, endocrinology, reproduction, genetics, nutrition, microbial interactions and immunology. It's also concerned with how these processes may be optimised to improve animal productivity, health and welfare.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

Year 1

Autumn session

300221.1 Biology 1
300224.2 Chemistry 1
300560.1 Introduction to Animal Science
300426.1 Human Animal Interactions

Spring session

300222.1 Biology 2
200263.1 Biometry

Choose one of:

300225.2 Chemistry 2
300425.1 Introduction to Wildlife Studies

Choose one of:

300753.1 Introduction to Human Physiology
300421.2 Animal Science

Year 2

Autumn session

300219.1 Biochemistry 1
300300.1 Microbiology 1
300562.1 Animal Nutrition and Feeding

And one elective

Spring session

300424.1 Animal Health and Welfare

Choose one of:

300623.1 Genetics
300220.1 Biochemistry 2

And two electives

Year 3

Autumn session

300234.1 Molecular Biology
300427.1 Animal Production

Choose one of:

300665.1 Wildlife 2
300229.1 Immunology

And one elective

Spring session

300408.1 Mammalian Cell Biology and Biotechnology
300470.1 Vertebrate Biodiversity

One Level 3 elective
And one elective

Key Program - Biological Science

KT3017.1

Biological Science focuses on the areas of biology that are most relevant to industry and research: biochemistry, microbiology and molecular biology. Other areas of study include anatomy and physiology, environmental science, biotechnology, human biology and plant biology.

Offer

Campus	Mode
Campbelltown Campus	Multi Modal
Hawkesbury Campus	Multi Modal
Parramatta Campus	Multi Modal

Unit Set Structure

Year 1

Autumn session

Choose one of:

300221.1 Biology 1
300539.1 Biodiversity

Choose one of:

300224.2 Chemistry 1
300554.1 Principles of Chemistry

Choose one of:

200191.3 Fundamentals of Mathematics
300672.1 Mathematics 1A
200263.1 Biometry

One Level 1 unit from the Bachelor of Science Unit Pool

Spring session

Choose one of:

300222.1 Biology 2
300543.1 Cell Biology

Choose one of:

300225.2 Chemistry 2
300550.1 Medicinal Chemistry

And two electives

Year 2

Autumn session

300300.1 Microbiology 1

Choose one of:

300219.1 Biochemistry 1
300555.1 Proteins and Genes

One Level 2 unit from the Bachelor of Science Unit Pool
And one elective

Spring session

300321.1 Microbiology 2

Choose one of:

300220.1 Biochemistry 2
300548.1 Human Metabolism and Disease

One Level 2 unit from the Bachelor of Science Unit Pool
And one elective

Year 3

Autumn session

Two Level 3 Biology units from the Bachelor of Science Unit Pool
One Level 3 elective
And one elective

Spring session

Two Level 3 Biology units from the Bachelor of Science Unit Pool
One Level 3 elective
And one elective

Key Program - Biotechnology

KT3018.1

Biotechnology harnesses microbial, plant and animal cells to produce useful goods and services, including food, drink, medicines and chemicals. Biotechnology also plays an important role in dealing with waste materials, the removal of pollutants from the environment, and microbial control of plants, pests and diseases. This degree provides multidisciplinary knowledge, practical skills and a wide range of real world applications.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

Year 1

Autumn session

300221.1 Biology 1
300224.2 Chemistry 1
300558.1 Physics 1
300503.1 Introduction to Biotechnology

Spring session

300222.1 Biology 2
300225.2 Chemistry 2

Choose one of:

200263.1 Biometry
200191.3 Fundamentals of Mathematics
300672.1 Mathematics 1A

And one elective

Year 2

Autumn session

300219.1 Biochemistry 1
300300.1 Microbiology 1

And two electives

Spring session

300321.1 Microbiology 2
300646.1 Principles of Biotechnology

And two electives

Year 3

Autumn session

300504.1 Fermentation Science
300234.1 Molecular Biology
300621.1 Plant Biotechnology

And one elective

Spring session

300647.1 Environmental Biotechnology
300648.1 Food and Pharmaceutical Biotechnology

One Level 3 elective
And one elective

Key Program - Chemistry

KT3019.1

The Chemistry key program consists of core studies in analytical, inorganic, organic and physical chemistry. A major in geochemistry will prepare you for a career in the minerals and mining industries. A sub-major in biochemistry or microbiology will prepare you for a career in the pharmaceutical, health or food industries.

Offer

Campus	Mode
Campbelltown Campus	Multi Modal
Parramatta Campus	Multi Modal

Unit Set Structure

Year 1

Autumn session

300558.1 Physics 1

Choose one of:

300224.2 Chemistry 1
300554.1 Principles of Chemistry

Choose one of:

200191.3 Fundamentals of Mathematics
300672.1 Mathematics 1A

And one Level 1 unit from the Bachelor of Science Unit Pool

Spring session

Choose one of:

300225.2 Chemistry 2
300550.1 Medicinal Chemistry

One Level one unit from the Bachelor of Science Unit Pool
And two electives

Year 2

Autumn session

300297.1 Analytical Chemistry 2

Choose one of:

300301.1 Organic Chemistry 2
300553.1 Molecules of Life: Synthesis and Reactivity

And two electives

Spring session

Choose one of:

300230.1 Inorganic Chemistry 2
300545.1 Coordination Chemistry

Choose one of:

300236.1 Physical Chemistry 2
300540.1 Biomolecular Dynamics

And two electives

Year 3

Autumn session

Choose one of:

300298.1 Analytical Chemistry 3
300537.1 Advanced Chemical Analysis

Choose one of:

300235.1 Organic Chemistry 3
300546.1 Drug Design and Synthesis

One Level 3 elective

And one elective

Spring session

Choose one of:

300231.1 Inorganic Chemistry 3
300538.1 Advanced Inorganic Chemistry

Choose one of:

300303.1 Physical Chemistry 3
300475.1 Molecular Pharmacokinetics

Choose one of:

300645.1 Science Research Project 2
300656.1 Laboratory Quality Management
300542.1 Biomolecular Science Project

And one elective

Key Program - Environmental Science

KT3020.1

Environmental Science provides a strong background in key analytical techniques that have contemporary applications such as the handling and interpretation of data and the modelling of real world problems such as global warming. Students may specialise in mathematics and/or statistics as well as taking units from other science/ computing related areas or from areas such as marketing, accounting, arts and the social sciences. This will allow a wide range of career options in commercial and government institutions.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

Year 1

Autumn session

300221.1 Biology 1
300633.1 Management of Aquatic Environments
300642.1 Understanding Landscape

Choose one of:

300224.2 Chemistry 1
300469.1 Introductory Chemistry

Spring session

300225.2 Chemistry 2
300222.1 Biology 2
200263.1 Biometry
300663.1 Resource Sustainability

Year 2

Autumn session

300634.1 Ecology
300300.1 Microbiology 1

Choose one of:

300493.1 Forensic and Environmental Analysis
101344.1 Environmental Area Mapping

And one elective

Spring session

300467.1 Green Chemistry 1
300647.1 Environmental Biotechnology
300624.1 Landuse and the Environment

And one elective

Year 3

Autumn session

300617.1 Conservation Biology
300468.1 Green Chemistry 2

One Level 3 elective

And one elective

Spring session

300465.1 Aquatic Ecology
300630.1 Environmental Regulations

One Level 3 elective

And one elective

Key Program - Food Science

KT3021.1

The Food Science key program recognises that the manufacture of food is vital to Australia in terms of investment, export income and jobs growth. Within this framework there is a strong demand for practical food scientists who have skills in chemistry and microbiology and who can apply this knowledge to food processing, ensuring a safe, nutritious and appetising food supply. The course has strong food industry links and well-equipped

facilities, which include a food processing pilot plant offering hands-on experience using industry standard equipment.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

Year 1

Autumn session

300221.1 Biology 1
300498.1 Food Science 1

Choose one of:

300224.2 Chemistry 1
300469.1 Introductory Chemistry

Choose one of:

300558.1 Physics 1
200191.3 Fundamentals of Mathematics
200263.1 Biometry

Spring session

300225.2 Chemistry 2
300499.1 Food Science 2
300616.1 Crop Production

And one elective

Year 2

Autumn session

300300.1 Microbiology 1
300658.1 Endocrinology and Metabolism
300452.1 Postharvest
300649.1 Nutrition and Health 1

Spring session

300636.1 Food Processing and Analysis

Choose one of:

300638.1 Experimental Foods
300639.1 Food Safety

And two electives

Year 3

Autumn session

300637.1 Food Product Development Practicum
300701.1 Food Quality Assurance

Choose one of:

300307.1 Analytical Microbiology
300493.1 Forensic and Environmental Analysis

And one elective

Spring session

300641.1 Packaging Science and Technology
300656.1 Laboratory Quality Management

One Level 3 elective
And one elective

Key Program - Mathematical Science

KT3022.1

Specialise in mathematics, statistics or a combination of both. You'll develop skills that allow you to model and solve real world problems using mathematical techniques. Minor studies can be completed in science related areas such as computer science and the physical sciences or in areas such as marketing, management, accounting, economics and finance, arts, humanities and social sciences.

Offer

Campus	Mode
Campbelltown Campus	Multi Modal
Parramatta Campus	Multi Modal

Unit Set Structure

Units may be offerred in different semesters at different campuses.

Year 1

200025.1 Discrete Mathematics
300672.1 Mathematics 1A
300673.1 Mathematics 1B
300580.1 Programming Fundamentals

Choose one of:

200192.1 Statistics for Science
200263.1 Biometry

Two Level 1 units from the Bachelor of Science Unit Pool
And one elective

Year 2

200028.2 Advanced Calculus
200027.1 Linear Algebra

Choose one of:

300606.1 Foundations of Statistical Modelling and Decision Making
200042.2 Introduction to Operations Research

Choose three of:

200033.2 Applied Statistics
200030.1 Differential Equations
300606.1 Foundations of Statistical Modelling and Decision Making
200042.2 Introduction to Operations Research
200029.1 Numerical Analysis

And two electives

Year 3

200045.1 Quantitative Project

Choose five of:

200193.1 Abstract Algebra
200023.1 Analysis
200036.2 Data Mining and Visualisation
200024.1 Mathematical Finance
200022.1 Mathematical Modelling
300670.1 Optimisation Techniques
300671.1 Principles and Practice of Decision Making
200040.1 Probability & Stochastic Processes
200037.1 Regression Analysis & Experimental Design
200044.1 Simulation Techniques
200039.1 Surveys and Multivariate Analysis
200038.1 Time Series and Forecasting

And two electives

Key Program - Nanotechnology

KT3023.1

The Nanotechnology key program prepares you for a cutting-edge career, giving you the opportunity to revolutionise medicine, industry, electronics, defence, aerospace, communications, law enforcement, energy production and environmental sustainability. It combines real-life nanotechnology innovations, advanced theory in virtually all the sciences, and the opportunity to specialise in Nanophysics, Nanochemistry, Nanobiology, Materials Science or Nanoengineering.

Offer

Campus	Mode
Campbelltown Campus	Multi Modal

Unit Set Structure

Year 1

Autumn session

300554.1 Principles of Chemistry
300672.1 Mathematics 1A
300558.1 Physics 1
300705.1 Nanotechnology

Spring session

300550.1 Medicinal Chemistry
300673.1 Mathematics 1B
300559.1 Physics 2
300543.1 Cell Biology

Year 2

Autumn session

300413.1 Applied Instrumentation in Nanotechnology
300540.1 Biomolecular Dynamics
300545.1 Coordination Chemistry
300555.1 Proteins and Genes

Spring session

300553.1 Molecules of Life: Synthesis and Reactivity
300590.1 Nanochemistry

And two electives

Year 3

Autumn session

300414.1 Biodevices
300419.1 Quantum Properties of Chemical Systems

One Level 3 elective
And one elective

Spring session

300415.1 Fabrication of Nanostructured Devices

One Nanotechnology Alternate Unit
One Level 3 elective
And one elective

Nanotechnology Alternate Units

300557.1 Molecular Spectroscopy
300556.1 Analytical Protein Science
300537.1 Advanced Chemical Analysis
300544.1 Cell Signalling
300757.1 Molecular Biology of the Immune System
300538.1 Advanced Inorganic Chemistry
200022.1 Mathematical Modelling
300546.1 Drug Design and Synthesis
300324.1 Pharmacological Chemistry
300475.1 Molecular Pharmacokinetics

Key Program - Nutrition and Food

KT3024.1

Healthy eating is a vital part of good health. Nutrition and Food covers a range of subjects from the nutritional benefits of particular foods to food safety and medical conditions affected by diet, such as diabetes and heart disease.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

Year 1

Autumn session

300221.1 Biology 1
300498.1 Food Science 1

Choose one of:

300469.1 Introductory Chemistry
300224.2 Chemistry 1

Choose one of:

300558.1 Physics 1
200191.3 Fundamentals of Mathematics
200263.1 Biometry
200192.1 Statistics for Science

Spring session

300225.2 Chemistry 2
300499.1 Food Science 2

Choose one of:

300753.1 Introduction to Human Physiology
300620.1 Human Physiology 1

And one elective

Year 2

Autumn session

300300.1 Microbiology 1
300649.1 Nutrition and Health 1

Choose one of:

300219.1 Biochemistry 1
300658.1 Endocrinology and Metabolism

And one elective

Spring session

300650.1 Nutrition and Health 2
300638.1 Experimental Foods

And two electives

Year 3

Autumn session

300637.1 Food Product Development Practicum
300360.1 Consumer Issues in Nutrition

Choose one of:

300652.1 Nutrition and Health Biochemistry
300622.1 Human Physiology 2

And one elective

Spring session

300653.1 Applied Nutrition
300651.1 Nutrition and Community Health
300640.1 Culinary Studies

And one elective

Key Program - Plant Science

KT3025.1

At UWS, Plant Science includes how plants grow, what they need for growth, how they respond to their environment, how they evolved, and more. Plants are studied at various levels, from the chemical reactions and molecules fundamental to all life, to the role plants play in ecosystems. There is a focus on the imperative of agriculture's sustainability both in economic and in environmental terms.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

Year 1

Autumn session

300221.1 Biology 1
300224.2 Chemistry 1
300497.1 Professional Skills for Science
300642.1 Understanding Landscape

Spring session

300222.1 Biology 2
300225.2 Chemistry 2
200263.1 Biometry
300663.1 Resource Sustainability

Year 2

Autumn session

300219.1 Biochemistry 1
300328.1 Botany
300634.1 Ecology

And one elective

Spring session

300220.1 Biochemistry 2
300333.1 Introductory Plant Physiology
300501.1 Plant Diversity

And one elective

Year 3

Autumn session

300621.1 Plant Biotechnology
300336.1 Plant-Microbe Interactions

One Level 3 elective
And one elective

Spring session

300327.1 Australian Plants
300643.1 Plant Protection

One Level 3 elective
And one elective

Major - Education Studies

M1112.1

Education has a key role to play in bridging the gap between social advantage and disadvantage, in transforming the lives of individuals and their families, and building capacity within communities. The Education Studies Major comprises a foundation pool of units which addresses key issues in contemporary educational thinking and practice, and provides a basis for students to enhance their critical thinking of, and understanding about, Education. Students enrolled in course 1652 Bachelor of Arts (Pathway to Teaching-Secondary), and undertaking a Key Program of Humanities (Majoring in English,Text and Writing, or Majoring in History, Politics and Philosophy), or undertaking the Key Program of Languages, may choose to structure their elective units to complete an Education Studies Major. Students must satisfactorily complete 80 credit points of units from the recommended pool, with no more than 20 credit points at Level 1.

Offer

Campus	Mode
Bankstown Campus	Multi Modal
Penrith Campus	Multi Modal

Unit Set Structure

Secondary Teaching Pathway

For students enrolled in course 1652 Bachelor of Arts (Pathway to Teaching Secondary)

The major must contain no more than 20 credit points at Level 1.

Level 1 Units

100309.1 Contemporary Perspectives of Childhoods
101116.1 Issues in Aboriginal Education
101259.1 Learning and Creativity
101428.1 Multiliteracies

Level 2 Units

101263.1 Education and Transformation
101114.1 Ethics in Education
101119.1 Policy, Politics and Educational Futures

Level 3 Units

101117.1 Learning through Community Service
101278.1 Literacy for Social Action
101279.1 Technology, Equity and Education: Local and Global

Unit Set Structure

Non-teaching Pathway

For all other students undertaking the elective Major in Education Studies

Students must complete 80 credit points from the following pool, with no more than 50 credit points at Level 1.

100309.1 Contemporary Perspectives of Childhoods
101114.1 Ethics in Education
101263.1 Education and Transformation
101116.1 Issues in Aboriginal Education
101259.1 Learning and Creativity
101117.1 Learning through Community Service
101278.1 Literacy for Social Action
101428.1 Multiliteracies
101119.1 Policy, Politics and Educational Futures
101279.1 Technology, Equity and Education: Local and Global

Major - Computer Systems

M3000.1

This major is only available to students enrolled in the Bachelor of Computing or Bachelor of Information and Communications Technology courses.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete the following six compulsory units

300103.1 Data Structures and Algorithms
300096.3 Computer Organisation
300092.1 Computer Architecture
300167.2 Systems Programming 1
300149.1 Operating Systems
300121.1 Formal Languages and Automata

And choose two of

300128.2 Information Security
300165.1 Systems Administration Programming
300368.1 Intelligent Systems
300093.1 Computer Graphics

Major - Advanced Programming

M3001.1

This major is only available to students enrolled in the Bachelor of Computing or Bachelor of Information and Communications Technology courses.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete the following six compulsory units

300103.1	Data Structures and Algorithms
300167.1	Systems Programming 1
300404.1	Formal Software Engineering
300168.1	Systems Programming 2
300149.1	Operating Systems
300096.3	Computer Organisation

And choose two of

300130.1	Internet Programming
300115.1	Distributed Systems and Programming
300165.1	Systems Administration Programming

Major - Information Technology

M3002.1

This major is available to all students except those enrolled in the Networks or Information Systems Key Programs within the Bachelor of Computing course, and the Bachelor of Information and Communications Technology course.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete the following six compulsory units

300580.1	Programming Fundamentals
300585.1	Systems Analysis and Design
300582.1	Technologies for Web Applications
300583.1	Web Systems Development
300565.1	Computer Networking
300095.2	Computer Networks and Internets

And choose one of

300575.1	Networked Systems Design
300166.1	Systems and Network Management

And choose one of

300104.1	Database Design and Development
300570.2	Human-Computer Interaction
300569.1	Computer Security

Major - Web Systems Development

M3003.1

This major is available to all students except those enrolled in the Bachelor of Computing, Bachelor of Computer Science or the Bachelor of Information and Communications Technology courses.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete the following eight units

300580.1	Programming Fundamentals
300585.1	Systems Analysis and Design
300582.1	Technologies for Web Applications
300104.1	Database Design and Development
300570.2	Human-Computer Interaction
300583.1	Web Systems Development
300111.1	Developing Web Applications with XML
300572.1	Information Systems Deployment and Management

Major - Health Informatics

M3004.1

This major is available to all students except those enrolled in the Health Informatics key program within the Bachelor of Computing course.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete the following six compulsory units

300566.1	Introduction to Health Informatics
300580.1	Programming Fundamentals
300104.1	Database Design and Development
300582.1	Technologies for Web Applications
300567.1	e-Health
300568.1	Services Computing in Healthcare

And choose one of

200192.1	Statistics for Science
300585.1	Systems Analysis and Design

And choose one of:

200036.2	Data Mining and Visualisation
300570.2	Human-Computer Interaction

Note: Students in the Bachelor of Computing (Information Systems) are required to select 300585 Systems Analysis and Design in order to comply with course major guidelines.

Major - Entertainment Computing

M3005.1

This major is available to all students

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete the following eight units

300580.1 Programming Fundamentals
300585.1 Systems Analysis and Design
300491.1 Games Technology
300578.1 Professional Development
300565.1 Computer Networking
300104.1 Database Design and Development
300093.1 Computer Graphics
300492.1 Games Theory and Design

Major - Environmental Health Management

M3006.1

Students undertaking an Environment and Health course may complement their studies by completing the major in Environmental Health Management, which is accredited through the Australian Institute for Environmental Health. This choice will strengthen and broaden their opportunities for career advancement.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal
Hawkesbury Campus	Multi Modal

Unit Set Structure

Students must complete eight units as follows:

Autumn session

300625.1 Noise Assessment
300626.1 Epidemiology
300284.2 Environmental Risk Management

Spring session

300628.1 Air Quality Management
300630.1 Environmental Regulations
300627.1 Toxicology
300629.1 Environmental Planning

Quarter 3 External

300702.1 Disaster and Emergency Management

Major - Biochemistry and Molecular Biology

M3011.1

This major is available to all students.

Offer

Campus	Mode
Campbelltown Campus	Multi Modal
Hawkesbury Campus	Multi Modal
Parramatta Campus	Multi Modal

Unit Set Structure

Students must complete eight units.

Level 1

Choose one of

300221.1 Biology 1
300543.1 Cell Biology

Choose one of

300224.2 Chemistry 1
300554.1 Principles of Chemistry

Choose one of

300225.2 Chemistry 2
300550.1 Medicinal Chemistry

Level 2

Choose one of

300219.1 Biochemistry 1
300555.1 Proteins and Genes

Choose one of

300220.1 Biochemistry 2
300548.1 Human Metabolism and Disease

Level 3

Choose one of

300234.1 Molecular Biology
300549.1 Human Molecular Biology

And choose two of

300610.1 Biotechnology
300544.1 Cell Signalling
300229.1 Immunology
300408.1 Mammalian Cell Biology and Biotechnology
300407.1 Mammalian Molecular Medicine
300757.1 Molecular Biology of the Immune System

Major - Conservation Biology

M3012.1

This major is available to all students.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

Students must complete eight units.

Level 1

300222.1 Biology 2

Level 2

300634.1 Ecology
300623.1 Genetics
300328.1 Botany

Level 3

300465.1 Aquatic Ecology
300327.1 Australian Plants
300617.1 Conservation Biology
300470.1 Vertebrate Biodiversity

Major - General Biology

M3013.1

This major is available to all students.

Offer

Campus	Mode
Campbelltown Campus	Multi Modal
Hawkesbury Campus	Multi Modal
Parramatta Campus	Multi Modal

Unit Set Structure

Students must complete eight units.

Level 1

Choose one of

300221.1 Biology 1
300543.1 Cell Biology

Choose one of

300222.1 Biology 2
300539.1 Biodiversity

Choose six of the following, including at least three Level 3 units.

Level 1

Choose one of

300224.2 Chemistry 1
300554.1 Principles of Chemistry
300225.2 Chemistry 2
300550.1 Medicinal Chemistry

Level 2

300608.1 Animal Physiology
300328.1 Botany
300634.1 Ecology
300658.1 Endocrinology and Metabolism
300228.1 Human Nutrition
300300.1 Microbiology 1
300321.1 Microbiology 2
300609.1 Plant Physiology

Choose one of

300219.1 Biochemistry 1
300555.1 Proteins and Genes

Choose one of

300220.1 Biochemistry 2
300548.1 Human Metabolism and Disease

Choose one of

300623.1 Genetics
300547.1 Human Genetics

NOTE: 300658 - Endocrinology and Metabolism is not to be counted with 300219 - Biochemistry 1, 300555 - Proteins and Genes, 300220 - Biochemistry 2 or 300548 - Human Metabolism and Disease.

Level 3

300556.1 Analytical Protein Science
300307.1 Analytical Microbiology
300465.1 Aquatic Ecology
300327.1 Australian Plants
300610.1 Biotechnology
300544.1 Cell Signalling
300617.1 Conservation Biology
300757.1 Molecular Biology of the Immune System
300607.1 Environmental Biology
300647.1 Environmental Biotechnology
300229.1 Immunology
300656.1 Laboratory Quality Management
300408.1 Mammalian Cell Biology and Biotechnology
300407.1 Mammalian Molecular Medicine
300749.1 Medical Microbiology
300652.1 Nutrition and Health Biochemistry
300470.1 Vertebrate Biodiversity

Choose one of

300234.1 Molecular Biology
300549.1 Human Molecular Biology

Major - Microbiology

M3014.1

This major is available to all students.

Offer

Campus	Mode
Campbelltown Campus	Multi Modal
Hawkesbury Campus	Multi Modal
Parramatta Campus	Multi Modal

Unit Set Structure

Students must complete eight units.

Level 1

Choose one of

300221.1 Biology 1
300543.1 Cell Biology

Choose one of

300224.2 Chemistry 1
300554.1 Principles of Chemistry
300225.2 Chemistry 2
300550.1 Medicinal Chemistry

Level 2

300300.1 Microbiology 1
300321.1 Microbiology 2

Choose one of

300219.1 Biochemistry 1
300555.1 Proteins and Genes

Level 3

Choose three of

300307.1 Analytical Microbiology
14455.1 Biotechnology
300749.1 Medical Microbiology

And

300234.1 Molecular Biology

or

300549.1 Human Molecular Biology

Major - Plant Science

M3015.1

This major is available to all students.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

Students must complete eight units.

Level 1

300221.1 Biology 1
300222.1 Biology 2

Level 2

300328.1 Botany
300333.1 Introductory Plant Physiology

Level 3

300336.1 Plant-Microbe Interactions
300334.1 Invertebrate Biology
300327.1 Australian Plants
300621.1 Plant Biotechnology

Major - Animal Science

M3016.1

This major is not available to students who complete the Bachelor of Science (Animal Science).

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

Students must complete eight units from the following, including at least three Level 3 units:

Level 1

300560.1 Introduction to Animal Science
300425.1 Introduction to Wildlife Studies

Level 2

300562.1 Animal Nutrition and Feeding
300563.1 Animal Reproduction
300219.1 Biochemistry 1
300623.1 Genetics
300620.1 Human Physiology 1

Level 3

300427.1 Animal Production
300564.1 Animal Behaviour
300334.1 Invertebrate Biology
300470.1 Vertebrate Biodiversity

Major - Nutrition and Physiology

M3017.1

This major is available to all students.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

Students must complete eight units.

Level 1

Choose one of

300221.1 Biology 1
300222.1 Biology 2

Level 2

300620.1 Human Physiology 1
300649.1 Nutrition and Health 1
300650.1 Nutrition and Health 2

Choose one of

300219.1 Biochemistry 1
300658.1 Endocrinology and Metabolism

Level 3

300622.1 Human Physiology 2
300652.1 Nutrition and Health Biochemistry

Choose one of

300653.1 Applied Nutrition
300360.1 Consumer Issues in Nutrition
300229.1 Immunology

Major - Biotechnology

M3018.1

This major is not available to students who complete the Bachelor of Science (Biotechnology).

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

Students must complete eight units.

Level 1

300221.1 Biology 1

Choose one of

300224.2 Chemistry 1
300225.2 Chemistry 2

Level 2

300219.1 Biochemistry 1
300300.1 Microbiology 1
300321.1 Microbiology 2
300646.1 Principles of Biotechnology

Level 3

Choose three of

300610.1 Biotechnology
300647.1 Environmental Biotechnology
300504.1 Fermentation Science
300648.1 Food and Pharmaceutical Biotechnology
300234.1 Molecular Biology
300621.1 Plant Biotechnology

Major - Chemistry

M3019.1

This major is not available to students who complete the Bachelor of Science (Chemistry).

Offer

Campus	Mode
Campbelltown Campus	Multi Modal
Parramatta Campus	Multi Modal

Unit Set Structure

Students must complete eight units from the following, including at least three Level 3 units.

Level 1

Choose one of

300224.2 Chemistry 1
300554.1 Principles of Chemistry

Choose one of

300225.2 Chemistry 2
300550.1 Medicinal Chemistry

Choose at least three of

Level 1

300672.1 Mathematics 1A
200191.3 Fundamentals of Mathematics
300497.1 Professional Skills for Science

Level 2

300297.1 Analytical Chemistry 2

or

300493.1 Forensic and Environmental Analysis
300230.1 Inorganic Chemistry 2

or

300545.1 Coordination Chemistry
300301.1 Organic Chemistry 2

or

300553.1 Molecules of Life: Synthesis and Reactivity
300236.1 Physical Chemistry 2

or

300540.1 Biomolecular Dynamics

Level 3

300298.1 Analytical Chemistry 3
300231.1 Inorganic Chemistry 3

or

300538.1 Advanced Inorganic Chemistry
300235.1 Organic Chemistry 3

or

300546.1 Drug Design and Synthesis
300303.1 Physical Chemistry 3

or

300475.1 Molecular Pharmacokinetics

NOTE: Students cannot count both 300672 - Mathematics 1A and 200191 - Fundamentals of Mathematics towards this major.

And choose up to three of

Level 3

300218.1 Applied Aspects of Inorganic Chemistry
300656.1 Laboratory Quality Management
300557.1 Molecular Spectroscopy
300645.1 Science Research Project 2

or

300542.1 Biomolecular Science Project

Major - Geochemistry

M3020.1

This major is available to all students.

Offer

Campus	Mode
Parramatta Campus	Multi Modal

Unit Set Structure

Students must complete eight units.

Level 1

300224.2 Chemistry 1
300232.1 Introduction to Earth Sciences
300613.1 Introductory Geochemistry: Earth, Resources and Environments

Level 2

300611.1 Chemical Mineralogy
300612.1 Geochemical Systems

Level 3

300218.1 Applied Aspects of Inorganic Chemistry
300614.1 Environmental Geochemistry
300645.1 Science Research Project 2

Major - Mathematics

M3021.1

This major is available to all students. This major may meet the NSW Institute of Teachers accreditation requirements for teaching Mathematics as a first subject in NSW state high schools.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete eight units.

300672.1 Mathematics 1A
300673.1 Mathematics 1B
200025.1 Discrete Mathematics
200028.2 Advanced Calculus

And choose two of

200027.1 Linear Algebra
200030.1 Differential Equations
200029.1 Numerical Analysis

And choose two of

200193.1 Abstract Algebra
200023.1 Analysis
200022.1 Mathematical Modelling

Students enrolled in the Bachelor of Information and Communications Technology may replace 200025 Discrete Mathematics with Discrete Structures and Complexity.

Note: For students who want to complete the Mathematics Major but may not necessarily want to quality for NSW Institute of Teachers accreditation, 200024 Mathematical Finance would be added to the list of Level 300 units.

Major - Statistics

M3022.1

This major is available to all UWS students.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete eight units as follows:

200033.2	Applied Statistics
300606.1	Foundations of Statistical Modelling and Decision Making
300104.1	Database Design and Development
200037.1	Regression Analysis & Experimental Design
200038.1	Time Series and Forecasting
200036.2	Data Mining and Visualisation
200039.1	Surveys and Multivariate Analysis

And choose one of

200192.1	Statistics for Science
200263.1	Biometry
200032.2	Statistics for Business
300700.2	Statistical Decision Making

Major - Computational Decision Making

M3023.1

This major is available to all students.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete eight units

300606.1	Foundations of Statistical Modelling and Decision Making
200042.2	Introduction to Operations Research
200027.1	Linear Algebra
300670.1	Optimisation Techniques
300671.1	Principles and Practice of Decision Making
200044.1	Simulation Techniques

And choose one of

200192.1	Statistics for Science
200263.1	Biometry
200032.2	Statistics for Business
300700.2	Statistical Decision Making

And choose one of

200025.1	Discrete Mathematics
300672.1	Mathematics 1A

Major - Knowledge Discovery and Data Mining

M3024.1

This major is available to all students.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete eight units.

300585.1	Systems Analysis and Design
200033.2	Applied Statistics
300606.1	Foundations of Statistical Modelling and Decision Making
300104.1	Database Design and Development
200036.2	Data Mining and Visualisation
300117.2	Enterprise Database

And choose one of

200192.1	Statistics for Science
200263.1	Biometry
200032.2	Statistics for Business
300700.2	Statistical Decision Making

And choose one of

200037.1	Regression Analysis & Experimental Design
200038.1	Time Series and Forecasting
200039.1	Surveys and Multivariate Analysis
200042.2	Introduction to Operations Research
300670.1	Optimisation Techniques
300671.1	Principles and Practice of Decision Making

Major - Networking

M3025.1

This major is only available to students enrolled in 3639 Bachelor of Information and Communications Technology course.

Offer

Campus	Mode
Campbelltown Campus	Multi Modal
Parramatta Campus	Multi Modal
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete eight units.

300565.1	Computer Networking

300576.1	Networking Workshop
300582.1	Technologies for Web Applications
300095.2	Computer Networks and Internets
300143.2	Network Security
300575.1	Networked Systems Design
300166.1	Systems and Network Management

Choose one of

300583.1	Web Systems Development
300112.1	Digital Communication Technology
300088.1	Broadband Networking

Major - Computer Forensics

M31015V2.1

Computer forensics focuses on the gathering of evidence (often as part of an investigation) from computers and computer networks. Such evidence may consist of actual files (e.g. an image) or the traces of a user's activities that are left in the activity logs of operating systems, browsers, databases, web proxies, or network firewalls, etc. Identifying such evidence requires in-depth technical knowledge of the interactions between hardware, the operating system, programs, and the network. Similarly, knowledge of cryptographic techniques is required where data has been encrypted and/or obfuscated. This major develops this requisite knowledge; it also develops the skills necessary to ensure that evidence is not corrupted, and can be documented and presented in an intelligible manner.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

300447.1	Computer Forensics Workshop
CP308A.1	Information Systems Ethics and Law
300149.1	Operating Systems
300165.1	Systems Administration Programming
300128.2	Information Security
300143.2	Network Security
300095.2	Computer Networks and Internets
300569.1	Computer Security

Major - Networked Systems

M31026V2.1

This major aims to develop graduates with sound skills in the discipline of networked computer systems. Recent advances in computer and telecommunications networked systems, particularly those based on TCP/IP, have increased the importance of network technologies in the discipline of computer science. This major covers a wide range of topics including computer communication network concepts and protocols, multimedia systems, Internet standards and technologies, network security, wireless and mobile computing, and distributed systems. The candidates are also introduced to some of the relevant current key research issues of the field.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

300128.2	Information Security
300095.2	Computer Networks and Internets
300166.1	Systems and Network Management
300575.1	Networked Systems Design
300143.2	Network Security
300149.1	Operating Systems
300115.1	Distributed Systems and Programming
300576.1	Networking Workshop

Major - Innovation Design Management

M3503IDM.1

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete the following eight units.

The following ar core units.

200083.1	Marketing Principles
300014.2	Design Management 3: Organisational Skills for Designers

The following are drawn from alternative/elective units.

300012.2	Design Management 1: Product Design Audit
300013.2	Design Management 2: Corporate Image and Identity
300015.2	Design Management 4: Design Process
200163.1	Innovation and Product Development
100800.2	Consumer Psychology
200154.2	Entrepreneurial Management and Innovation

Major - Interactive Industrial Graphics

M3503IIG2.1

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete the following eight units:

The following are core units.

300302.1	Industrial Graphics 1: Presentation

300282.1 Industrial Graphics 2: Transition
300310.2 Industrial Graphics 3: 3D Solids

The following are drawn from alternative/elective units.

300312.2 Industrial Graphics 4: Surface
300315.1 Industrial Graphics 5: Integrated
101180.1 Web and Time Based Design
100789.2 Interactive Design I
100949.2 Interactive Design II

Major - International Design Management

M3503INTDM.1

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete the following eight units.

The following are core units.

200083.1 Marketing Principles
300014.2 Design Management 3: Organisational Skills for Designers

The following are drawn from alternative/elective units.

300012.2 Design Management 1: Product Design Audit
300013.2 Design Management 2: Corporate Image and Identity
300015.2 Design Management 4: Design Process
200088.1 Brand and Product Management
61671.1 International Management
200154.2 Entrepreneurial Management and Innovation

Major - Biomedical Science

M3577BS_C.1

The biomedical science major focuses on microbiology, biochemistry and aspects of health.

Offer

Campus	Mode
Campbelltown Campus	Multi Modal

Unit Set Structure

The recommended sequence that follows is specific to units offered at the Campbelltown Campus.

Year 2

300300.1 Microbiology 1
300321.1 Microbiology 2
300548.1 Human Metabolism and Disease

And one unit from Schedule A

Year 3

300749.1 Medical Microbiology
300549.1 Human Molecular Biology

And two units from Schedule A

Schedule A Units:

300307.1 Analytical Microbiology
300756.1 Topics in Physiology
300407.1 Mammalian Molecular Medicine
300408.1 Mammalian Cell Biology and Biotechnology
300505.1 Pharmacology
300757.1 Molecular Biology of the Immune System
300556.1 Analytical Protein Science
BC306A.1 Human Physiology 3.1
BI201A.1 Genetics 2.2
SC301A.1 Laboratory Quality Management

Major - Biomedical Science

M3577BS_H.1

The biomedical science major focuses on microbiology, biochemistry and aspects of health.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

The recommended sequence that follows is specific to units offered at the Hawkesbury Campus.

Year 2

300300.1 Microbiology 1
300321.1 Microbiology 2
300220.1 Biochemistry 2

And one unit from Schedule A

Year 3

300749.1 Medical Microbiology
300234.1 Molecular Biology

And two units from Schedule A

Schedule A Units:

300307.1 Analytical Microbiology
300756.1 Topics in Physiology
300407.1 Mammalian Molecular Medicine
300408.1 Mammalian Cell Biology and Biotechnology
300505.1 Pharmacology
300757.1 Molecular Biology of the Immune System
300556.1 Analytical Protein Science
BC306A.1 Human Physiology 3.1
BI201A.1 Genetics 2.2
SC301A.1 Laboratory Quality Management

Major - Human Bioscience

M3577HBV2.1

The human bioscience major focuses on anatomy, physiology and pharmacology.

Offer

Campus	Mode
Campbelltown Campus	Multi Modal

Unit Set Structure

Year 2

300548.1	Human Metabolism and Disease
300751.1	Anatomy of the Thorax and Abdomen
300755.1	The Appendicular Skeleton
300505.1	Pharmacology

Year 3

300754.1	Neuroanatomy

And three units from Schedule B

Schedule B Units:

300749.1	Medical Microbiology
300307.1	Analytical Microbiology
300750.1	Anatomy of the Head and Neck
300321.1	Microbiology 2
300549.1	Human Molecular Biology
400138.2	Pathophysiology 1
400267.1	Pathophysiology 2

Choose one of

300756.1	Topics in Physiology
BC306A.1	Human Physiology 3.1

Major - Medicinal Chemistry

M3577MCV2.1

The medicinal chemistry major focuses on chemistry and biochemistry.

Offer

Campus	Mode
Campbelltown Campus	Multi Modal

Unit Set Structure

Year 2

300548.1	Human Metabolism and Disease
300553.1	Molecules of Life: Synthesis and Reactivity
300297.1	Analytical Chemistry 2

Choose one of

300545.1	Coordination Chemistry
300540.1	Biomolecular Dynamics

Year 3

300546.1	Drug Design and Synthesis
300537.1	Advanced Chemical Analysis
300324.1	Pharmacological Chemistry

Choose one of

300538.1	Advanced Inorganic Chemistry
300475.1	Molecular Pharmacokinetics

Major - Health Promotion

M4545HP.1

The sharing of some common units across the key programs of Health Promotion, Health Service Management and Therapeutic Recreation in addition to the common core, means that these students may complete a second program of study to graduate with a Key Program (shown on testamur) and a major (shown on their transcript).

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

400285.1	Public Health
400273.1	Health Politics, Policy and Planning
400275.1	Health Planning Project
400286.1	Injury Prevention
400784.1	Health Promotion Practice 1
400785.1	Health Promotion Practice 2

Major - Health Services Management

M4545HSM.1

The sharing of some common units across the key programs of Health Promotion, Health Service Management and Therapeutic Recreation in addition to the common core, means that these students may complete a second program of study to graduate with a Key Program (shown on testamur) and a major (shown on their transcript).

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

400273.1 Health Politics, Policy and Planning
400275.1 Health Planning Project
400277.2 Health Services Management
400787.1 Health Services Management Practice
400279.2 Health Services Financial Management
400788.1 Health Services Workforce Management

Major - Therapeutic Recreation

M4545TR.1

The sharing of some common units across the key programs of Health Promotion, Health Service Management and Therapeutic Recreation in addition to the common core, means that students in the Bachelor of Health Science may complete a second program of study to graduate with a Key Program (shown on testamur) and a major (shown on their transcript).

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

400244.1 Introduction to Leisure and Recreation Theory
400790.1 Professional Practice in Aged Care and Disability
400246.2 Workplace Learning 1 (Therapeutic Recreation)
400252.1 Workplace Learning 2 (Community Placement)
400789.1 Leisure Education Programming and Mental Health
400254.1 Therapeutic Recreation Professional Project

Major - Systems Programming

RU3010V2.1

This major aims to develop graduates with sound skills in the discipline of programming. The focus is on programming at the level of system calls to the underlying operating system and many of the units use the industry standard language for systems programming, namely C/C++, as the vehicle of instruction. There is a strong emphasis on the development of highly efficient and reliable code that can provide support services for higher level application oriented programs, as well as the development of programs suitable for systems administration and management. Practical work utilises both Unix and Microsoft environments. This major is appropriate where a career in systems programming or systems administration is planned, or where the student wishes to develop advanced systems programming skills.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

300128.2 Information Security
300092.1 Computer Architecture
300149.1 Operating Systems
300115.1 Distributed Systems and Programming
300165.1 Systems Administration Programming
300168.1 Systems Programming 2
300143.2 Network Security
300569.1 Computer Security

Sub Major - Design Management

S3502DM.1

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete the following four units.

The following is a core unit.

300014.2 Design Management 3: Organisational Skills for Designers

The following are drawn from alternative/elective units.

300012.2 Design Management 1: Product Design Audit
300013.2 Design Management 2: Corporate Image and Identity
300015.2 Design Management 4: Design Process

Sub Major - Industrial Graphics

S3502IG.1

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete the following five units:

The following are core units.

300302.1 Industrial Graphics 1: Presentation
300282.1 Industrial Graphics 2: Transition
300310.2 Industrial Graphics 3: 3D Solids

The following are drawn from alternative/elective units.

300312.2 Industrial Graphics 4: Surface
300315.1 Industrial Graphics 5: Integrated

Sub Major - Sustainable Design

S3502SD.1

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete the following four units.

The following are core units.

300304.2	Sustainable Design: Materials Technology
300309.2	Sustainable Design: Life Cycle Analysis
300306.2	Sustainable Design: Sustainable Futures

The following are drawn from alternative/elective units.

86301.2	Automated Manufacturing

Sub Major - Computer Systems

SM3000.1

This sub-major is only available to students enrolled in the Bachelor of Computing or Bachelor of Information and Communications Technology courses.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete the following four units

300096.3	Computer Organisation
300167.2	Systems Programming 1
300092.1	Computer Architecture
300149.1	Operating Systems

Sub Major - Systems Administration

SM3001.1

This sub-major is only available to students enrolled in the Bachelor of Computing or Bachelor of Information and Communications Technology courses.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete the following four units

300167.2	Systems Programming 1
300103.1	Data Structures and Algorithms
300149.1	Operating Systems
300165.1	Systems Administration Programming

Sub Major - Systems Security

SM3002.1

This sub-major is only available to students enrolled in the Bachelor of Computing or Bachelor of Information and Communications Technology courses.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete the following four units

300167.2	Systems Programming 1
300128.2	Information Security
300143.2	Network Security
300149.1	Operating Systems

Sub Major - Systems Programming

SM3003.1

This sub-major is only available to students enrolled in the Bachelor of Computing or Bachelor of Information and Communications Technology courses.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Student must complete the following three units

300167.2	Systems Programming 1
300103.1	Data Structures and Algorithms
300149.1	Operating Systems

And choose one of

300115.1	Distributed Systems and Programming
300168.1	Systems Programming 2

Sub Major - Formal Systems

SM3004.1

This sub-major is only available to students enrolled in the Bachelor of Computing or Bachelor of Information and Communications Technology courses.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Student must complete the following three units

300103.1	Data Structures and Algorithms
300121.1	Formal Languages and Automata
300404.1	Formal Software Engineering

And choose one of

300368.1	Intelligent Systems
300093.1	Computer Graphics
200237.1	Mathematics for Engineers 1
200193.1	Abstract Algebra
200033.2	Applied Statistics
200042.2	Introduction to Operations Research

Sub Major - Applied Mathematics

SM3005.1

This sub-major is only available to students enrolled in the Bachelor of Computing or Bachelor of Information and Communications Technology courses.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete the following unit

200237.1	Mathematics for Engineers 1

And choose three of

200238.1	Mathematics for Engineers 2
200242.1	Mathematics for Engineers 3
200023.1	Analysis
200193.1	Abstract Algebra
200033.2	Applied Statistics
200042.2	Introduction to Operations Research
200027.1	Linear Algebra

Sub Major - Web Application Development (for Computing Students)

SM3006.1

This sub-major is only available to students enrolled in the Bachelor of Computing or Bachelor of Information and Communications Technology courses.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete the following four units

300582.1	Technologies for Web Applications
300583.1	Web Systems Development
300111.1	Developing Web Applications with XML
300574.1	Internet Structures and Web Servers

Sub Major - Web Application Development (for Non-Computing Students)

SM3007.1

This sub-major is available to all UWS students except those enrolled in the Bachelor of Computing or Bachelor of Information and Communications Technology courses.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete the following three units

300580.1	Programming Fundamentals
300582.1	Technologies for Web Applications
300583.1	Web Systems Development

And choose one of

300104.1	Database Design and Development
300570.2	Human-Computer Interaction
300569.1	Computer Security
300111.1	Developing Web Applications with XML
300574.1	Internet Structures and Web Servers

Sub Major - Networking

SM3008.1

This sub-major is available to all students except those enrolled in the Bachelor of Computing (Networks).

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete the following three units

300565.1	Computer Networking
300095.2	Computer Networks and Internets
300575.1	Networked Systems Design

And choose one of

300143.2	Network Security
300166.1	Systems and Network Management
300088.1	Broadband Networking

Sub Major - Health Information Management

SM3009.1

This sub-major deals with the management of Health Information and the management and analysis of that data via databases. This sub-major is available to all students except those enrolled in the Health Informatics key program within the Bachelor of Computing course.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete the following four units

300566.1	Introduction to Health Informatics
300104.1	Database Design and Development
300567.1	e-Health
200036.2	Data Mining and Visualisation

Sub Major - Health Information Applications

SM3010.1

This sub-major will deal with the application of approaches, tools and techniques and the development of programs appropriate for Health Information systems. This sub-major is available to all students except those enrolled in the Health Informatics key program within the Bachelor of Computing course.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete the following four units

300566.1	Introduction to Health Informatics
300582.1	Technologies for Web Applications
300567.1	e-Health
300568.1	Services Computing in Healthcare

Note: 300582 Technologies for Web Applications requires 300580 Programming Fundamentals as a pre-requisite.

Sub Major - Entertainment Computing

SM3011.1

This sub-major is available to all students.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete the following four units

300580.1	Programming Fundamentals
300491.1	Games Technology
300492.1	Games Theory and Design
300093.1	Computer Graphics

Sub Major - Construction Economics

SM3014.1

This sub-major is a requirement for membership of the Australian Institute of Quantity Surveyors and is a useful course of study for those interested in the area of cost control and project planning.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

To graduate with a sub major in Construction Economics students must successfully complete the following four specialist units

200503.1	Construction Information Systems
200487.1	Quantity Surveying 2
200469.1	Quality and Value Management
BG412A.1	Estimating 2 (V2)

Sub Major - Biochemistry and Molecular Biology

SM3016.1

This sub-major is available to all students.

Offer

Campus	Mode
Campbelltown Campus	Multi Modal
Hawkesbury Campus	Multi Modal
Parramatta Campus	Multi Modal

Unit Set Structure

Students must complete four units as follows:

Level 2

Choose one of

300219.1 Biochemistry 1
300555.1 Proteins and Genes

Choose one of

300220.1 Biochemistry 2
300548.1 Human Metabolism and Disease

Level 3

Choose one of

300234.1 Molecular Biology
300549.1 Human Molecular Biology

And choose one of:

300544.1 Cell Signalling
300229.1 Immunology
300408.1 Mammalian Cell Biology and Biotechnology
300407.1 Mammalian Molecular Medicine
300757.1 Molecular Biology of the Immune System

Sub Major - Conservation Biology

SM3017.1

This sub-major is available to all students.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

Students must complete four units.

Level 1

300222.1 Biology 2

Level 2

300634.1 Ecology
300623.1 Genetics

Level 3

Choose one of

300465.1 Aquatic Ecology
300327.1 Australian Plants
300617.1 Conservation Biology
300470.1 Vertebrate Biodiversity

Sub Major - Microbiology

SM3018.1

This sub-major is available to all students.

Offer

Campus	Mode
Campbelltown Campus	Multi Modal
Hawkesbury Campus	Multi Modal
Parramatta Campus	Multi Modal

Unit Set Structure

Students must complete four units.

Level 2

300300.1 Microbiology 1
300321.1 Microbiology 2

Level 3

Choose two of

300307.1 Analytical Microbiology
14455.1 Biotechnology
300749.1 Medical Microbiology
300234.1 Molecular Biology

or

300549.1 Human Molecular Biology

Sub Major - Plant Science

SM3019.1

This sub-major is available to all students.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

Students must complete four units.

Level 2

300328.1 Botany
300333.1 Introductory Plant Physiology

Level 3

300336.1 Plant-Microbe Interactions

300327.1 Australian Plants

Sub Major - Animal Science

SM3020.1

This sub-major is not available to students who complete the Bachelor of Science (Animal Science).

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

Students must complete four units from the following.

Level 1

300560.1 Introduction to Animal Science
300425.1 Introduction to Wildlife Studies

Level 2

300562.1 Animal Nutrition and Feeding
300563.1 Animal Reproduction
300219.1 Biochemistry 1
300623.1 Genetics
300620.1 Human Physiology 1

Level 3

300427.1 Animal Production
300564.1 Animal Behaviour
300334.1 Invertebrate Biology
300470.1 Vertebrate Biodiversity

Sub Major - Nutrition and Physiology

SM3021.1

This sub-major is available to all students.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

Students must complete four units.

Level 2

Choose one of

300219.1 Biochemistry 1
300658.1 Endocrinology and Metabolism

Choose three of

Level 2

300620.1 Human Physiology 1
300649.1 Nutrition and Health 1
300650.1 Nutrition and Health 2

Level 3

300653.1 Applied Nutrition
300360.1 Consumer Issues in Nutrition
300622.1 Human Physiology 2
300229.1 Immunology
300652.1 Nutrition and Health Biochemistry

Sub Major - Geochemistry

SM3022.1

This sub-major is available to all students.

Offer

Campus	Mode
Parramatta Campus	Multi Modal

Unit Set Structure

Students must complete any four units from the following.

Level 1

300232.1 Introduction to Earth Sciences
300613.1 Introductory Geochemistry: Earth, Resources and Environments

Level 2

300611.1 Chemical Mineralogy
300612.1 Geochemical Systems

Level 3

300218.1 Applied Aspects of Inorganic Chemistry
300614.1 Environmental Geochemistry
300645.1 Science Research Project 2

Sub Major - Environmental Chemistry

SM3023.1

This sub-major is available at the Hawkesbury campus to all students.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

Students must complete four units.

Level 2

300493.1 Forensic and Environmental Analysis
300467.1 Green Chemistry 1
300468.1 Green Chemistry 2

Level 3

300630.1 Environmental Regulations

Sub Major - Forensic Chemistry

SM3024.1

This sub-major is also form part of the course 3637 Bachelor of Natural Science.

Offer

Campus	Mode
Hawkesbury Campus	Multi Modal

Unit Set Structure

Students must complete four units.

300377.1 Forensic Analysis of Physical Evidence
300493.1 Forensic and Environmental Analysis
300494.1 Forensic Chemistry
300656.1 Laboratory Quality Management

Sub Major - Mathematics

SM3025.1

This sub-major is available to all students. This sub-major may meet the NSW Institute of Teachers accreditation requirements for teaching Mathematics as a second subject in NSW state high schools.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete four units.

300672.1 Mathematics 1A
300673.1 Mathematics 1B

And choose two of

200028.2 Advanced Calculus
200027.1 Linear Algebra
200030.1 Differential Equations

Sub Major - Statistics

SM3026.1

This sub-major is available to all students.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete four units.

Choose one unit from:

200192.1 Statistics for Science
200263.1 Biometry
200032.2 Statistics for Business
300700.2 Statistical Decision Making

And choose at least one of

200033.2 Applied Statistics
300606.1 Foundations of Statistical Modelling and Decision Making
300104.1 Database Design and Development

And choose at least one of

200037.1 Regression Analysis & Experimental Design
200038.1 Time Series and Forecasting
200036.2 Data Mining and Visualisation
200039.1 Surveys and Multivariate Analysis

Sub Major - Computational Decision Making

SM3027.1

This sub-major is available to all students.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete four units.

200025.1 Discrete Mathematics

And choose one of

200192.1 Statistics for Science
200263.1 Biometry
200032.2 Statistics for Business
300700.2 Statistical Decision Making

And choose two of

300606.1 Foundations of Statistical Modelling and Decision Making
200042.2 Introduction to Operations Research

200027.1 Linear Algebra
300670.1 Optimisation Techniques
300671.1 Principles and Practice of Decision Making
200044.1 Simulation Techniques

Students enrolled in Bachelor of Information and Communications Technology course may replace 200025 Discrete Mathematics with 300699 Discrete Structures and Complexity.

Note: For students who want to complete a Mathematics sub-major, but may not necessarily want to quality for NSW Institute of Teachers accreditation, 200029 Numerical Analysis would be added to the list of Level 2 units and 200024 Mathematical Finance would be added to the list of Level 3 units.

Sub Major - Knowledge Discovery and Data Mining

SM3028.1

This sub-major is available to all students.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete four units as follows:

300606.1 Foundations of Statistical Modelling and Decision Making
300104.1 Database Design and Development
200036.2 Data Mining and Visualisation

And choose one of

200192.1 Statistics for Science
200263.1 Biometry
200032.2 Statistics for Business
300700.2 Statistical Decision Making

Sub Major - IT Support

SM3031.1

This sub-major is only available to students enrolled in the Bachelor of Information and Communications Technology course.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

Students must complete four units.

300150.2 PC Workshop
300576.1 Networking Workshop
300136.3 I.T. Support Practicum

And choose one of

200083.1 Marketing Principles
300167.2 Systems Programming 1
200120.1 E-Business Fundamentals and Systems

Sub Major - Computer Engineering

SM3032.1

This sub-major is available to students other than those enrolled in B Engineering (Computer) Key Program. This sub-major includes core subjects of computer engineering. It provides a comprehensive introduction to essential aspects of the discipline.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

300029.2 Engineering Visualization
300167.2 Systems Programming 1
300096.3 Computer Organisation

And one of

300092.1 Computer Architecture
300149.1 Operating Systems
300044.1 Microcontrollers and PLCs

Sub Major - Construction

SM3033.1

This sub-major is available to any student in UWS other than those enrolled in Bachelor of Construction Management or Bachelor of Housing. This sub-major includes core subjects of construction. It provides a comprehensive introduction to essential aspects of the discipline.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

BG103A.1 Building 2
BG302A.1 Building Regulation Studies
200471.2 Construction Technology 5 (Envelope)
MG313A.1 Project Management

Sub Major - Electrical Engineering

SM3034.1

This sub-major is available to students other than those enrolled in B Engineering (Electrical) Key Program. This sub-major includes core subjects of electrical engineering. It provides a comprehensive introduction to essential aspects of the discipline.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

300071.1	Electrical Machines 1
300481.1	Engineering Electromagnetics

And two of

300026.2	Energy Systems
300070.2	Electrical Drives
300024.2	Electronic Systems Design

Sub Major - Environmental Engineering

SM3035.1

This sub-major is available to students other than those enrolled in B Engineering (Environmental) Key Program. This sub-major includes core subjects of environmental engineering. It provides a comprehensive introduction to essential aspects of the discipline.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

300469.1	Introductory Chemistry
EY101A.1	Terrestrial Environment Management
MG309A.1	Water and Waste Management
EH321A.1	Air Quality Assessment & Management (UG)

Sub Major - Wireless Engineering

SM3036.1

This sub-major is available to students other than those enrolled in B Engineering (Telecommunications) Key Program. This sub-major covers specialised topics on wireless communications, in addition to general concepts on telecommunications.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

300007.1	Communication Systems
300065.2	Wireless Communications
300024.2	Electronic Systems Design

And one of

300068.2	Communication Electronics
300489.1	Radio and Satellite Communication

Sub Major - Civil Engineering

SM3621CIVE.1

This sub-major is available to students other than those enrolled in the B Engineering (Civil) Key Program. This sub-major includes core subjects of civil engineering. It provides a comprehensive introduction to essential aspects of the discipline.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

85010.1	Structural Analysis
85014.3	Steel Structures (UG)
85015.2	Timber Structures (UG)
85251.2	Concrete Structures (UG)

Sub Major - Ecological Engineering

SM3621ECOE.1

This sub-major is available to students other than those enrolled in the B Engineering (Civil) or (Environmental) Key Program. This sub-major includes core subjects of ecological engineering. It provides a comprehensive introduction to essential aspects of the discipline.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

300482.1	Engineering Geology and Concrete Materials
85003.1	Surveying for Engineers
300486.1	Infrastructure Engineering
85021.2	Environmental Engineering

Sub Major - Robotics and Mechatronics

SM3621R&M.1

This sub-major is available to students other than those enrolled in B Engineering (Robotics and Mechatronics) Key Program. The units forming this sub-major provide a comprehensive introduction to essential aspects of mechatronics and robotics. It is intended as a coherent set of units in mechanics of machines, automation and robotics that can add to engineering knowledge gained in other fields of engineering. The sub-major may be taken by students in non-engineering areas provided they satisfy the unit prerequisites and assumed knowledge.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

300035.2	Kinematics and Kinetics of Machines
86301.2	Automated Manufacturing
300044.1	Microcontrollers and PLCs

And one of

300056.2	Robotics
300043.2	Mobile Robotics

Sub Major - Soil Engineering

SM3621SOE.1

This sub-major is available to students other than those enrolled in B Engineering (Civil) or (Environmental) Key Programs. This sub-major includes core subjects of soil engineering. It provides a comprehensive introduction to essential aspects of the discipline.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

200237.1	Mathematics for Engineers 1
300482.1	Engineering Geology and Concrete Materials
85012.2	Soil Engineering
300485.1	Foundation Engineering

Sub Major - Structural Engineering

SM3621STRE.1

This sub-major is available to students other than those enrolled in the B Engineering (Civil) or (Environmental) Key Programs. This sub-major includes core subjects of structural engineering. It provides a comprehensive introduction to essential aspects of the discipline.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

300463.1	Fundamentals of Mechanics
300040.1	Mechanics of Materials
85006.2	Introduction to Structural Engineering
85010.1	Structural Analysis

Sub Major - Water Engineering

SM3621WATE.1

This sub-major is available to students other than those enrolled in B Engineering (Civil) or (Environmental) Key Programs. This sub-major includes core subjects of water engineering. It provides a comprehensive introduction to essential aspects of the discipline.

Offer

Campus	Mode
Penrith Campus	Multi Modal

Unit Set Structure

200237.1	Mathematics for Engineers 1
85009.2	Water Engineering
300479.1	Drainage Engineering
85020.2	Water Resources Engineering (UG)

Units

200193.1 Abstract Algebra

Credit Points 10 **Level** 3

Assumed Knowledge

200025 Discrete Mathematics

Equivalent Units

14702 - Advanced Algebra, 14383 - Algebra 3

.....

This unit develops algebraic thought to a high level. The abstract concepts involved in the main topics (group theory and number theory) have many applications in science and technology, and the unit includes an application to cryptography.

200101.2 Accounting Information for Managers

Credit Points 10 **Level** 1

Corequisite

200336.1 Business Academic Skills

Special Requirements

Co-requisite - 200336 - Business Academic Skills only applies to students in courses 2739 Bachelor of Business and Commerce, 2741 Bachelor of Business and Commerce (Advanced Business Leadership) and 2740 Bachelor of Business and Commerce/Bachelor of Laws.

.....

This unit provides exposure to financial and management accounting information from a user of accounting information viewpoint. The unit aims to provide breadth of awareness and knowledge in relevant fields of accounting essential to decision making for managers.

400347.1 Acupuncture 1

Credit Points 10 **Level** 1

Assumed Knowledge

Assumed knowledge equivalent to Traditional Chinese Medicine 1.

Special Requirements

To undertake this unit, students must comply with the following special requirements: Completion of a Prohibited Persons Declaration; Criminal Record Check Clearance.

.....

Acupuncture is one of the principal therapeutic interventions in Traditional Chinese Medicine (TCM). This unit introduces students to acupuncture theory and practice, and provides opportunity to develop practical skills. This unit also expands upon the student's understanding of TCM theory and practice principles.

400350.1 Acupuncture 2

Credit Points 10 **Level** 2

Special Requirements

To undertake this unit, students must comply with the following special requirements: Completion of a Prohibited Persons Declaration; Criminal Record Check Clearance.

.....

This unit consolidates and extends students' knowledge of acupuncture theory and practice, and provides further opportunity to develop practical skills. It revises and expands channel theory and point location. Students are introduced to the theory of point combinations and the development of acupuncture prescriptions and treatment plans. Practical sessions include advanced needle manipulation, moxibustion, cupping, plum blossom and prismatic needling. This unit also expands upon the student's understanding of Traditional Chinese Medicine theory and practice principles.

400086.2 Adulthood and Ageing

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge of sociological and psychological concepts and theories

Special Requirements

Successful completion of 80 credit points.

.....

This unit provides the opportunity for students to develop concepts, theories and issues from sociology, critical psychology, and the social sciences by examining a range of life course themes and the experiences of ageing and adult life. Central to the unit is the notion that the experiences of adult life are individual yet occur in and are impacted upon by a variety of social, cultural & historical contexts. The unit critically explores a variety of topics of relevance to understanding adulthood in the 21st century. This unit aims to explore the dominant discourses of ageing and their impact on adult lives.

200028.2 Advanced Calculus

Credit Points 10 **Level** 2

Assumed Knowledge

200189 Concepts of Mathematics

Equivalent Units

14504 - Mathematics 4, 14379 - Advanced Calculus, 14385 - Calculus 3, J2764 - Mathematics 2.1, J2765 Mathematics 2.2

Incompatible Units

200238 - Mathematics for Engineers 2

.....

This unit is designed for students undertaking studies in mathematics, statistics, operations research and mathematical finance. It provides further mathematical training in the areas of multivariable and vector calculus,

which is essential to the understanding of many areas of both pure and applied mathematics.

300537.1 Advanced Chemical Analysis

Credit Points 10 **Level** 3

Assumed Knowledge

Material covered in Analytical Chemistry 2.

Prerequisite

300297.1 Analytical Chemistry 2

Equivalent Units

300298 - Analytical Chemistry 3, J3657 - Analytical Chemistry 3, CH301A - Analytical Chemistry 3.1

.....

Students studying at Hawkesbury or Parramatta campus should refer to 300298 - Analytical Chemistry 3. This unit provides the student with skills to carry out the more advanced wet chemical analysis and provides an understanding of the principles of instrumental analysis, covering the areas of spectroscopy, chromatography, electrochemistry, thermal methods and automated methods of analysis. The techniques of analytical method development, inorganic and organic residue analysis, herbal analysis and forensic toxicology analysis will be discussed. Aspects of quality control and quality assurance will also be included.

300586.1 Advanced Computer Science Activities 1

Credit Points 0 **Level** 1

Special Requirements

Students must be enrolled in course 3634 Bachelor of Computer Science (Advanced).

.....

This unit is only for Bachelor of Computer Science (Advanced) students in year one of their studies. Students will participate in industry and research based extension activities (non-assessable). These activities will be identified with the goal of exposing students early in their degree and integrating them into a culture of academic enquiry, problem solving, knowledge generation and scholarship and an awareness of the challenges and current issues confronting the computing/IT industry. The unit will be used to record student activities and a satisfactory/ unsatisfactory grade will be applied at the end of each year.

300587.1 Advanced Computer Science Activities 2

Credit Points 0 **Level** 2

Special Requirements

Students must be enrolled in course 3634 Bachelor of Computer Science (Advanced).

.....

This unit is only for Bachelor of Computer Science (Advanced) students in year two of their studies. Students will participate in industry and research based extension activities (non-assessable). These activities will be identified with the goal of exposing students early in their degree and integrating them into a culture of academic enquiry, problem solving, knowledge generation and scholarship and an awareness of the challenges and current issues confronting the computing/IT industry. The unit will be used to record student activities and a satisfactory/ unsatisfactory grade will be applied at the end of each year.

300588.1 Advanced Computer Science Activities 3

Credit Points 0 **Level** 3

Special Requirements

Students must be enrolled in course 3634 Bachelor of Computer Science (Advanced).

.....

This unit is only for Bachelor of Computer Science (Advanced) students in year three of their studies. Students will participate in industry and research based extension activities (non-assessable). These activities will be identified with the goal of exposing students early in their degree and integrating them into a culture of academic enquiry, problem solving, knowledge generation and scholarship and an awareness of the challenges and current issues confronting the computing/IT industry. The unit will be used to record student activities and a satisfactory/ unsatisfactory grade will be applied at the end of each year.

300668.1 Advanced Engineering Thesis

Credit Points 60 **Level** 5

Assumed Knowledge

Students should have achieved at least 240 Credit Points because this is an honours level unit. Students must have a course GPA equal to or greater than 5.5, which is required to maintained their candidature in course 3636 Bachelor of Engineering (Advanced).

Prerequisite

300053.2 Professional Practice

Corequisite

81999.1 Industrial Experience (Engineering)

Incompatible Units

300484 - Engineering Thesis, 300483 - Engineering Project

Special Requirements

This unit is only available to students in course 3636 Bachelor of Engineering (Advanced). An eligible student must enrol in this unit in two consecutive halves (e.g., 1H and 2H in 2009, or 2H in 2009 and 1H in 2010).

.....

This unit provides students with the opportunity to conduct original research on their chosen topics under the supervision of academics. Students are encouraged to disseminate their research results as refereed publications.

300666.1 Advanced Engineering Topic 1

Credit Points 10 **Level** 3

Assumed Knowledge

Students should have achieved at least 160 Credit Points to be able to study the advanced engineering topics in the unit. Students must have a course GPA equal to or greater than 5.5, which is required to maintained their candidature in course 3636 Bachelor of Engineering (Advanced).

Special Requirements

This unit is only available to students in course 3636 Bachelor of Engineering (Advanced).

.....

This unit provides students with the opportunity to tackle challenging engineering problems. They will study advanced topics in selected areas under the supervision of academics. The advanced topics will prepare students for further study and research.

300667.1 Advanced Engineering Topic 2

Credit Points 10 **Level** 4

Assumed Knowledge

Students must have a course GPA equal to or greater than 5.5, which is required to maintained their candidature in course 3636 Bachelor of Engineering (Advanced).

Prerequisite

300666.1 Advanced Engineering Topic 1

Special Requirements

This unit is only available to students in course 3636 Bachelor of Engineering (Advanced).

.....

This unit provides students with the opportunity to tackle engineering problems that are more challenging than those in Advanced Engineering Topic 1. They will study advanced topics in selected areas under the supervision of academics. The advanced topics will prepare students for further study and research.

300538.1 Advanced Inorganic Chemistry

Credit Points 10 **Level** 3

Prerequisite

300545.1 Coordination Chemistry OR **300230.1** Inorganic Chemistry 2

Equivalent Units

300231 - Inorganic Chemistry 3, J3668 - Inorganic Chemistry 3

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Students studying at Hawkesbury or Parramatta campus should refer to 300231 - Inorganic Chemistry 3. Advanced Inorganic Chemistry is based on the foundations laid in the unit Coordination Chemistry. It covers structure and bonding in inorganic chemistry, higher coordination numbers, lanthanide and actinides, followed by the bioinorganic chemistry of zinc and iron in mammalian and microbial systems. Kinetics and mechanism of inorganic reactions are examined. The important area of organo-transition metal chemistry and catalysis is introduced. Students build on their familiarity with the literature of inorganic chemistry and are introduced to several advanced databases of chemical information. The laboratory sessions develop knowledge of advanced techniques such as anaerobic syntheses and instrumental techniques of characterisation such as NMR, IR and electronic spectra. This is also used to develop an appreciation of the role of computer-based molecular modelling in inorganic chemistry.

300591.1 Advanced Science Research Project A

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge equivalent to successful completion of all Level 1 core units in the student's key program and a GPA greater than or equal to 5.0.

Equivalent Units

Students currently enrolled in course 3562 Bachelor of Science (Advanced Science) who wish to transfer to the new program will be given advanced standing for any projects successfully completed.

Special Requirements

This unit is only available to students enrolled in course 3562 Bachelor of Science (Advanced Science).

.....

This unit introduces the student to thinking as a research scientist whilst developing skills in a particular area of interest. The student undertakes a minor research project under directed supervision, during which they outline the problem and undertake a full literature review, undertake appropriate research, and analyze and discuss the results in lecture format.

300592.1 Advanced Science Research Project B

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge equivalent to successful completion of all Level 1 core units in the student's key program and a GPA>5.

Equivalent Units

Students currently enrolled in 3562 Bachelor of Science (Advanced Science) who wish to transfer to the new program will be given advanced standing for any projects successfully completed.

Special Requirements

This unit is only available to students enrolled in course 3562 Bachelor of Science (Advanced Science).

.....

This unit introduces the student to thinking as a research scientist whilst developing skills in a particular area of interest. The student undertakes a minor research project under directed supervision, during which they outline the problem and undertake a full literature review, undertake appropriate research, and analyze and discuss the results in lecture format.

300593.1 Advanced Science Research Project C

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge equivalent to successful completion of all Level 1 core units in the student's key program and a GPA>5.

Equivalent Units

Students currently enrolled in 3562 Bachelor of Science (Advanced Science) who wish to transfer to the new program will be given advanced standing for any projects successfully completed.

Special Requirements

This unit is only available to students enrolled in course 3562 Bachelor of Science (Advanced Science).

.....

This unit introduces the student to thinking as a research scientist whilst developing skills in a particular area of interest. The student undertakes a minor research project under directed supervision, during which they outline the problem and undertake a full literature review, undertake appropriate research, and analyze and discuss the results in both formal report and lecture format.

300410.2 Advanced Topics and Research Skills

Credit Points 20 **Level** 8

Special Requirements

Students must be enrolled in postgraduate or honours courses.

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200411.1 Advanced Topics in Mathematics

Credit Points 30 **Level** 5

Special Requirements

Restriction to students enrolled in a Bachelors honours course.

.....

The Advanced Topics in Mathematics is an integral part of the Bachelor of Science (Honours) course work program. It is structured in such a way that there are extensive links with the other components in the program (Honours Thesis). In undertaking and completing tasks associated with this component the student will be working toward the ultimate goal of completion of the Thesis document. Successful completion of the Advanced Topics in Mathematics Program will allow development of skills, knowledge and a way of thinking to assist in the learning of mathematics/statistics, which will help in the production of the thesis. In this program students will be given the opportunity to present work in assignments and examinations.

300530.1 Advances in Agronomy

Credit Points 10 **Level** 3

Equivalent Units

AG403A - Advances in Agronomy

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This unit aims to provide students with professional exposure to current state-of-the-art approaches to the science of Agronomy. It focuses on future trends in Agronomy in the contexts of current research, extension and commercial practice, with particular emphasis on the environmental and socio-economic sustainability of agronomic production systems. Students will gain valuable experiences in the applications of selected agronomic models/tools to farm and environmental decision making, as well as evaluating the usefulness of these models/tools as discussion support systems in the contexts of agriculture, horticulture, food and environmental risk and opportunity management.

300523.1 Agricultural Supply Chains

Credit Points 10 **Level** 1

.....

This unit will provide students with an understanding of agricultural production in relation to its broader environment including the value/supply chain. Emphasis will be placed on the agricultural industries in Australia integrated nature of the production supply chain and the roles of the various players in the chain. In addition information will be provided on factors external to the chain that influence its operation. This unit will provide the holistic framework within which the other units they study in first year will be placed in context.

300524.1 Agronomy

Credit Points 10 **Level** 2

Equivalent Units

AG307A - Agronomy

.....

This unit aims to enable students to develop a sound understanding of the broad principles involved in the production and management of crops and pastures, identification of plant species, linking crop/pasture growth to animal production, and interacting with researchers, community workers and industry professionals in understanding broader and specific issues related to agronomy. Topics include basic crop and pasture botany, seed physiology, crop/pasture establishment, growth, development, adaptation, grazing management and plant protection. Students manage a crop in the field and a pot trial in the glasshouse. The practical sessions enable students to apply the management principles and become familiar with various measuring techniques.

EH321A.1 Air Quality Assessment & Management (UG)

Credit Points 10 **Level** 3

Equivalent Units

EH302A - Air Quality Assessment and Management

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From 2009 this unit was replaced by 300628 - Air Quality Management. This unit is designed for students who wish to gain knowledge of air pollution, it's causes and control methods. Topics include: clean air legislation; air pollution; meteorology; ambient air quality; emission testing; odour and hydrocarbon control; control technology; emissions inventory. At the completion of this unit the student will have a good understanding in the following: pollution types and sources; effects of air pollution; influence of meteorology; indoor air quality; dispersion modelling; monitoring and control of pollution from stationary and mobile sources; legislation and standards, and global air pollution issues.

300628.1 Air Quality Management

Credit Points 10 **Level** 3

Equivalent Units

EH321A - Air Quality Assessment and Management (UG)

.....

This unit is designed for students who wish to gain knowledge of air pollution, its causes and control methods. Topics include: clean air legislation; air pollution; meteorology; ambient air quality; emission testing; odour and hydrocarbon control; control technology; emissions inventory. At the completion of this unit the student will have a good understanding in the following: pollution types and sources; effects of air pollution; influence of meteorology; indoor air quality; dispersion modelling; monitoring and control of pollution from stationary and mobile sources; legislation and standards, and global air pollution issues.

400815.2 Alterations in Breathing, Work/ Leisure and Mobility

Credit Points 10 **Level** 2

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This unit will elaborate the mechanisms of health breakdown and their application to professional nursing practice in supporting people who are affected by alteration in breathing, work/leisure, sexuality and mobility.

400814.2 Alterations in Nutrition, Elimination and Sexuality

Credit Points 10 **Level** 2

Equivalent Units

400754

.....

This unit will elaborate the mechanisms of health breakdown and their application to professional nursing practice in supporting people who are affected by alteration in eating, drinking, nutrition, elimination and sexuality.

200023.1 Analysis

Credit Points 10 **Level** 3

Assumed Knowledge

Advanced Calculus

Equivalent Units

14388 - Advanced Mathematical Topics, J3762 - Solid State and Semiconductor Physics

.....

This unit provides the theoretical basis of real and complex numbers, including differentiation and integration. Topics include: field axioms and completeness, sequences, series, convergence, compactness, continuity, differentiability, integrability, and related theorems in both the real and complex number systems.

300534.1 Analysis of Agricultural Supply Chains

Credit Points 10 **Level** 3

Assumed Knowledge

An understanding of the interconnected nature of agricultural supply chains as would be gained though successful completion of the unit 300523 - Agricultural Supply Chains.

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In this unit students will gain and demonstrate a clear understanding of the integrated nature of the agricultural supply/value chain. This unit will further develop students' understanding of the integrated nature and processes to enable effective analysis of the various components of the value/supply chain. In doing so students will develop skills in the use of various tools including analytical tools and skills including high level communication skills required to work within the value/supply chain.

300297.1 Analytical Chemistry 2

Credit Points 10 **Level** 2

Assumed Knowledge

Level 1 Chemistry

Prerequisite

300224.1 Chemistry 1 OR **300554.1** Principles of Chemistry

Equivalent Units

14132 - Chemical Analysis 1, CH201A - Analytical Chemistry 2.2, J2726 - Analytical Chemistry 2

Incompatible Units

14247 - Inorganic and Analytical Chemistry

.....

This unit will aim to develop within the student an understanding of, and an appreciation for, the fundamentals of analytical chemistry. The student will be exposed to the theory and practice of a range of chemical analyses with emphasis on 'wet' or 'classical' methods, and an introduction to some instrumental methods. An important component of this unit is to develop within the student laboratory skills in chemical analysis. Topics covered in this unit include: the evaluation of analytical data; sampling and sample preparation; unit operations in analytical chemistry; stoichiometry and equilibrium; gravimetric analysis; volumetric analysis; separation methods; spectroscopic methods of analysis; electrochemical methods of analysis; analysis of real samples.

300298.1 Analytical Chemistry 3

Credit Points 10 **Level** 3

Assumed Knowledge

Satisfactory completion of first year degree level chemistry and a second year analytical chemistry subject.

Prerequisite

300297.1 Analytical Chemistry 2

Equivalent Units

14152 - Chemical Analysis 2, CH301A - Analytical Chemistry 3.1, J3657 - Analytical Chemistry 3

.....

Students studying at Hawkesbury or Parramatta campus should refer to 300538 - Advanced Chemical Analysis. This unit equips the student with: an understanding of the principles of instrumental analysis; enhanced knowledge of contemporary analytical chemistry; wider experience of modern analytical instrumentation and its applications; improved skills in laboratory analysis using a range of instrumental techniques. Techniques covered include: separation methods, atomic spectroscopy, electrochemical methods, X-ray methods, principles of spectroscopic methods, electron microscopy and mass spectroscopy, gas and liquid chromatography, automated methods of analysis, analytical method development, quality control and quality assurance, pesticide residue analysis, toxicological (forensic) analysis.

300307.1 Analytical Microbiology

Credit Points 10 **Level** 3

Assumed Knowledge

A good general knowledge of analytical methods in microbiology.

Prerequisite

300300.1 Microbiology 1

Equivalent Units

MI301A - Analytical Microbiology (V1)

.....

This unit in analytical microbiology aims to introduce students to analytical techniques for the detection, identification and enumeration of microorganisms in food, pharmaceutical, cosmetic and environmental materials.

300556.1 Analytical Protein Science

Credit Points 10 **Level** 3

Assumed Knowledge

Detailed knowledge of protein structure at primary, secondary, tertiary, and quaternary levels; relationship between protein structure and protein function; protein denaturation; isoelectric points and their relevance for protein separation; basic knowledge of and competency in biochemical laboratory techniques, such as spectrophotometry, centrifugation, enzyme assay, graphical methods and biochemical calculations.

Prerequisite

300555.1 Proteins and Genes OR **300219.1** Biochemistry 1

Equivalent Units

J3656 - Analytical Biochemistry

.....

This unit covers a range of biochemical techniques and methodologies used for both analysis and purification of biological molecules. It includes advanced aspects of spectroscopy, centrifugation, radioisotopes; RNA isolation and detection, chromatographic principles and methods (gel filtration, ion exchange, affinity, hydrophobic interaction, chromatofocusing); electrophoresis principles and methods (SDS-PAGE, isoelectric focusing, pore gradient, two-dimensional, capillary); protein extraction and separation strategies. The methods and applications of proteomic research are included. The laboratory work parallels lecture material, and students gain hands-on experience in many of these techniques. The importance of quality control is emphasised and quality control programs are carried out concurrently with other laboratory work.

300750.1 Anatomy of the Head and Neck

Credit Points 10 **Level** 3

Equivalent Units

300316 - Anatomy of the Head and Neck

.....

This unit provides a thorough understanding of the topographic anatomy of the human head and neck areas. It undertakes this by utilising a regional approach (as against a systems approach), emphasising the interplay of the different body systems. Cadaver specimens are used to facilitate the learning of spatial relationships between bony and soft tissues.

300751.1 Anatomy of the Thorax and Abdomen

Credit Points 10 **Level** 2

Equivalent Units

E2320 - Human Biological Sciences IV, 300317 - Anatomy of the Thorax and Abdomen

.....

This unit provides a thorough understanding of the topographic anatomy of the human thorax and abdomen. It undertakes this by utilising a regional approach (as against a systems approach), emphasising the interplay of the different body systems within this part of the axial skeleton. The relationship between form and function, at a topographical level, will underpin all teaching of this unit.

300564.1 Animal Behaviour

Credit Points 10 **Level** 3

Special Requirements

All activities in the unit involving live animals must be approved by the UWS Animal Care and Ethics Committee. All activities in the unit involving the use of animal specimens must be approved by the UWS Institutional Biosafety and Radiation Safety Committee.

.....

Focusing on a variety of wildlife and companion animal species, his unit will teach and demonstrate to students the many areas of animal behaviour and the importance of understanding these behaviours in animal management. Students will observe and work with groups of animals on the UWS campus as well as witnessing and participating in events with industry that highlight the importance of knowledge and acceptance of animal behaviour.

300424.1 Animal Health and Welfare

Credit Points 10 **Level** 2

Assumed Knowledge

General biology.

Special Requirements

All activities in the unit involving live animals must be approved by the UWS Animal Care and Ethics Committee. All activities in the unit involving the use of animal specimens must be approved by the UWS Institutional Biosafety and Radiation Safety Committee.

.....

This unit will introduce students to the major issues related to animal health and welfare that form essential knowledge for those working with animals. In particular, students will gain an understanding of disease agents, disease transmission and methods for disease control as well as an introduction to disease diagnosis. In addition, students will gain knowledge about the relationships between animal management and the health and welfare expectations for domesticated and wild animals. The causes of common animal diseases will be introduced as well as the legal obligations of those owning, working or observing animals with respect to maintaining and monitoring their health and welfare. This unit will be taught in a block of eight weeks.

300562.1 Animal Nutrition and Feeding

Credit Points 10 **Level** 3

Assumed Knowledge

Basic knowledge of biology

Equivalent Units

NT305A - Equine Nutrition and Feeding

Special Requirements

All activities in the unit involving live animals must be approved by the UWS Animal Care and Ethics Committee. All activities in the unit involving the use of animal specimens must be approved by the UWS Institutional Biosafety and Radiation Safety Committee.

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This unit aims to give students a good understanding of nutrient requirements of different types of animals and the nutrient composition of common feeds so that they can evaluate and formulate rations to meet a range of animal requirements at different stages of growth, reproduction, lactation and production.

300608.1 Animal Physiology

Credit Points 10 **Level** 2

Assumed Knowledge

Sound knowledge of undergraduate level 1 biology.

Equivalent Units

14405 - Animal Physiology

.....

This unit aims to develop students with an understanding of the basic principles of animal physiology; the physiologic and homeostatic strategies and mechanisms employed by diverse animal groups particularly among the vertebrates in maintaining normal coordinated body functions under various physical conditions. Topics covered include the physiology of transport system, respiratory system, nutritional strategies, hormones and hormonal control, osmoregulation, neural processing, thermoregulation, reproduction and foetal development.

300427.1 Animal Production

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge of introductory Animal Science.

Equivalent Units

AG308A - Animal Production 2 - Production Systems

.....

This unit aims to develop an understanding of the major animal production systems used for food and fibre in Australia (beef, dairy, pigs, poultry and sheep) and to apply this knowledge to improving problematic issues and understanding topical issues. Topics will focus on the applications of animal production principles to these production systems.

300563.1 Animal Reproduction

Credit Points 10 **Level** 3

Assumed Knowledge

Basic knowledge of biology.

Equivalent Units

AG306A - Equine Reproduction and Stud Management

Special Requirements

All activities in the unit involving live animals must be approved by the UWS Animal Care and Ethics Committee. All activities in the unit involving the use of animal specimens must be approved by the UWS Institutional Biosafety and Radiation Safety Committee.

.....

This unit aims to provide students with a sound understanding of reproduction of both domestic and non domestic animals so that they can design and manage a breeding program for a species of choice. Topics will include anatomy and physiology of male and female reproductive tracts; hormonal control of reproduction; fertilisation, pregnancy, parturition and lactation; artificial reproductive techniques.

300421.2 Animal Science

Credit Points 10 **Level** 1

Assumed Knowledge

Basic knowledge of biology.

.....

This unit will provide students with an understanding of comparative physiological and anatomical concepts of a range of mammalian and avian species. Students will develop the skills to apply these concepts in practical situations through the use of field observations and the relationship of these to functional anatomy and physiology of production animals. In addition students will develop many of the principles and concepts employed in animal production. Concepts discussed in lectures are reinforced by practical classes held in the laboratory and on the outdoor laboratories.

300218.1 Applied Aspects of Inorganic Chemistry

Credit Points 10 **Level** 3

Equivalent Units

14108 - Chemistry Topics 1

.....

This unit covers three important applied aspects of modern inorganic chemistry: environmental inorganic chemistry; chemistry in mineral and metallurgical processing; and the characterisation of solid inorganic materials by state-of-the-art analytical techniques. The course material is presented via weekly lectures, one three-day field excursion at the school's field station at Burraga, and some essential integrated hands-on practical work with the relevant analytical instrumentation.

400330.2 Applied Biomechanics of Exercise

Credit Points 10 **Level** 3

Prerequisite

400139.1 Biomechanics and Kinesiology

.....

This unit builds on the basic principles of Biomechanics that is presented in 400139 - Biomechanics and Kinesiology, applying this knowledge to the detailed biomechanical principles of human exercise performance. Biomechanics draws on many of the techniques and principles developed in other disciplines such as applied engineering and neuromuscular physiology. To fully understand the science underlying the optimisation of human movement, students require a comprehensive working knowledge of Biomechanics. This unit represents a theoretical and applied study of selected topics in Biomechanics. It will examine advanced methods and concepts in the biomechanical analysis.

10943.2 Applied Ergonomics

Credit Points 10 **Level** 1

Assumed Knowledge

Knowledge related to the successful completion of first semester year 1 would be of advantage and is assumed.

.....

Ergonomics is the study of the interaction between people, their living and working environments and the objects they use in those environments. Scientific information and research concerning humans is applied to the design of objects, systems and environments they interact with. A sound understanding of the principles of this applied science allows a designer to develop products, systems and environments with optimum usability, providing increased comfort, pleasure and productivity of the end user/operator. Other interchangeable terms for ergonomics are Biotechnology, Ergonometrics, Human Engineering, Human Factors Engineering and Human Factors.

300413.1 Applied Instrumentation in Nanotechnology

Credit Points 10 **Level** 2

Assumed Knowledge

300558 Physics 1, 200224 Chemistry 1, 300221 Biology 1, 300417 Nanotechnology 1, 300559 Physics 2, 300225 Chemistry 2, 200189 Concepts of Mathematics, 300418 Nanotechnology 2

.....

This unit will cover the instrumentation used for the characterisation of materials, devices and biological systems with nanoscale features requiring analysis tools with extreme precision. New and innovative cutting edge characterisation techniques for the analysis of surface and bulk of the devices will be discussed.

300653.1 Applied Nutrition

Credit Points 10 **Level** 3

Equivalent Units

NT307A - Applied Nutrition

.....

This unit builds on basic concepts in human nutrition and facilitates the study of nutrition needs during the life-cycle and for specific lifestyle and nutrition related diseases. This study will incorporate how to assess individuals and diets and to manipulate diets to ensure nutritional sufficiency and to manage nutritional therapy of lifestyle related diseases. This assessment is also applied to the dietary requirements of specific community groups and covers topics in sports nutrition, food supply and food product development.

200041.1 Applied Regression Analysis and Forecasting

Credit Points 10 **Level** 2

.....

This is an intermediate level unit in statistics modelling and forecasting, focusing on applications of linear regression

and forecasting techniques to various real-life problems. Topics include: review of simple linear regression and correlation - model assumptions, method of least squares, inferences (confidence intervals and tests of hypotheses), the ANOVA table, test for lack of fit; the multiple regression model - confounding and interaction in multiple regression; polynomial regression models; indicator (dummy) variables and model building; logistic response function; regression diagnostics; residual analysis, multicolinearity, detection of outliers, identification of influential observations, autocorrelation and some remedial measures for autocorrelation; time-series modelling and forecasting - components of time series, forecasting using smoothing techniques, forecasting using regression models, autocorrelation and auto regressive models.

200033.2 Applied Statistics

Credit Points 10 **Level** 2

Prerequisite

200032.2 Statistics for Business OR **200192.1** Statistics for Science OR **200263.1** Biometry OR **300700.2** Statistical Decision Making

.....

The unit builds on the basic statistical concepts introduced in first year and also prepares students for broader application of statistics for students majoring in both science and business. In broad terms, the unit consists of some common Probability Distributions, Revision of Hypothesis Testing; Analysis of Categorical Data; Analysis of Variance Simple and Multiple Linear Regression Analysis and Correlation; Some Nonparametric Methods, Fundamentals of Time Series Analysis

300465.1 Aquatic Ecology

Credit Points 10 **Level** 3

Equivalent Units

BI304A - Environmental Biology 3.2 (V1)

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Temperate aquatic ecosystems, freshwater, estuarine and marine are some of the most threatened ecosystems. Lack of understanding and pressures from urbanisation have caused alteration of these habitats, sometimes without regard to the ecological and social consequences. This unit will emphasise that to understand human impacts in our environment involves the logic and philosophy of science. On completion of this unit students will have knowledge of the main animal and plants in aquatic ecosystems and the techniques in experimental design and analysis needed to investigate estuarine, freshwater and marine ecosystems. Throughout this unit, the results of scientific and experimental work on temperate aquatic ecosystems, which inform decision-making and conservation of these habitats will be emphasised.

300327.1 Australian Plants

Credit Points 10 **Level** 3

Equivalent Units

BI306A - Plant Form and Function

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This unit enables students to study the biology of Australian plants. The unit covers the topics of origins of the flora of Australia, Gondwanan plants, vegetation structures in Australia, ecology of Australian plants, physiology of Australian plants and the uses of Australian plants.

86301.2 Automated Manufacturing

Credit Points 10 **Level** 3

Prerequisite

300463.1 Fundamentals of Mechanics AND **200237.1** Mathematics for Engineers 1 OR **200191.1** Fundamentals of Mathematics AND **300304.2** Sustainable Design: Materials Technology

Equivalent Units

300735 - Automated Manufacturing

.....

This unit is being replaced by 300735 Automated Manufacturing from 2010. This unit covers areas of manufacturing processes, automated production systems and an introduction to CAD/CAM systems. Aspects of automated manufacturing are included and require students to model simple products in CAD and produce CNC toolpath programs by using the CAM part of the system. Also, it involves students using a CNC lathe and mill to manufacture the product. The mechanics of metal cutting in machine tools is included and ties in with cost estimation techniques of manufacturing processes. Tool materials and wear estimation are also covered. Some of the common forms of manufacturing that are included in this unit are metal forming, extrusion, welding, rolling and metal spinning. In addition, automation systems such as flexible manufacturing, robotic cells and mass production methods are described. Computer-aided manufacturing, process planning and robotic assembly will also be covered.

400748.2 Becoming a Nurse

Credit Points 10 **Level** 1

Equivalent Units

400045 - Nursing Context 1

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This unit introduces the student to the basic constructs that form professional nursing and nursing practice.

400747.2 Behavioural Foundations of Nursing Practice

Credit Points 10 **Level** 1

Equivalent Units

400046 - Nursing Science 1

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This unit introduces the student to psycho-social concepts and principles that underpin human behaviour and inform professional nursing practice.

300219.1 Biochemistry 1

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge of bacterial, plant and animal cell structure; chromosomes, mitosis and meiosis; structure of DNA and its role as carrier of genetic information; Mendelian genetics; chemical bonding, including covalent, hydrogen and ionic bonds and hydrophobic interactions; properties of water, acids, bases and buffers; structure of common functional groups; stereoisomerism; stoichiometry; principles of chemical reactions.

Prerequisite

300221.1 Biology 1 OR **300543.1** Cell Biology AND **300224.1** Chemistry 1 OR **300225.1** Chemistry 2 OR **300550.1** Medicinal Chemistry OR **300554.1** Principles of Chemistry

Equivalent Units

14421 - Biochemistry 1, 14437 - Biochemistry 1, 300555 - Proteins and Genes, BC201A - Biochemistry 2.1 (V1), J2820 - Introductory Biochemistry

Incompatible Units

300227 - General Biochemistry

.....

Students studying at Campbelltown campus should refer to 300555 - Proteins and Genes. This unit develops understanding of the structure, function and synthesis of proteins, principles of enzyme function and regulation, and the structures and roles of nucleic acids, chromosomes and genes. Topics include the characteristic features of the four levels of protein structure and their significance for protein function; protein denaturation; enzyme function, kinetics and inhibition, allosteric enzymes, and mechanisms of enzyme regulation; structure of DNA, RNA, chromosomes, genes; the molecular events in transcription and translation in bacteria and eukaryotes, and protein modification and targeting. Some campus specific topics, such as complex carbohydrate biochemistry and protein glycosylation at Parramatta may be included.

300220.1 Biochemistry 2

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge of enzyme structure and function, understanding of the importance of co-factors to enzyme activity, understanding of enzymatic active sites and catalysis, knowledge of the types of enzymatic inhibition and regulatory mechanisms, knowledge of eukaryotic intracellular compartments and their broad function.

Prerequisite

300219.1 Biochemistry 1 OR **300555.1** Proteins and Genes

Equivalent Units

14427 - Biochemistry 2, 14440 - Biochemistry 2, 300548 - Human Metabolism and Disease, BC202A - Biochemistry 2.2 (V1), J2821 - Biochemistry of Metabolism

Incompatible Units

300227 - General Biochemistry

.....

Students studying at Campbelltown campus should refer to 300548 - Human Metabolism and Disease. This unit develops understanding of the metabolic processes by which an organism degrades food molecules to generate energy and converts excess food molecules into internal fuel stores. Topics include: bioenergetics; structures of key molecules; glycolysis, gluconeogenesis, glycogen synthesis and breakdown; fatty acid oxidation and synthesis; amino acid catabolism; urea synthesis; citric acid cycle; electron transport and oxidative phosphorylation. Emphasis is on regulation and integration of the pathways, including their responses to hormonal regulation. The effects of altered dietary and hormonal status on metabolic pathways and their consequences for the organism will be discussed.

300414.1 Biodevices

Credit Points 10 **Level** 3

Assumed Knowledge

200224 Chemistry 1, 300225 Chemistry 2, 300221 Biology 1, 300418 Nanotechnology 2.

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The unit will cover the enormous nanotechnological breakthroughs in biology covering the nature's nanomachines; lipids, DNA and proteins. The students will learn how only a few basic building blocks would self-assemble into more complex structures, which in turn, self-assemble into more complex hierarchical structures from which one could build biodevices. These fascinating self-organising supramolecular structures generally involve some kind of non-covalent binding. In nature, virtually every living cell is powered by a myriad of tiny rotating nanoturbines called ATPase. The unit will cover the great advances that have been achieved in extremely sensitive biosensors to complex biodevices mimicking biological world.

300539.1 Biodiversity

Credit Points 10 **Level** 1

Assumed Knowledge

Basic Chemistry and Biology.

Equivalent Units

14436 - Foundation Biology, 300222 - Biology 2, BI102A - Biological Sciences 1.2 (VI), BI108A - Biological Sciences 1.2(X), J1761 - General Biology

Incompatible Units

300361 - Introduction to Human Biology, 400130 - Human Medical Sciences 1, B1904 - Biology for Psychologists, B1905 - Genetics and Bioscience for Psychologists, BI005A - Biology 1.1D, BI106A - Biological Sciences, BI107A - Biological Sciences 1.1 (X)

.....

Students studying at Hawkesbury or Parramatta campus should refer to 300222 - Biology 2. This unit demonstrates the diversity of living organisms and viruses, with particular emphasis on those that affect human health. Students will discover how these organisms are classified, and how they have evolved. Besides exploring the breadth of biodiversity,

the unit also examines the links between organisms. Evolutionary advances made by different taxonomic groups to develop mechanisms for reproduction and growth, respiration, maintaining water balance, excretion, digestion, and coordination will be compared. Ultimately human health depends on a sustainable environment and the study of ecosystems will link the biodiversity components of the unit.

700032.1 Biodiversity (UWSC)

Credit Points 10 **Level** 1

Assumed Knowledge

Basic Chemistry and Biology

Equivalent Units

J1761 - General Biology, 14436 - Foundation Biology 2, BI102A - Biological Sciences 1.2 (V1), 300222 - Biology 2, BI108A - Biological Sciences 1.2

Incompatible Units

B1904 - Biology for Psychologists, B1905 - Genetics and Bioscience for Psychologists, BI005A - Biology 1.1D, BI106A - Biological Sciences 1.2, BI107A - Biological Sciences 1.1, 300361 - Introduction to Human Biology, 400130 - Human Medical Sciences 1

Special Requirements

Students must be enrolled at UWS College.

.....

This unit demonstrates the diversity of living organisms and viruses, with particular emphasis on those that affect human health. Students will discover how these organisms are classified, and how they have evolved. Besides exploring the breadth of biodiversity, the unit also examines the links between organisms. Evolutionary advances made by different taxonomic groups to develop mechanisms for reproduction and growth, respiration, maintaining water balance, excretion, digestion, and coordination will be compared. Ultimately human health depends on a sustainable environment and the study of ecosystems will link the biodiversity components of the unit.

400325.1 Bioenergetics of Exercise

Credit Points 10 **Level** 2

Prerequisite

400130.1 Human Medical Sciences 1

.....

This unit investigates energy production for exercise in an integrated fashion. It covers energy pathways and their control; determining pathway contributions to exercise of various types; energy, performance, nutrition, exercise, body composition, weight control and obesity links plus metabolic limitations to exercise.

300221.1 Biology 1

Credit Points 10 **Level** 1

Assumed Knowledge

Basic Chemistry and Biology.

Equivalent Units

14430 - Foundation Biology 1, 300543 - Cell Biology, BI101A - Biological Sciences 1.1 (V1), J1760 - Fundamentals of Cell Biology

Incompatible Units

300361 - Introduction to Human Biology, BI904 - Biology for Psychologists, BI905 - Genetics and Bioscience for Psychologists, BI005A - Biology 1.1D, BI106A - Biological Sciences 1.2, BI107A - Biological Sciences 1.1(X)

.....

Students studying at Campbelltown campus should refer to 300543 - Cell Biology. The cell is the basic unit of life and some basic processes, such as membrane function and the reactions involving DNA, occur in cells of all living organisms. This unit introduces the important biological chemicals involved in those processes and the study of the processes themselves. The unit also examines phenomena such as cell replication, sex cell formation, inheritance, and cell metabolism that are shared by all eukaryotes (animals, protistans, fungi and plants). The biochemical capture of the sun's energy (photosynthesis) is also studied. The evolutionary links between these cellular processes form a framework for the unit, and students consider the origin of life and their own evolution. In addition, students are introduced to the immense potential of recombinant DNA technology.

300222.1 Biology 2

Credit Points 10 **Level** 1

Assumed Knowledge

Basic Chemistry and Biology.

Equivalent Units

14436 - Foundation Biology 2, 300539 - Biodiversity, BI102A - Biological Sciences 1.2 (V1), J1761 - General Biology

Incompatible Units

300361 - Introduction to Human Biology, 400130 - Human Medical Sciences 1, B1904 - Biology for Psychologists, B1905 - Genetics and Bioscience for Psychologists, BI005A - Biology 1.1D, BI106A - Biological Sciences, BI107A - Biological Sciences 1.1 (X)

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Students studying at Campbelltown campus should refer to 300539 - Biodiversity. This unit examines the diversity of living organisms, how these organisms are classified, and how evolutionary processes resulted in such diversity. The unit also addresses the role of cells, tissues and organs in the structure and function of living whole organisms, how these organisms acquire and assimilate the resources necessary for growth, and how they excrete waste, maintain function and coordinate growth and reproduction. The role of ecosystems in maintaining life is also studied. Students conduct basic investigations using techniques such as microscopy, sectioning, staining and dissection.

400139.2 Biomechanics and Kinesiology

Credit Points 10 **Level** 2

Assumed Knowledge

Prior knowledge of structural and functional anatomy of the human body.

Equivalent Units

B2085 - Biomechanics 1, E4320 - Biomechanics of Human Locomotion

.....

The study of biomechanics (the science that examines forces acting upon a structure) and kinesiology (the study of human movement) is essential to understanding how the human body functions in daily activities, exercise and sport. It is also important when considering where problems may arise with human movement, such as with disease processes (such as rheumatoid arthritis), over exercising and postural pathology. This unit is designed to introduce the student to the principles of biomechanics and kinesiology, by studying the principles of human movement, balance and equilibrium, mechanical and kinesiological factors involved in tissue type and motion and the analysis of human movement.

200263.1 Biometry

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Mathematics

Equivalent Units

200032 - Statistics for Business, 200192 - Statistics for Science

Incompatible Units

200190 - Finite Mathematics, 200194 - Engineering Mathematics 3

.....

This unit introduces students to various statistical techniques necessary in scientific endeavours. Presentation of the content will emphasize the correct principles and procedures for collecting and analysing scientific data, using a 'hands-on' approach. Topics include effective methods of gathering data, statistical principles of designing experiments, error analysis, describing different sets of data, probability distributions, statistical inference, non-parametric methods, and simple linear regression and correlation.

700033.1 Biometry (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

200192 - Statistics for Science, 200032 - Statistics for Business

Incompatible Units

200190 - Finite Mathematics, 200194 - Engineering Mathematics 3

Special Requirements

Students must be enrolled at UWS College.

.....

This unit introduces students to various statistical techniques necessary in scientific endeavours. Presentation of the content will emphasize the correct principles and procedures for collecting and analysing scientific data, using a 'hands-on' approach. Topics include effective methods of gathering data, statistical principles of designing experiments, error analysis, describing different sets of data, probability distributions, statistical inference, non-parametric methods, and simple linear regression and correlation.

300540.1 Biomolecular Dynamics

Credit Points 10 **Level** 2

Assumed Knowledge

A demonstrated understanding of, and competence with, basic chemical principles including SI units, chemical symbols, formulae and equations, nomenclature, stoichiometry, the mole concept and associated calculations, states and properties of matter, thermodynamics, chemical equilibria, acids and bases, pH and electrochemistry, to a standard equivalent to that presented in Chemistry 1 (or equivalent). Completion of first-year mathematics would also be assumed knowledge.

Prerequisite

300224.1 Chemistry 1 OR **300554.1** Principles of Chemistry

Equivalent Units

300236 - Physical Chemistry 2, J2776 - Physical Chemistry 2

.....

Students studying at Parramatta campus should refer to 300236 - Physical Chemistry 2. The unit provides the understanding of the chemical principles as applied to biological molecules (biomolecules). Chemical and electrochemical energy transformations approaching equilibria and rates of biological processes are studied and further explored for useful experimental and data-analysis skills. Selected areas including enzyme kinetics or membrane equilibria will be studied.

300541.1 Biomolecular Frontiers

Credit Points 10 **Level** 1

Special Requirements

Only available to students enrolled in the Bachelor of Biomolecular Science.

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Students will learn about exciting and sometimes contentious issues in the biomolecular sciences: including stem cell research; cloning and genetic engineering; new drug development; nanoscience and human health; circadian rhythms; origins of new viruses; the human genome and human health; NMR and health; fraud, plagiarism and ethics in science; finding new drugs; computer-aided drug design; biosafety and biosecurity. Guest lecturers will present special insights into new developments. Students will gain practical experience in

skills which are essential for biomolecular science: scientific writing, locating and accessing information for researching a scientific topic, and oral presentation skills.

300542.1 Biomolecular Science Project

Credit Points 10 **Level** 3

Assumed Knowledge

All level 2 core units in their key program.

Equivalent Units

14117 - Chemistry Project, 300299 - Chemistry Project 3, J3659 - Biological Science Project, J3662 - Chemistry Project

.....

Students studying at Parramatta campus should refer to 300299 - Chemistry Project 3. This unit provides the student with an introduction to thinking as a research scientist whilst developing methodological and practical skills in a particular area of interest. The student undertakes a minor research project under directed supervision, during which they outline the problem and undertake a full literature review, perform appropriate experiments, and analyze and discuss the results in a formal report.

300644.1 Biophysics

Credit Points 10 **Level** 3

Assumed Knowledge

HSC level Mathematics. Students should have completed at least one first-year university Biology unit.

Equivalent Units

J3719 - Biophysics

.....

This unit introduces students to the application of physics and engineering principles to biology. Artificial and cellular membranes are studied in theory and in the laboratory, with emphasis on membrane pumps and channels. Laboratory classes include the study of membrane transport processes using radioisotopes. Students are trained in the principles and use of the electron microscope and magnetic imaging (MRI).

300610.1 Biotechnology

Credit Points 10 **Level** 3

Prerequisite

300219.1 Biochemistry 1 OR **300555.1** Proteins and Genes AND **300300.1** Microbiology 1

Equivalent Units

14455 - Biotechnology

Special Requirements

In addition to the pre-requisite units, students must also pass one other undergraduate Level 3 Biology unit

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This unit is an interdisciplinary unit encompassing modern and traditional aspects of the subject. Areas such as environmental, food, plant and molecular biotechnology will be studied. Special emphasis will be given to addressing biotechnological solutions to problems of economic, environmental and health significance. The unit also addresses aspects of commercialization and protection of intellectual property as well as bioethical and safety issues.

14455.1 Biotechnology

Credit Points 10 **Level** 3

Assumed Knowledge

300219 Biochemistry 1, 300220 Biochemistry 2, 300300 Microbiology 1.

.....

This unit has been replaced by 300610 Biotechnology in Spring 2009. This is an interdisciplinary unit encompassing modern and traditional aspects of biotechnology. Areas such as bioprospecting, bioremediation, food, bacterial, fungal, plant and animal biotechnology will be studied. Emerging new areas such as genomics and proteomics will be covered. Special emphasis will be given to addressing biotechnological solutions to problems of economic significance to Australia. The course finishes with a discussion on aspects of commercialisation and protection of intellectual property as well as bioethical and safety issues. Practicals, computer workshops, excursions and discussion groups reflect the lecture course.

400363.1 Block Clinical Practicum (TCM)

Credit Points 10 **Level** 4

Assumed Knowledge

Equivalent experience and skills to Traditional Chinese Medicine Practice 4.

Special Requirements

To undertake this unit, students must comply with the following special requirements: completion of a Prohibited Persons Declaration; Criminal Record Check Clearance; Students must possess a current, Workcover Authority approved First Aid Certificate;

.....

This unit provides the student with intensive, supervised clinical practice experience. Arrangements will be made for students to complete this stage in China at an assigned hospital. This will involve students paying their own travel fares, as well as, training and accommodation fees to the Chinese institution. This unit represents the final clinical practicum stage and development of clinical skills. Students will be expected to demonstrate competence in handling patients in a clinical context, and manage their integrated care using TCM.

300328.1 Botany

Credit Points 10 **Level** 2

Assumed Knowledge

Basic knowledge in biology.

Equivalent Units

BI103A - Botany and Taxonomy

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This unit introduces students to the study of botany so that they will develop a knowledge and understanding of plants.

The unit covers the topics of plant anatomy, evolution, morphology and taxonomy, economically important plants and an introduction to Australian plants.

200088.1 Brand and Product Management

Credit Points 10 **Level** 3

Assumed Knowledge

A sound knowledge of marketing principles and of the key elements of consumer behaviour, marketing research and marketing communications.

Prerequisite

200083.1 Marketing Principles

Equivalent Units

MK205A - Brand Management

.....

This unit focuses on the role of brand and product management in the context of planning and implementing marketing strategies and is intended to develop a critical appreciation of the inherent challenges contemporary firms encounter in creating and maintaining brand equity.

300088.1 Broadband Networking

Credit Points 10 **Level** 3

Prerequisite

300112.1 Digital Communication Technology

.....

This unit covers networking technologies, and standards of broadband networks that dominate both the WAN and LAN markets. These include frame relay, ATM, broadband ISDN and high-speed LANs. Quality of Service (QoS) issues, and the need to support multimedia and real-time traffic, the need to control congestion and the need to provide different levels of QoS to different applications are the focus.

BG101A.1 Building 1

Credit Points 10 **Level** 1

Equivalent Units

300706 - Building 1

.....

This unit provides students with an overview of building regulations and construction techniques with an emphasis on low rise residential buildings; techniques of surveying land and buildings. Content: General process, local council, building regulations, permits, professions, players and makers, constraints (environmental and regulation), construction process (foundations, footings, framing, structure, cladding, services), history (architectural styles, economy), structural elements (bracing systems), envelope, surveying.

BG103A.1 Building 2

Credit Points 10 **Level** 1

Assumed Knowledge

Basic understanding of residential construction.

Equivalent Units

300707 - Building 2

.....

This unit provides students with an overview of the design, classification, applicable Australian Standards, structural systems, construction techniques, materials handling systems, building services, fit-out and finishes for larger scale buildings.

200292.1 Building Law

Credit Points 10 **Level** 3

Equivalent Units

LW305A - Building Law 2

.....

This unit is designed to provide students with an awareness of Industrial Relations and Dispute Resolution. Content: Employment Law, unfair dismissal, constitutional law, awards, enterprise agreement, course of disputes, method of dispute resolution, alternate dispute resolution, mock dispute resolution, future trends in dispute resolution.

BG302A.1 Building Regulation Studies

Credit Points 10 **Level** 3

Equivalent Units

300722 - Building Regulation Studies

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To develop an awareness of the regulatory construction and equipment techniques in the detection, prevention, behaviour and control of fire; an understanding of and an appreciation for buildings; to extend knowledge of the modern built environment for appraisal at Council level in planning and development procedures related to the inspection role, and the legal responsibilities in fire engineering and hazard assessment. Building regulations and fire safety; performance and prescription; fire literature and development; materials in fire, fire resisting construction; detection/alarm systems; egress and human behaviour; spread of fire; work cover; smoke movement and control; fire fighting equipment; essential services and heritage buildings.

300543.1 Cell Biology

Credit Points 10 **Level** 1

Assumed Knowledge

Basic Chemistry and Biology

Equivalent Units

14430 - Foundation Biology, 300221 - Biology 1, BI101A - Biological Sciences 1.1(X), J1760 - Fundamentals of Cell Biology

Incompatible Units

300361 - Introduction to Human Biology, BI904 - Biology for Psychologists, BI905 - Genetics and Bioscience for Psychologists, BI005A - Biology 1.1D, BI106A - Biological Sciences 1.2, BI107A Biological Sciences 1.1(X)

.....

Students studying at Hawkesbury or Parramatta campus should refer to 300221 - Biology 1. Cells are the foundations of life, and an understanding of cell structure and function is required for anyone working in the medical science field. Most diseases result from or lead to malfunctioning of some aspect of cellular processes such as transport across membranes or cell replication. Underlying normal cell function, however, are the molecules of which cells are composed. Consequently, the unit will introduce lipids, carbohydrates, amino and nucleic acids, then study the processes by which these molecules are manipulated to build and recycle organelles, store and transport energy and transmit genetic information in both the prokaryote and eukaryote domains. Accordingly, the unit will include cell replication, sex cell formation, Mendelian genetics as well as cellular respiration and DNA replication, transcription and translation. The role of DNA technology in biomolecular science will be an important component of the unit and will unify the several topics listed above.

700034.1 Cell Biology (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300221 - Biology 1, J1760 - Fundamentals of Cell Biology, 14430 - Foundation Biology 1, BI101A - Biological Sciences 1.1

Incompatible Units

BI005A - Biology 1.1D, BI107A - Biological Sciences 1.1, BI106A - Biological Sciences 1.2, BI904 - Biology for Psychologists, BI905 - Genetics and Bioscience for Psychologists, 300361 - Introduction to Human Biology

Special Requirements

Students must be enrolled at UWS College.

.....

Cells are the foundations of life, and an understanding of cell structure and function is required for anyone working in the medical science field. Most diseases result from or lead to malfunctioning of some aspect of cellular processes such as transport across membranes or cell replication. Underlying normal cell function, however, are the molecules of which cells are composed. Consequently, the unit will introduce lipids, carbohydrates, amino and nucleic acids, then study the processes by which these molecules are manipulated to build and recycle organelles, store and transport energy and transmit genetic information in both the prokaryote and eukaryote domains. Accordingly, the unit will include cell replication, sex cell formation, Mendelian genetics as well as cellular respiration and DNA replication, transcription and translation. The role of DNA technology in biomolecular science will be an important component of the unit and will unify the several topics listed above.

300544.1 Cell Signalling

Credit Points 10 **Level** 3

Assumed Knowledge

Detailed knowledge of protein structure and function; gene expression, protein synthesis, post-translational modifications to proteins; enzyme catalysis; protein targeting and secretion. Basic skills for a biochemistry laboratory.

Prerequisite

300555.1 Proteins and Genes OR **300219.1** Biochemistry 1

Incompatible Units

300223 - Cell Signalling and Molecular Immunology, J3830 - Immunology and Cell Signalling

.....

Cell signalling looks at the molecular mechanisms by which cells communicate and make responses to each other. Disorders of cell signalling have major impacts on human health and are involved in many metabolic disorders, brain function, the immune system, cancer and embryonic development. Knowledge of cell signalling pathways has important spin-offs for design of new drugs. This unit investigates the action of hormones, growth factors, cytokines and morphogens; their receptors and signalling pathways; and the cellular responses they trigger, such as altered metabolism, shape, differentiation, death. Students will expand their understanding of current developments by scientific reading and group discussion. Laboratory work will enable students to develop basic skills in cell culture techniques.

300611.1 Chemical Mineralogy

Credit Points 10 **Level** 2

Prerequisite

300224.1 Chemistry 1 OR **300554.1** Principles of Chemistry AND **300225.1** Chemistry 2

Equivalent Units

14509 - Chemical Mineralogy

.....

This unit covers the composition, structure and formation of selected examples from the silicate and non-silicate mineral groups. It deals with the structures of minerals and their determination, interpretation of structural data in the literature, aspects of solid solution, the forces which stabilize mineral lattices and the grouping of various minerals in terms of their chemical and structural characteristics. The chemistry of mineral formation at high and low temperatures will be examined. Analytical methods (X-rays, SEM and microprobe and classical) in the study of minerals and their properties are explored.

700043.1 Chemistry (UWSC Foundation Studies)

Credit Points 10 **Level** Z

Special Requirements

Students must be enrolled at UWS College. This unit is only available to UWS College students.

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This unit introduces students to the basic concepts required to satisfy the needs of most first year university science courses in both skill and content areas. It is intended that students will gain a greater understanding of the theoretical concepts covered in the course by completing the practical component of the course.

300224.2 Chemistry 1

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Chemistry (2 unit) or HSC Multi-strand Science (3 or 4 unit) or equivalent. UWS Chemistry Bridging course or equivalent.

Equivalent Units

14101 - Foundation Chemistry 1, 300554 - Principles of Chemistry, CH103A - Chemistry 1.1, J1753 - Chemistry 1

Incompatible Units

80800 - Introductory Chemistry 1, CH101A - Introductory Chemistry 1.1D, 300449 - Introductory Chemistry

.....

This unit provides a broad introduction to the fundamental principles common to all branches of chemistry. The unit is intended to serve the needs not only of chemistry majors, but also those intending to specialise in other related disciplines. The unit focuses on scientific notation, nomenclature, chemical equations, stoichiometry, the mole concept, atomic structure, periodicity, electronic configuration, structure and bonding, states of matter, intermolecular forces, properties of solutions, chemical thermodynamics, chemical equilibria, and electrochemistry.

700036.1 Chemistry 1 (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300224 - Chemistry 1, 14101 Foundation Chemistry 1, 300554 - Principles of Chemistry, CH103A - Chemistry 1.1, J1753 - Chemistry 1

Incompatible Units

80800 - Introductory Chemistry 1, CH101A - Introductory Chemistry 1.1D, 300469 - Introductory Chemistry

Special Requirements

Students must be enrolled at UWS College

.....

This unit provides a broad introduction to the fundamental principles common to all branches of chemistry. The unit is intended to serve the needs not only of chemistry majors, but also those intending to specialise in other related disciplines. The unit focuses on scientific notation, nomenclature, chemical equations, stoichiometry, the mole concept, atomic structure, periodicity, electronic configuration, structure and bonding, states of matter, intermolecular forces, properties of solutions, chemical thermodynamics, chemical equilibria, and electrochemistry.

300225.2 Chemistry 2

Credit Points 10 **Level** 1

Assumed Knowledge

A demonstrated understanding and competence with basic chemical principles including SI units, chemical symbols, formulas and equations, nomenclature, stoichiometry, the mole concept, bonding, molecular shape and polarity, states and properties of matter, thermodynamics, equilibria, acids and bases, pH and electrochemistry, to a standard equivalent to that presented in Chemistry 1 (or equivalent).

Equivalent Units

14102 - Foundation Chemistry 2, 300550 - Medicinal Chemistry, CH104A - Chemistry 1.2, J1754 - Organic Chemistry 1

Incompatible Units

CH102A - Biological Chemistry 1.2D

.....

This unit is designed to continue the development of students' understanding of the basic principles of chemistry, with an emphasis on the chemistry of carbon compounds. The unit focuses on introductory chemical dynamics, together with an in-depth treatment of the structure, nomenclature and reactivity of the principal organic functional groups. The unit provides a necessary foundation for subsequent related studies in chemistry, biochemistry, food chemistry, nutrition science, toxicology, environmental science, and related biological sciences and technologies.

700037.1 Chemistry 2 (UWSC)

Credit Points 10 **Level** 1

Assumed Knowledge

A demonstrated understanding and competence with basic chemical principles including SI units, chemical symbols, formulas and equations, nomenclature, stoichiometry, the mole concept, bonding, molecular shape and polarity, states and properties of matter, thermodynamics, equilibria, acids and bases, pH and electrochemistry, to a standard equivalent to that presented in Chemistry 1 (or equivalent).

Equivalent Units

300225 - Chemistry 2, 14102 - Foundation Chemistry 2, 300550 - Medicinal Chemistry, CH104A - Chemistry 1.2, J1754 - Organic Chemistry 1

Incompatible Units

CH102A - Biological Chemistry 1.2D

Special Requirements

Students must be enrolled at UWS College.

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This unit is designed to continue the development of students' understanding of the basic principles of chemistry, with an emphasis on the chemistry of carbon compounds. The unit focuses on introductory chemical dynamics, together with an in-depth treatment of the structure, nomenclature and reactivity of the principal organic functional groups. The unit provides a necessary foundation for subsequent related studies in chemistry, biochemistry, food chemistry, nutrition science, toxicology, environmental science, and related biological sciences and technologies.

400819.2 Child and Adolescent Nursing Studies

Credit Points 10 **Level** 3

Equivalent Units

400760 - Family Health Care: Child and Adolescent Nursing

Special Requirements

Students must be enrolled in the Bachelor of Nursing Studies to enrol in this unit.

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This unit version replaces version 1 from 2010. The unit explores physical, social, political and community issues which impact on the health of children and adolescents. The knowledge gained will be appropriate for working with children and families within a hospital or community setting. The concept of health promotion and the prevention of illness underpins this unit.

400162.1 Child and Adolescent Occupations

Credit Points 10 **Level** 2

Equivalent Units

E2043 - Occupational Therapy 3

Special Requirements

To undertake this unit, students must comply with the following special requirements: completion of a Prohibited Employment Declaration; Criminal Record Check clearance; provide evidence of compliance with the occupational screening and immunisation policy of NSW Health; possess a current WorkCover Authority approved First Aid Certificate.

.....

This unit will explore roles, activities and performance components relevant to occupational therapy in childhood and adolescence. The unit considers the concept of 'typical' development and deviations that may have implications for paediatric and adolescent clients. Various models and frames of reference are considered including the family centred practice approach. There will be a self directed and reflective learning approach in this unit. Students will learn about paediatric and adolescent occupational therapy practice in different clinical settings. They will observe and interact with clients in the UWS Uniclinic. This will assist students with the links between theory and practice.

101325.1 Children, Wellbeing and Society

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge of sociological or psychological concepts and theories.

Equivalent Units

25042 - Youth, Childhood & Health: Social Perspectives

Special Requirements

Successful completion of 80 credit points.

.....

Childhood is something we all experience yet few of us understand. This unit provides the opportunity for students to develop concepts, theories and issues from within the sociology of childhood and from the social sciences by examining a range of life course themes and experiences of childhood (including adolescence). Central to the unit is the notion that childhood is an individual experience that occurs in and is impacted upon by a variety of social, cultural and historical contexts, which are negotiated through the sense of self fostered in childhood. The subject critically explores a variety of topics of relevance to understanding childhood in the 21st century. This unit aims to explore the dominant discourses of childhood (eg developmental and socialisation theories) and their impact on the lives of children.

400349.1 Chinese Herbal Medicine 1

Credit Points 10 **Level** 1

Assumed Knowledge

Assumed knowledge equivalent to Traditional Chinese Medicine 1.

Special Requirements

To undertake this unit, students must comply with the following special requirements: Completion of a Prohibited Employment Declaration; Criminal Record Check Clearance.

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Herbal medicine is one of the principal therapeutic interventions in TCM. This unit introduces students to the therapeutic and reference organisation of Chinese medicinals, and enables students to commence using the materia medica. It covers the major commonly used medicines in each of the eighteen categories of the Chinese materia medica, including pin-yin name, botanical name, properties, actions, indications, contraindications and combined usage. This unit also expands upon the student's understanding of TCM theory and practice principles.

400351.1 Chinese Herbal Medicine 2

Credit Points 10 **Level** 2

Special Requirements

To undertake this unit, students must comply with the following special requirements: Completion of a Prohibited Employment Declaration; Criminal Record Check Clearance.

.....

Herbal medicine is the principal therapeutic intervention in TCM. This unit follows from Chinese Herbal Medicine 1, and begins the study of classical Chinese herbal formulas, which form the basis for clinical prescribing in Chinese herbal medicine. The focus of this unit is to compare and contrast the main formulas in specified categories, and to analyse the specific actions of the herbs that make up the formula. Students will be required to formulate, assemble and prepare complex prescriptions. This unit expands upon the student's knowledge of the Chinese materia medica, as well as the understanding of Traditional Chinese Medicine (TCM) theory and practice principles.

400353.1 Chinese Herbal Medicine 3

Credit Points 10 **Level** 2

Assumed Knowledge

Assumed knowledge equivalent to Chinese Herbal Medicine 2 and Traditional Chinese Medicine 2.

Special Requirements

To undertake this unit, students must comply with the following special requirements: Completion of a Prohibited Employment Declaration; Criminal Record Check Clearance.

.....

Herbal medicine is the principal therapeutic intervention in TCM. This unit completes the study of classical Chinese herbal formulas, which forms the basis for clinical prescribing in Chinese herbal medicine. The focus of this unit is to compare and contrast the main formulas in specified categories, and to analyse the specific actions of the herbs that make up the formula. Students will be required to formulate, assemble and prepare complex prescriptions. This unit expands upon the student's knowledge of the Chinese materia medica, as well as the understanding of Traditional Chinese Medicine (TCM) theory and practice principles. The clinical aspect includes prescription writing and preparation of formulas.

400357.1 Chinese Internal Medicine 1

Credit Points 10 **Level** 3

Assumed Knowledge

Assumed knowledge equivalent to Traditional Chinese Medicine 3, and Acupuncture 2, and Chinese Herbal Medicine 3.

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The study of internal medicine forms the basis of clinical practice in traditional Chinese medicine. This unit begins to bridge the gap between theory and practice. It enables the health professional to analyse, diagnose and treat common internal diseases with both acupuncture and herbal medicine and using a Traditional Chinese Medicine (TCM) approach. The focus of this unit is on the analysis of major presenting symptoms.

400360.1 Chinese Internal Medicine 2

Credit Points 10 **Level** 4

Assumed Knowledge

Assumed knowledge equivalent to Traditional Chinese Medicine 3, and Acupuncture 2, and Chinese Herbal Medicine 3.

.....

This unit builds on Chinese Medicine 1 and extends the student's ability to analyse, diagnose and treat common and difficult diseases in internal medicine with both acupuncture and herbal medicine and using a Traditional Chinese Medicine (TCM) approach. Students will develop an understanding of the causes and pathophysiological mechanisms of a wide range of diseases.

300005.1 Circuit Theory

Credit Points 10 **Level** 2

Assumed Knowledge

Content contained in 200238 - Mathematics for Engineers 2. Ordinary Differential Equations, inlcuding first and second order. Laplace transforms: definition, inverse transform, s-shift, unit step function and Dirac delta function, transform of a derivative, solving differential equations.

Prerequisite

300021.1 Electrical Fundamentals

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This unit aims to equip students with the tools needed for the design and analysis of electrical and electronic circuits. The unit also introduces various techniques of circuit analysis, convolution, mutual coupling, frequency response and two ports loop.

400355.1 Classical Texts in Chinese Medicine

Credit Points 10 **Level** 3

Assumed Knowledge

Assumed knowledge equivalent to Traditional Chinese Medicine 3, and Chinese Herbal Medicine 3.

.....

This unit provides learning experiences that enable the students to gain an understanding of the original theories on physiology, pathology, diagnosis, differentiation and treatment of diseases through select periods of Chinese history. Many theoretical concepts, disease syndromes and herb formulas are still in current usage. Major schools of TCM thought will be covered through the study of important classical texts. This unit expands upon the student's understanding of TCM theory and practice principles through study of the classical literature.

400262.1 Clinical Diagnosis

Credit Points 10 **Level** 2

Prerequisite

400130.1 Human Medical Sciences 1

Equivalent Units

E2323 - Clinical Pathology & Diagnosis

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This unit is designed to introduce students to detailed knowledge of physical examination skills and diagnostic techniques necessary for the diagnosis of abnormalities. Because of the significance of the primary contact health practitioner and diagnostician role, it is essential that students become competent at disease presentation, various diagnostic methods, selection of appropriate laboratory tests and interpretation of the findings. This unit will also help students to develop crucial clinical reasoning skills required in the medical decision making process.

400166.1 Clinical Neurosciences

Credit Points 10 **Level** 2

Prerequisite

400130.1 Human Medical Sciences 1

Equivalent Units

400964 - Clinical Neurosciences

Incompatible Units

E2046 - Neurology and Clinical Psychiatry.

.....

This unit is being replaced by unit code 400964 in 2010. This unit is intended to provide students with an in depth study of those human medical sciences which underpin specific intervention principles and procedures to be taught in the professional units. Primary contact health care providers have professional requirements that cover a broad spectrum of diagnostic, medical and physical practices. In order to ensure a suitable basis for later practice, students require a detailed knowledge and understanding of clinical neurosciences including histology, embryology, anatomy, and physiology of nervous system and the clinical implications.

400135.1 Clinical Pharmacology and Microbiology

Credit Points 10 **Level** 2

Prerequisite

400130.1 Human Medical Sciences 1

Equivalent Units

E3325 - Medicine and Pharmacology.

.....

This unit explores in greater depth those medical sciences fundamental to the clinical practice of alternative and complimentary medicine. The pharmacology component of this unit is intended to provide students with thorough preparation in the fundamental aspects of this discipline. General introduction of pharmacological concepts will be followed by the discussion of common drugs affecting different body systems. The microbiology component of this course is designed to provide students with the knowledge and skill to identify likely causative organisms, understand the complex relationship between host and pathogen, and select and implement rational clinical and pharmacological therapeutic strategies as required.

300089.3 Commercial Applications Development

Credit Points 10 **Level** 2

Assumed Knowledge

It is assumed that students have an introductory understanding (Level 1 equivalent), of programming, analysis & design and database principles.

Prerequisite

300580.1 Programming Fundamentals AND **300585.1** Systems Analysis and Design AND **300104.1** Database Design and Development

.....

This unit builds on students' existing understanding of programming principles to develop software applications situated within the Microsoft Office environment. Typical applications of this type might incorporate Microsoft Word, Excel, Access or PowerPoint. This unit covers the development of programs for Microsoft Office Applications using both recorded macros and Visual Basic for Applications Procedures. It provides a solid understanding of the knowledge and skills required to create applications using the Microsoft Visual Basic for Application's inbuilt functions and classes. It is a preparation and foundation for the construction of related, but more complex, applications using the Microsoft API or VB.NET. The unit also provides a foundation for the use of scripting and macro languages both for the web and for operating systems.

300068.2 Communication Electronics

Credit Points 10 **Level** 5

Prerequisite

200238.1 Mathematics for Engineers 2 AND **300025.1** Electronics

Equivalent Units

84488 - Advanced Electronics

.....

The unit presents the theory and many of the devices used in radio frequency (RF) communication electronics. S-parameters are presented and advanced to cover areas such as- multiport networks and lossless networks. S-parameter measurement techniques are presented and tested in the lab. The analysis/design of common RF components including power splitters, directional couplers, circulators and phase shifters are developed. Microstrip transmission lines are presented as a practical means of interconnecting devices at RF frequencies. RF transistor amplifier and oscillator design is presented in detail. RF mixers, RF filters and RF receiver architectures are also discussed in detail.

400732.1 Communication in Health

Credit Points 10 **Level** 1

Equivalent Units

400131 - Communication for the Helping Professions.

.....

Communication is integral to professional relationships, whether working individually with a client, educating community members on health matters, or working with other professionals as part of a multidisciplinary team. This unit aims to develop communication skills in preparation for work within the health professions across these areas. Communication skills will include those needed to form therapeutic relationships with individual clients and groups, as well as those required to communicate health information to clients, groups and the wider community. Students will develop skills to establish appropriate working relationships with professional colleagues.

300007.1 Communication Systems

Credit Points 10 **Level** 3

Prerequisite

300057.1 Signals and Systems

.....

This unit will provide a basic introduction to communication systems and techniques. Specific topics covered include energy and power spectral density, amplitude modulation, frequency modulation, pulse modulation, an overview of digital modulation techniques, noise in communication systems and an overview of current telecommunication systems; spread spectrum systems, optical communication

systems, radio broadcasting and mobile communication systems.

400820.2 Community Health and the Nurse

Credit Points 10 **Level** 3

Incompatible Units

400751 - Nursing and Healthy Communities

Special Requirements

Students must be enrolled in the Bachelor of Nursing Studies to enrol in this unit.

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This unit introduces the student to psychosocial concepts and social model of health principles that promote and sustain the health of communities, and inform professional nursing practice.

300090.1 Compiler Theory and Practice

Credit Points 10 **Level** 3

Assumed Knowledge

This unit relies heavily on material presented in Systems Programming 1, Data Structures and Algorithms and Formal Languages and Automata; particularly the last mentioned from which it follows on. This is an advanced unit, typically offered at third year or postgraduate level and could not be undertaken sensibly without at least the material listed.

Prerequisite

300167.1 Systems Programming 1 AND **300103.1** Data Structures and Algorithms AND **300121.1** Formal Languages and Automata

Equivalent Units

14957 - Compiler Theory & Practice

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The discovery and practical application of compiler theory has been one of the major achievements of computer science since the mid 1950s. This unit provides computing or computer science majors with an introduction to one of the cornerstones of their discipline. The unit provides: an accurate conceptual model of what occurs when source code is being compiled; an appreciation of the limitations of compilers and translators in general; the knowledge and practical skills necessary to design and implement interfaces of greater syntactic complexity than menus; sufficient general technical knowledge to provide an adequate basis for acquiring product-specific technical knowledge, and then to provide applications development support in any programming language environment.

300373.1 Complex Forensic Case Studies

Credit Points 10 **Level** 3

Assumed Knowledge

Successful completion of first year Forensic Science and/or Criminology units; understanding of the principles and practice of collecting and analysing physical evidence.

Special Requirements

This unit is only available to students who are enrolled in 3589 Bachelor of Science (Forensic Science).

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This is an advanced and integrating unit for students who have a strong background in the collection and analysis of forensic evidence. Students are required to use their skills and knowledge in the context of a range of forensic cases, which may raise contemporary issues such as terrorism, corporate crime, computer crime, money laundering and people smuggling. As well as gaining a deeper understanding of the complex social, legal, national and international contexts in which forensic evidence is evaluated, students will gain experience of managing a variety of types of evidence within a number of case studies, including the preparation and presentation of expert witness reports and consideration of the ethical issues related to the role of an expert witness.

300092.1 Computer Architecture

Credit Points 10 **Level** 3

Prerequisite

300096.1 Computer Organisation

Equivalent Units

14949 - Computer Architecture

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This unit is designed for computer science students, particularly those interested in systems programming, hardware/software interfaces, and computer system performance evaluation. The topics cover memory system organisation and architecture, CPU functional organisation, pipelined and superscalar microarchitectures, multiprocessor systems, and I/O systems. After completing this unit students will understand the major issues in the state-of-the-art computer architecture, especially modern microprocessors, and will be able to use this knowledge as a basis for product choice and systems configuration.

300447.1 Computer Forensics Workshop

Credit Points 10 **Level** 3

Assumed Knowledge

This is the capstone practical unit for Computer Forensics major of the Bachelor of Computer Science, as such it is assumed that the students of this unit will have completed all other units in the major.

Prerequisite

300149.1 Operating Systems AND **300165.1** Systems Administration Programming AND **300143.1** Network Security

Special Requirements

This unit requires specialised technical laboratory facilities, and specialist academic staff that are very limited in number. As such the School of Computing & Math believes it can support the running of this unit for no more than 20-24 students per year which is the expected number completing the Computer Forensics major. In addition the specified pre-requisites are unlikely to be met by students not enrolled in the Bachelor of Computer Science.

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This unit is composed of a series of investigative workshops that put into practice, in a Computer Forensics context, many of the technical skills developed in earlier pre-requisite units. The unit is intended to not only further develop these skills but to instil best technical practice, sound understanding of technical investigative techniques and documentation of the results of investigation. Workshop topic areas include: clean media copying techniques, search and identification of hidden data, building profiles of computer activities through probing and analysis of log files and how to prepare a system and network to best support subsequent intrusion and activity detection.

300093.1 Computer Graphics

Credit Points 10 **Level** 3

Prerequisite

300103.1 Data Structures and Algorithms

Equivalent Units

14956 - Computer Graphics

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Computer graphics is a fascinating area of computer science. It is widely used as a tool for visualising information in a broad variety of fields, including science and engineering, medicine, architecture, and entertainment. This unit teaches the concepts and techniques of computer graphics. It is designed as an introduction to the study of visual presentation techniques. Topics covered are intended to provide students with an understanding of the basic principles for design, use and understanding of graphics systems. The unit covers the basic concepts in computer graphics using VOGLE library on UNIX. Techniques and algorithms will be emphasized and programming in C or C++ under UNIX will be required.

300565.1 Computer Networking

Credit Points 10 **Level** 2

Assumed Knowledge

Fundamentals of computer architecture, binary and hexadecimal numbering systems, and programming principles. They should also have a working knowledge of the World Wide Web.

Equivalent Units

300094 - Computer Networking Fundamentals, 300086 - Applied Data Communications and Networking

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This introductory unit in computer systems networking covers basic networking topologies, Ethernet fundamentals, ISO OSI layers, routing, switching and sub-nets, the Internet architecture, networking protocols including TCP/IP, important networking devices such as repeaters, hubs, bridges, routers and gateways, basic management and security issues. This unit is also the first of three units which will prepare students for industry based networking certification.

700012.1 Computer Networking (UWSC)

Credit Points 10 **Level** 1

Assumed Knowledge

Fundamentals of computer architecture, binary and hexadecimal numbering systems, and programming principles. Students should also have a working knowledge of the World Wide Web.

Equivalent Units

300094 - Computer Networking Fundamentals, 300086 - Applied Data Communications and Networking, 300565 - Computer Networking

Special Requirements

Students must be enrolled at UWS College.

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This introductory unit in computer systems networking covers basic networking topologies, Ethernet fundamentals, ISO OSI layers, routing, switching and sub-nets, the Internet architecture, networking protocols including TCP/IP, important networking devices such as repeaters, hubs, bridges, routers and gateways, basic management and security issues. This unit is also the first of three units which will prepare students for industry based networking certification.

300095.2 Computer Networks and Internets

Credit Points 10 **Level** 3

Prerequisite

300094.1 Computer Networking Fundamentals OR **300565.1** Computer Networking OR **300086.1** Applied Data Communications and Networking

Special Requirements

This unit is offered at an advanced level and students need to have a good knowledge in fundamentals of data communications, computer networking and basic knowledge of programming in C++ language to successfully complete the unit.

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This unit provides students with an in-depth understanding of the applications of computer networks and the concept of internetworking through the TCP/IP suite of protocols. Some of the network security threats along with their appropriate counter measures are also discussed. The main focus of the unit is on communication and network devices.

300096.3 Computer Organisation

Credit Points 10 **Level** 2

Prerequisite

300580.1 Programming Fundamentals OR **300027.1** Engineering Computing

Corequisite

200025.1 Discrete Mathematics OR **200237.1** Mathematics for Engineers 1

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This unit is designed for computer science students, particularly those interested in systems programming and hardware development. The students will learn about the interface between the hardware and software of a computer system. This will involve study of some aspects of computer architecture and low level interfacing to gain an insight into CPU organisation at the assembly language level. After completing this unit students will be able to write procedures in an assembly language, and use their understanding of the relationship between the instruction set architecture and the implementation of high level languages to write efficient programs.

300569.1 Computer Security

Credit Points 10 **Level** 3

Assumed Knowledge

The students are expected to have general understanding on computer systems; computer fundamentals, databases, and web technologies.

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This unit identifies and analyses various principles and technologies related to security and privacy and discusses practical application of those principles and technologies in securing computer systems. It is designed to provide basic computer security skills required by any discipline that uses computer systems and also lays a solid foundation for individuals who are keen to pursue a career in computer security. In particular, but not limited to, this unit aims at the implementation and management of security and privacy policies of organisations within the standards and legal framework that is also applicable to the Australian standards.

300364.2 Computing Honours Seminar Program

Credit Points 10 **Level** 5

Special Requirements

Students must be enrolled in an Honours degree.

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The seminar program in an integral part of the Bachelor of Computing (Honours) program. It is structured in such a way that there are extensive links with the other components in the program (Research Process and Practice and Computing Honours Thesis). In undertaking and completing tasks associated with this component the student will be working towards the ultimate goal of completion of the thesis document. Successful completion of the seminar program will allow development of skills, knowledge and a way of thinking which, with the research process and practice component, will assist in the production of the thesis. In this program, students will be given the opportunity to present work in progress reports to peers and academic staff, attend and report research seminars and develop practical experience in articulation of ideas.

300363.2 Computing Honours Thesis

Credit Points 60 **Level** 5

Special Requirements

Students must be enrolled in an Honours degree.

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The aim of this unit is to further develop the student's research and problem solving skills. The student is required to implement the research plan, complete a substantive piece of research in the field of Computing and IT and to communicate the results of that work to an interested and technically literate audience. All projects will therefore contain at least two broad areas of assessment: the substantive work itself and the oral and written communication of the work to others. All assessment components submitted in both of these areas are expected to be of a high professional standard. Students will present their research in the thesis. The thesis topic and structure will vary according to the area of interest of the student and the expertise of the supervisor. The project may comprise theoretical investigation, software or hardware development or some combination of these. The project is meant to be a significant undertaking and to incorporate some element of innovation. Throughout this unit regular planned consultations between the student and supervisor will occur. Students are expected to work to a schedule devised in consultation with their supervisor. The schedule will include set dates for the presentation of draft chapters for review by the supervisor.

300365.1 Computing Research Process and Practice

Credit Points 10 **Level** 7

Equivalent Units

300244 - Information Technology Research Methodology

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The purpose of this unit is to develop knowledge, understanding and application of the process and the practice of inquiry in the field of Computing and IT. This unit does not involve sophisticated, higher order qualitative or quantitative data treatment techniques, but it is expected that students will acquire research knowledge and skills, develop a research design and operationalise it with appropriate procedures. Students will be able to select from a range of research methods appropriate to their individual projects. A major outcome/focus of the unit is on the individualised conceptualisation and development of a structured proposal for conducting dissertation inquiry in the student's area of interest. Ethical issues such as confidentiality and responsibility to those who participate in research projects are stressed and attention is drawn to the political nature of all research. While this unit is intended to formalise research process and practice, students will be working closely with their supervisors applying their knowledge and skills to their individual projects under the guidance of their supervisor. Emphasis will be placed on consultation and negotiation with supervisors and producing deliverables for students' individual projects.

200189.1 Concepts of Mathematics

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Mathematics, Band 4, 5, or 6, or equivalent.

Equivalent Units

300672 - Mathematics 1A

Incompatible Units

200031 - Mathematics for Business, 200195 - Mathematical Methods A, 200196 - Mathematical Methods B, 200237 - Mathematics for Engineers 1

Special Requirements

No student enrolled in the 3621 Bachelor of Engineering degree course should enrol in this unit. Although not equivalent, students will not be allowed to count Mathematical Methods A, Mathematical Methods B, Maths for Business, Engineering Mathematics 1 for credit with Concepts of Maths

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This level one hundred unit provides a solid foundation in the theory and applications of differential and integral calculus, as well as some introductory work on complex numbers and matrix algebra. This unit provides the necessary preparation for many of the later-stage mathematics units.

85251.2 Concrete Structures (UG)

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge of engineering mechanics and statistics

Prerequisite

85006.2 Introduction to Structural Engineering

Corequisite

85010.1 Structural Analysis

Equivalent Units

300736 - Concrete Structures (UG)

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This unit is being replaced by 300736 Concrete Structures (UG) from 2010. This unit provides the foundations of knowledge and understanding for the design of concrete structures. The lectures are focused on structural behaviour, whilst the tutorials address design aspects of relevance to concrete structures. A major component of the unit involves design projects, in which the students are set the task of designing simple but realistic structures using the information gained in lectures and tutorials.

400184.1 Conducting Medicolegal Assessments

Credit Points 10 **Level** 3

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Experienced health professionals may choose to conduct medicolegal assessments as part of their business. These assessments and subsequent reports are different in their intent and format to those completed by treating professionals. This unit teaches students about relevant state and federal legislation and statutes, legal terminology and practices, the personal injury claim process, what is expected of an expert witness, the process of conducting an assessment, report writing skills, and giving evidence in court. While the focus will be on occupational therapy medicolegal assessments, students and professionals from other disciplines should also find this unit of interest.

300617.1 Conservation Biology

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge of first-year university biology equivalent to satisfactory completion of 300221 - Biology 1 and 300333 - Biology 2.

Equivalent Units

BI303A - Environmental Biology 3.1, 300466 - Environmental Biology 3.3

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This unit will develop a sound understanding of the principles and practices of conservation biology in both an Australian and International context. Ethical and historical aspects of conservation biology will also be considered in addition to the science of conservation. Students will gain an understanding of the processes that have led to, and are leading to, species extinction. Methods and issues associated with conservation are considered; these include the principles of population genetics, population viability analysis, and the use of modelling. Other issues and concepts covered include the uses of wildlife, illegal wildlife trafficking and trade, biosecurity and the types of international, national and local laws and agreements that relate to conservation in general. The unit emphasises the importance of biodiversity and scientific research in conservation biology.

200504.1 Construction Economics

Credit Points 10 **Level** 4

Assumed Knowledge

Building construction including residential, light industrial and small commercial as well as building measurement and estimating.

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The unit provides students with an understanding of economic principles and how the national and international economies function in relation to the construction industry, individual construction firms, sub-contractors and suppliers. An understanding of how economic reasoning may be applied to various problems in the construction industry. The impact of globalisation on the construction industry. Government policy and the construction industry. Measuring the degree of competition in the construction industry.

200482.1 Construction in Practice 1

Credit Points 10 **Level** 2

Assumed Knowledge

Local Government planning requirements, residential construction details, quantity surveying, contract documentation, site planning

Prerequisite

BG101A.1 Building 1 AND **BG105A.1** Graphic Communication and Design (V1) AND **BG103A.1** Building 2

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This unit aims to allow student gain an understanding of the complexity of construction industry by integrating knowledge from earlier units. The unit includes planning and management, regulatory control and client liaison required in initiating and completing a residential construction project.

200484.2 Construction in Practice 3

Credit Points 10 **Level** 4

Assumed Knowledge

In-depth knowledge and of construction processes for large buildings. In-depth knowledge and understanding of construction professionals involved in large scale construction projects. Ability to carry out estimates of costs for large construction projects. In-depth understanding of the principles of Project and Construction Management. In-depth understanding of Construction Planning. In-depth understanding of Building Control legislation. In-depth understanding of energy conservation issues. In-depth understanding of contract administration and tendering procedures.

Prerequisite

200482.1 Construction in Practice 1 AND **MG313A.1** Project Management AND **PL302A.1** Construction Planning (V1)

Equivalent Units

BG408A - Building in Practice 3

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This version of the unit will commence from 2010. This unit enables students to integrate and develop knowledge gained earlier in the course allowing them to simulate industry practice. Students are given a brief to undertake large and complex construction projects (eg. high rise buildings, airport construction, or sports stadium construction). They then take account of regulatory control, financial limitations, and stakeholder impacts whilst managing a team and being flexible and responsive to changing demands.

200503.1 Construction Information Systems

Credit Points 10 **Level** 3

Assumed Knowledge

Students must be familiar with spreadsheet and database software. Students should also have a basic understanding of contract administration.

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This unit is designed to provide skills and knowledge for information management technology and practice as it relates to the building industry. The unit gives and overview of information management, data collection and storage, information classification systems, communications, specialist computer applications and artificial intelligence.

PL302A.1 Construction Planning (V1)

Credit Points 10 **Level** 3

Assumed Knowledge

Understand estimating preliminaries for multi storey construction.

Prerequisite

200468.1 Estimating 1

Equivalent Units

300728 - Construction Planning

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This unit is being replaced by 300728 Construction Planning from 2010. Aims: This unit is intended to give students the ability to organise the resources required for a major construction project, to plan the sequence and timing of construction operations, to assess the risk inherent to achieving a construction schedule, and to evaluate emerging trends in construction planning. Content: resource allocation, probilistics scheduling, systems simulation, multi project scheduling

BG204A.1 Construction Technology 1 (Civil)

Credit Points 10 **Level** 2

Prerequisite

BG101A.1 Building 1 AND **BG103A.1** Building 2

Equivalent Units

300720 - Construction Technology 1 (Civil)

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This unit is being replaced by 300720 Construction Technology 1 (Civil) from 2010. Aims: The development of the students' knowledge and skills in appraising the site requirements for construction purposes both at the pre tendering and construction phase of a project. Content: Soil classification, site investigation, retaining walls, trenches, detention/retention pits and basins, temporary structures, settlements, demolition, site dewatering, surveying.

BG207A.1 Construction Technology 2 (Substructure)

Credit Points 10 **Level** 2

Equivalent Units

300721 - Construction Technology 2 (Substructure)

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This unit is being replaced by 300721 Construction Technology 2 (Substructure) from 2010. Aims: This unit will aim to further develop students' knowledge of substructures. Content: Strip footings, piling, piering, rafts, waffle structures, materials handling, load bearing capacity,

impact of structure on surface and sub surface drainage, underpinning and temporary substructures, waterproofing techniques, materials science (concrete and masonry).

200502.2 Construction Technology 3 (Concrete Construction)

Credit Points 10 **Level** 3

Assumed Knowledge

It is expected that students will have first studied the Building 1 and 2 units as well as Construction Technology 2.

Prerequisite

bg207a.1 Construction Technology 2 (Substructure)

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This version of the unit will commence from 2010. The aim of this unit is to introduce students to the concept of structures, loads and the effect of loads on structures in relation to concrete construction. Students will have an in-depth understanding of concrete as a construction material. It covers the construction technology aspects of concrete structural components and systems, including beams, columns, slabs and frames. Emphasis will be given to formwork design and construction. Students will be introduced to the relevant Australian Standards for concrete construction. The unit also aims at developing students' ability to deal professionally with other building professionals, including architects and structural engineers.

200470.2 Construction Technology 4 (Steel Construction)

Credit Points 10 **Level** 3

Assumed Knowledge

Information gained from the contents of Building units and prior Construction technology units.

Prerequisite

BG207A.1 Construction Technology 2 (Substructure)

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This version of the unit will commence in 2010. This unit deals with the construction of structural steelwork. Students will gain better understanding of mechanical properties of steel. It covers various components in structural steelwork, and their behaviour under loads. Students will also be introduced to various frame systems in multi-story and high-rise construction and relevant Australian Standards for steel construction. Emphasis will be given to safe erection and assembly of structural steelwork. Due consideration will be given to the requirements of Workcover in relation to site safety and material handling. An introduction will also be given for Steel-concrete composite construction.

200471.2 Construction Technology 5 (Envelope)

Credit Points 10 **Level** 4

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This version of the unit will commence from 2010. After undertaking this unit, students should understand the way building envelopes are designed and constructed to optimise thermal, visual and acoustic comfort and for energy efficiency.

BG406A.1 Construction Technology 6 (Services)

Credit Points 10 **Level** 5

Equivalent Units

300725 - Construction Technology 6 (Services)

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This unit is being replaced by 300725 Construction Technology 6 (Services) from 2010. The aim of this unit is to provide students with a vehicle to develop knowledge and skills needed to comprehend the design, coordination and installation of major building services. In so doing it engenders a life-long appreciation of the complexity of this important aspect of construction.

300360.1 Consumer Issues in Nutrition

Credit Points 10 **Level** 2

Equivalent Units

FS204A - Food and Nutrition Practicum 2.1

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This unit explores current food and nutrition issues relevant to health and wellbeing. The unit introduces students to the factors that influence health and explores the contribution the food system makes to consumer wellbeing. It also identifies the rights and responsibilities of the consumer/ producer interface. Students will work collectively and in partnership with industry and community organizations to research a food and nutrition issue affecting the health or perceptions of consumers. This unit includes an introduction to social research methods to assist teams to plan, implement and report their research issue. Emphasis is given to the ongoing development of independent learning and problem solving skills.

100800.2 Consumer Psychology

Credit Points 10 **Level** 3

Assumed Knowledge

Assumed knowledge of 100020 - Social and Developmental Psychology. Consumer Psychology is an applied field. Assumed knowledge of core psychological issues will facilitate learning.

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Consumer Psychology is the study of how people relate to and involve with products and services that they purchase or use. It attempts to describe, predict, explain, and/or influence consumer responses to products and service-related information and experiences. It contains a broad range of theoretical, conceptual, and methodological perspectives. It is indeed the psychology of how consumers think, feel, reason, and select between different alternatives (e.g., brands, products); how the consumer is influenced by his or her environment (e.g., culture, family, signs, media) and what leads to buying behaviour. By understanding the consumer, we will be able to make informed decisions and apply appropriate marketing and advertising strategies.

400822.2 Contemporary Issues in Health and Nursing

Credit Points 10 **Level** 3

Special Requirements

Students must be enrolled in the Bachelor of Nursing Studies to enrol in this unit.

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This unit version replaces version 1 from 2010. This unit enables students to explore contemporary, national and international issues that impact on the health of people throughout the world and that require a nursing and health administration response.

100309.1 Contemporary Perspectives of Childhoods

Credit Points 10 **Level** 1

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The image of the child and understandings of childhoods impact significantly on approaches adopted within early childhood education. In recent years traditional understandings of 'childhood' and the 'universal child' have been increasingly challenged by new discourses associated with the reconceptualisation of childhood. This unit explores the historical and current influences on early childhood education and the social constructions of family and childhoods. Students will investigate the multiplicity of experiences of childhood, different images of childhood and how conceptions of childhood impact on the education and care of children's 'rights'.

400795.1 Contemporary Youth Health Issues

Credit Points 10 **Level** 2

Equivalent Units

100668 - The Health of Young People

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The unit explores Contemporary Health Issues which relate to young peoples' health and wellbeing through a range of topics and issues that construct young peoples lives . Students will examine the nature of young people's lives and the psychosocial, sociological, and political environments that significantly impact and influence young peoples lives and health. The nature, extent and social determinants of risk taking will be explored in light of the 'tasks of adolescence'. The unit will further equip students with the skills to seek out appropriate support networks and agencies within the community, and to put into place processes that will assist young people to better deal with these health issues.

300009.2 Control Systems

Credit Points 10 **Level** 3

Assumed Knowledge

200238 - Mathematics for Engineers 2 • Ordinary Differential Equations • First order, Second order, and Higher order. • Laplace transforms • Multivariable Calculus • Functions of two or more variables • Double integrals • Triple integrals. Similar to that contained in 200238 - Mathematics for Engineers 2. Students should also have the appropriate background and competence in the safe use of computers, test equipment, components and data sheets.

Prerequisite

300057.1 Signals and Systems OR **300020.1** Dynamics and Mechanical Systems

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This unit introduces the fundamental concepts of automatic control engineering. It covers traditional and contemporary design and analysis techniques; the concepts required to design continuous time and discrete time controllers. Matlab is utlilized considerably.

300545.1 Coordination Chemistry

Credit Points 10 **Level** 2

Prerequisite

300224.1 Chemistry 1 OR **300554.1** Principles of Chemistry

Equivalent Units

300230 - Inorganic Chemistry 2, J2758 - Inorganic Chemistry 2

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Students studying atParramatta campus should refer to 300230 - Inorganic Chemistry 2. This unit introduces students to a thorough study of coordination chemistry (discussing complexes, ligands, structure, isomerism, stability, reaction mechanisms, oxidation states, elements in the first transition series, and trends in the periodic table). That foundation is then used to study applications of coordination chemistry in biological systems, in medicine and in areas such as radiopharmaceuticals. The unit then moves on to areas of fundamental inorganic chemistry, including bonding, solution chemistry, and solid state chemistry. This unit also introduces many of the laboratory techniques and equipment that are used in synthetic procedures in coordination chemistry.

400680.1 Crime and Criminal Justice

Credit Points 10 **Level** 1

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This unit provides the social context for the detailed study of criminological theories in Crime and Criminology. The definition of particular social problems as crimes, how crime is measured and explained and who are identified as criminals or victims is not straightforward. This unit challenges conventional criminology that accepts at face value that crime can be defined by criminal law or by a conceptual analysis of the harm done. The unit examines how police, courts and corrections influence processes of criminalisation and victimisation and the societal context in which this occurs.

400681.2 Crime and Criminology

Credit Points 10 **Level** 1

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The unit introduces students to the major theoretical approaches within criminology, from the eighteenth century

criminology of the Enlightenment through nineteenth century criminological positivism to contemporary forms of critical criminological theory. It does this through a careful study of the work of particular thinkers associated with these traditions and the international body of scholarship in the field of criminology. Students will explore a range of issues and apply criminological theory and research in an integrated way while developing their skills at working in groups.

300374.1 Crime Scene Investigation

Credit Points 10 **Level** 2

Assumed Knowledge

Successful completion of SC103A - Forensic Science and/ or 300375 - Digital Forensic Photography 1.

Special Requirements

This unit is only available to students who are enrolled in 3589 Bachelor of Science (Forensic Science).

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The detection and collection of forensic evidence is a pivotal function in forensic science. This unit examines the practice of crime scene investigation including detection, collection and preservation of physical evidence gained from crime scenes. It also explores the legal requirements of evidence continuity, evidence integrity and court presentation of evidence. Crime scene investigation topics covered in this unit include: documenting the crime scene, controlling the crime scene, shoe and tyre impression comparisons, tool mark evidence, fingerprints, blood stains and blood splatter evidence, GSR (gun shot residue), image analysis of physical evidence, DVI (disaster victim identification), hairs and fibres evidence and others.

400088.2 Critical Qualitative Research

Credit Points 10 **Level** 2

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Methods in critical qualitative research deals with research methodologies and skills in a way which challenges the idea that there is a divide between theory and practice, between debates conducted on the pages of academic journals and those which emerge in mainstream media or in the workplace. This unit creatively explores a number of different methods that social researchers use to conduct their research. Students will also have the opportunity to conduct a research project on a topic of their choice.

400816.2 Critical Thinking and Reflective Nursing Practice

Credit Points 10 **Level** 3

Special Requirements

Students must be enrolled in the Bachelor of Nursing Studies to enrol in this unit.

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This unit promotes an understanding of critical thinking. It enables students to enhance their capacity for reflective reasoning so that they can analyse and evaluate nursing practice issues and situations, and develop logical conclusions about them

300616.1 Crop Production

Credit Points 10 **Level** 1

Assumed Knowledge

Basic knowledge of plants.

Equivalent Units

300451 - Horticulture Production 2, 300329 - Floriculture, 300330 - Fruit Production

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This unit aims to provide students with an understanding of the scientific basis of crop production and the physiological controls on crop yield. It develops the students' practical and technical skills while providing an understanding of scientific basis for environmental modification to improve the quality of crop products. Students will become familiar with the current sources of information available to producers and develop production and management skills through the production of fruits, vegetables, flowers and nursery crops. Students will also gain knowledge on food processing techniques after harvesting.

300640.1 Culinary Studies

Credit Points 10 **Level** 3

Equivalent Units

FS325A - Culinary Studies 3.2

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This unit aims to develop students' skills and knowledge in food preparation and presentation in specific culinary areas, with both theoretical and practical applications. Using a student-centred approach, small group learning, seminars and lectures, students are guided through a pathway of development as autonomous learners through problem-solving activities and experiential techniques. Students integrate and apply to food preparation knowledge and skills from other areas, such as food science principles and nutrition. Creativity and imagination are encouraged when using and preparing food products. Students are encouraged to keep up to date with new food products, trends and methods in the dynamic food industry. Note that Food and Nutrition students should take this unit in Spring session and Hospitality and combined students should take this unit in Autumn session.

200036.2 Data Mining and Visualisation

Credit Points 10 **Level** 3

Assumed Knowledge

200192 - Statistics for Science or 200032 - Statistics for Business or 200263 - Biometry

Prerequisite

300104.1 Database Design and Development

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This unit presents data mining as a well structured standard process, namely, the Cross Industry Standard Process for Data Mining (CISP-DM). Further, this unit emphasizes (1) the presentation of data mining as a process, (2) the "White box" approach, emphasizing an understanding of the underlying algorithmic structures, (3) the graphical

approach, emphasizing exploratory data analysis, and (4) the logical presentation, flowing naturally from the CRISP-DM standard process and the set of data mining tasks. This unit gives the insight of the data mining algorithms, by using small data sets and then provides examples of the application of the various algorithms on actual large data sets. Finally it provides the hands-on analysis problems, representing an opportunity to apply acquired data mining expertise to solving real problems using large data sets.

300010.2 Data Networks

Credit Points 10 **Level** 4

Prerequisite

300057.2 Signals and Systems

Equivalent Units

84355 - Data Communication & Computer Networks, 89038 - Data Communications & Network Technology

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This unit is concerned with the principles and topics of fundamental importance to data communication, computer communication networks and telecommunications. The lower layers of the OSI reference model are emphasized (hardware, physical layer, data link layer and network layer). Also, it will cover all major network technologies-SONET, ATM, Internet, and Telephony. Essential network engineering topics such as protocol layering, multiple access, switching, scheduling, routing, congestion control, error control, flow control, and network security shall also be included. An engineering approach will be taken to provide an insight into network design.

300103.1 Data Structures and Algorithms

Credit Points 10 **Level** 2

Prerequisite

300580.1 Programming Fundamentals OR **300027.1** Engineering Computing OR **300155.1** Programming Principles 1 OR **300405.2** Fundamentals of Programming

Corequisite

200025.1 Discrete Mathematics OR **200237.1** Mathematics for Engineers 1

Equivalent Units

J2741 - Data Structures & File Organisations, 14906 - Data Structures, 14945 - Data Structures

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This unit introduces students to fundamental data structures and algorithms used in computing. The material covered forms the basis for further studies in programming and software engineering in later units. The unit focuses on the ideas of data abstraction, object-oriented programming, and software reuse. Issues relating to computational complexity of algorithms are addressed throughout the session. Topics covered include: the fundamental abstract data types (lists, stacks, queues, trees, hash tables, graphs); recursion; complexity of algorithms; internal and external sorting and searching algorithms; file structures; and B trees.

300104.1 Database Design and Development

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge of entity-relationship modelling and one programming language.

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The main purpose of this unit is to provide students with an opportunity to gain a basic knowledge of database design and development including data modeling methods and techniques and database implementation using a database management system

700011.1 Database Design and Development (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300104 - Database Design and Development

Special Requirements

Students must be enrolled at UWS College.

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The main purpose of this unit is to provide students with an opportunity to gain a basic knowledge of database design and development including data modeling methods and techniques and database implementation using a database management system.

200035.1 Decision Analysis and Statistical Process Control

Credit Points 10 **Level** 2

Assumed Knowledge

Basic or introductory knowledge of statistics or mathematics.

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This unit provides a selection of statistical techniques useful in business, industry, technology and many other disciplines, with particular emphasis on the analysis of decisions and quality processes and management. Topics include elements of decision theory; decision making with experimental information; definition of quality control, quality assurance and total quality; control charts for variables and attributes; acceptance sampling; and process capability improvement.

200485.1 Decision Making for Construction Professionals

Credit Points 10 **Level** 2

Assumed Knowledge

Communications for Construction Professionals

Prerequisite

300461.1 Engineering and Industrial Design Practice

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The unit will examine a range of methods that can be applied to problem solving. The unit will prepare students

for independent research work and comprise an introduction to the project based units. Content: Problem definition, option development, investigation planning, information technology, data analysis, critical interpretation.

300012.2 Design Management 1: Product Design Audit

Credit Points 10 **Level** 2

Equivalent Units

10884 - Design Management 1: Corporate Image

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This unit focuses on the development of the product/service audit process and study of a corporation's image and identity as perceived by the target groups it aims to reach. Students will study the approach taken to develop a strategic design management plan that pursues established aims and controls the way a corporation presents itself to its target audience(s) and differentiates itself against its competition in the targeted market(s).

300013.2 Design Management 2: Corporate Image and Identity

Credit Points 10 **Level** 2

Prerequisite

300012.2 Design Management 1: Product Design Audit

Equivalent Units

10885 - Design Management 2: Corporate Identity

Special Requirements

The Company chosen by a student as a case study in 300012 - Design Management 1, on which the assignments are based, should be followed through to 300013 - Design Management 2.

.....

In Design Management 2 students will develop, based on the Corporate Image Brief and Research established in Semester 1, a methodology and program to study a corporation's approach(es) to communicate with its market audience. The evaluation of the study leads to the formulation of the corporate identity design strategy and brief. The information summarised in the design brief is then used to establish the corporate identity design program, which informs the development of the components of a client company's corporate identity. The company chosen by the students as a case study in Design Management 1, on which the assignments are based, should be followed through to Design Management 2.

300014.2 Design Management 3: Organisational Skills for Designers

Credit Points 10 **Level** 3

Assumed Knowledge

Ability to use: e-mail, internet web browser, WebCT or equivalent, word processing program. Knowledge and/or experience in: referencing, essay writing, group work and the successful completion of Level 2 units would be of advantage and will be assumed.

Equivalent Units

10886 - Design Management 3B: Professional Practice

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Key learning outcomes include that students: understand manufacturing paradigms and their impact on the product development process and the design process; understand the impact of organisational structures, strategies and processes on the design process; develop and gain experience of using key skills that will enable them to work successfully with various organisational members in the product development process. These skills include teamwork, decision-making and communication, analysis and problem solving. Develop and gain experience of using distance communication and virtual teamwork skills, skills that are becoming increasingly important in new product development.

300015.2 Design Management 4: Design Process

Credit Points 10 **Level** 3

Assumed Knowledge

Ability to use e-mail, internet web browser, webCT or equivalent, word processing system. Knowledge and/or experience in: referencing, essay writing, group work and the successful completion of Level 2 units and 300014 Design Management 3 or equivalent would be of advantage and will be assumed.

Equivalent Units

10887 - Design Management 4: Corporate Design

.....

Design Management unit focuses on fundamental issues of design process and design management. It exposes students to the various theories and models underlying trade-offs and choices in design process. Experiential exercises and contemporary case studies are used throughout the unit. Thus, at the conclusion of the unit, students should be able to gain a broad awareness and critical understanding of vital concepts and issues relating to design process; as well as managing intellectual property. This unit is part of a sequence of four units that constitute the sub-major in Design Management and eight units that constitute the major in International Design Management and Innovation Design Management.

300478.1 Design of Servo-systems

Credit Points 10 **Level** 3

Prerequisite

300040.1 Mechanics of Materials AND **300480.1** Dynamics of Mechanical Systems

Equivalent Units

300064 - Thermo-fluids Engineering

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This unit is intended to introduce students to servo-systems in general including pneumatic and hydraulic servo control systems as applicable to manufacturing and process machinery. All aspects of such systems and their integration in automated applications in industry will be

discussed including the fluid circuit design, equipment selection and becoming familiar with industry standards. Project based design to be tested in the laboratory under the supervision of technical officers, will form part of the unit to provide practical experience with servo-systems.`

300016.1 Design Science

Credit Points 10 **Level** 1

Assumed Knowledge

Any two units of HSC Mathematics

Equivalent Units

J1807 - Engineering Science

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An understanding of how the built environment works is essential to designers and construction professionals. This unit provides an introduction to physical units of measure, tolerance, statics, dynamics and optics. It also introduces students to electricity and magnetism as well as the concepts of momentum, energy, work, power and the operation of motors and machine. Students engage with these concepts through a hands-on learning experience including practical projects and live demonstrations.

300305.2 Design Studio 1: Themes and Variations

Credit Points 10 **Level** 2

Assumed Knowledge

It is assumed students are enrolled in Industrial Graphics 2 or are proficient in engineering drawing allowing them to complete the engineering drawing component of the assessment.

Prerequisite

300462.1 Engineering and Design Concepts

Equivalent Units

10953 - Design Process 1: The Design Concept, J2815 - Design Principles 2D/3D, J2869 - Design Principles

.....

Global markets and continuing fragmentation of market segments now demand that designers understand sub-cultural groups and changing lifestyle trends in niche markets. This unit delivers creative design concepts and technical development methodologies to enhance product-form related aspects (‘aesthetics’) of design that are inspired and driven by cultural research.

300308.2 Design Studio 2: The Design Proposal

Credit Points 10 **Level** 2

Assumed Knowledge

300305 - Design Studio 1: Themes & Variations, 300309 - Sustainable Design: Life Cycle Analysis, 300302 - Industrial Graphics 1: Presentation, 300282 - Industrial Graphics 2: Transition

Equivalent Units

10954 - Design Process 2: The Design Proposal, J2870 - Design Application, J3804 - Design Project 1

.....

Design Studio 2 will develop the ability of students to advance a design concept up to the point of pre-production. The unit explores the often complex influences on a design proposal - from the methods used to identify the needs of people, future purchase patterns, production limitations to price point analysis. It focuses on the integrative nature of the process of designing.

300311.2 Design Studio 3: Product Realisation

Credit Points 10 **Level** 3

Assumed Knowledge

300308 - Design Studio 2:The Design Proposal, 300309 - Sustainable Design: Life Cycle Analysis, 300306 - Sustainable Design:Sustainable Futures, 300282 - Industrial Graphics 2:Transition, 300310 - Industrial Graphics 3:3D Solids.

Equivalent Units

10955 - Design Process 3: Product, J3765 - Advanced Design Application, J3805 - Design Project 2, J3825 - Design Project (Integrated)

.....

Students explore design perspectives within an industry interactive project theme including user centred design; reduced environmental impact guided by sustainable design principles; discuss technological and cultural viewpoints; experience 'designer as manager' client relations; value analysis and production technologies. Research is conducted in groups and proposals define a strategy of activities that contribute to the detailing of a product system - realisation. The focus is on the most cost-effective user centred criterion-based design for manufacture whilst observing social, economic and environmental balances. Integration of prior knowledge and reporting of this synthesis is essential to progression in this unit.

300313.2 Design Studio 4: Simulate to Innovate

Credit Points 10 **Level** 3

Assumed Knowledge

It is assumed students have completed Industrial Graphics 2 and Industrial Graphics 3 and are proficient in computer solid modelling. Knowledge of plastic manufacturing is also essential.

Prerequisite

300311.2 Design Studio 3: Product Realisation

Equivalent Units

10956 - Design Process 4: The Design Context

.....

Design Studio explores the strategies for Industrial Design within the complex and contradictory context of operating as designers in late-industrial cultures. The complexity of designing in Australia for a global economy with local peculiarities will be studied with a particular emphasis on designing for users who are increasingly difficult to know.

These same users are also demanding more protection from goods and services they consume and demonstrate increasing doubts about the claims that advertisers make. These factors are bringing new issues into the Industrial Design context. Product innovation with an emphasis on rapid prototyping will form the basis of assessment in this unit.

300314.1 Designed Inquiry

Credit Points 10 **Level** 3

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This unit instructs students in the practical techniques required for designing, conducting and presenting research, in an action-learning environment. Actual research projects based on design-related issues will be explored. A range of research methods will be presented and students will be assisted in the strategic selection of appropriate methods in designing their research. This unit provides a forum for students to bring together and present both the design and results of research. Students will have the opportunity to select and explore their own research topics developed in consultation with the lecturer or tutor, design data collection instruments, analyse data and engage in peer discussions about the significance of their findings.

300111.1 Developing Web Applications with XML

Credit Points 10 **Level** 3

Assumed Knowledge

Proficiency in a high level programming language - equivalent to successful completion of Programming Principles 1 or Introduction to Programming with Java or equivalent. Familiarity with other Web technologies and their application eg HTML, DHTML - equivalent to successful completion of Interactive Web Site Development (formerly Internet and Web Communications) or Developing Web Applications with HTML and DHTML or equivalent.

.....

This advanced level unit establishes students' emerging programming and Internet skills. The unit provides a comprehensive coverage of the XML language with a focus on key ideas and tools needed to understand the use of XML in document management, web sites and application development/integration. As students progress they have the opportunity to examine how Web-based information is entered, processed and validated. There are ample opportunities to gain practical experience in developing XML applications supported by other Web technologies, including HTML and DHTML and their application to live publishing. Students examine how XML is currently being applied in the real world, and its advantages and disadvantages.

BG303A.1 Development Control (V2)

Credit Points 10 **Level** 2

Assumed Knowledge

Basic understanding of residential construction.

Equivalent Units

300723 - Development Control

.....

This unit is being replaced by 300723 Development Control from 2010. Objectives: Students will be able to: discuss current issues related to development control; relate the law to the development application process; assess applications for approval for development as an integrated process; evaluate impact assessment issues; consider urban design, streetscape, heritage and conservation issues; discuss parking, traffic landscape and services.

200030.1 Differential Equations

Credit Points 10 **Level** 2

Assumed Knowledge

200189 - Concepts of Mathematics

Incompatible Units

200238 - Mathematics for Engineers 2

.....

Differential equations arise naturally, both in abstract mathematics and in the study of many phenomena. This unit provides the theory of ordinary differential equations and an introduction to partial differential equations, together with methods of solution. Examples are drawn from a wide range of biological, chemical, physical and economic applications.

300112.1 Digital Communication Technology

Credit Points 10 **Level** 2

Prerequisite

300086.1 Applied Data Communications and Networking OR **300094.1** Computer Networking Fundamentals

Equivalent Units

J3750 - Advanced Data Communications, 14961 - Data Communications 2

.....

This unit is designed for students majoring in data communications. The unit introduces students to the principles, theories, techniques, and systems used in the vast area of digital communications. Students learn about coding and compression, and their corresponding industry standards. The characteristics and performance of various data communication systems such as analog and digital are also examined.

300370.1 Digital Control Systems

Credit Points 10 **Level** 4

Assumed Knowledge

Prior knowledge assumed: Continuous time control systems, the use of the Laplace transform, ADC and DAC, Z-transform, vector matrix difference equations, state variable representation helpful and familiarity with Matlab or similar software.

Equivalent Units

84465 - Real Time Control

.....

This unit is a first course in discrete, single rate sampled linear control systems and introduces the use of a computer as the main control element in a feedback system and as a data acquisition tool in real time. Methods of analysis and design are examined, using s-domain and state space methods, with an emphasis on the practical aspects of designing and implementing digital control systems. Less emphasis on theoretical issues. Direct design and emulation methods are included. Practical laboratory work is included along with the use of Matlab software tools

300370.2 Digital Control Systems

Credit Points 10 **Level** 4

Assumed Knowledge

Prior knowledge assumed: Continuous time control systems, the use of the Laplace transform, ADC and DAC, Z-transform, vector matrix difference equations, state variable representation helpful and familiarity with Matlab or similar software.

Prerequisite

300009.2 Control Systems

Equivalent Units

84465.1 Real Time Control

.....

This unit is a first course in discrete, single rate sampled linear control systems and introduces the use of a computer as the main control element in a feedback system and as a data acquisition tool in real time. Methods of analysis and design are examined, using s-domain and state space methods, with an emphasis on the practical aspects of designing and implementing digital control systems. Less emphasis on theoretical issues. Direct design and emulation methods are included. Practical laboratory work is included along with the use of Matlab software tools

300375.1 Digital Forensic Photography 1

Credit Points 10 **Level** 2

Special Requirements

This unit is only available to students who are enrolled in 3589 Bachelor of Science (Forensic Science).

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Documenting perishable and non-perishable forensic evidence is an important function in forensic science. This unit introduces the student to the practice of digital photography for forensic laboratory and crime scene applications. Digital Forensic Photography 1 exclusively uses digital photography technology due to the recent wide spread application of this technology in industry. Students will gain theoretical understanding of the technology and practical application through established workshops.

300376.1 Digital Forensic Photography 2

Credit Points 10 **Level** 2

Assumed Knowledge

Successful completion of 300375 - Digital Forensic Photography 1.

Special Requirements

Students must be enrolled in 3589 Bachelor of Science (Forensic Science).

.....

This unit provides more advanced photography applications specifically for forensic investigation. The unit provides the learner with theoretical knowledge and practical skills to perform a number of forensic investigation tasks to current industry competencies. Various lighting applications are explored including studio lighting for exhibits, shadowless lighting and invisible radiation (ultraviolet and infrared). The unit will also explore photography techniques which can 'detect' evidence, such as art fraud, latent wounds and fingerprints. Photomacrography and close-up photography is also comprehensively covered in this unit. A field trip to a mortuary to witness autopsy procedures and recording is included as a component of pathology and medical photography.

300069.2 Digital Signal Processing

Credit Points 10 **Level** 3

Assumed Knowledge

Studen's should be able to apply knowledge from 300005 - Circuit Theory: Employ the basic principles of analysing an AC electric circuit; Apply Kirchhoff's Voltage and Current laws and their use in electric circuits; Apply Nodal analysis, mesh analysis and superpositiion analysis to AC electric circuits; Utilise Laplace Transform and its applications to Electric Circuits; Demonstrate the concept of Bode plot and frequency response; Examine passive and active filters.

Prerequisite

300057.2 Signals and Systems

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This unit is aimed to provide an introduction to fundamental concepts and principles in digital signal processing. It focuses on signal analysis, digital filter design, hardware implementation and applications.

300018.1 Digital Systems 1

Credit Points 10 **Level** 1

Assumed Knowledge

Topics from 300021 - Electrical Fundamentals: Understand the basic principles of analysing an electric circuit; Understand Kirchhoff's Voltage and Current laws and their use in electric circuits; Understand the concept of operational amplifier and its circuit.

.....

This unit provides students with a solid background in digital logic design. Students are introduced to the fundamentals of digital logic with number systems, basic logic devices and Boolean algebra. Analysis and design of combinational and sequential logic circuits is covered in detail. Design with programmable logic devices is introduced.

300019.1 Digital Systems 2

Credit Points 10 **Level** 2

Equivalent Units

84866 - Digital Systems 3

.....

This unit covers modern digital design techniques and the process of creating a digital circuit, from design specifications to the implementation of more complex digital circuits and systems. Topics include a review of logic design techniques; hardware description languages (HDL); digital circuit modeling using an HDL; logic simulations; state-of-the-art digital circuit design tools; programmable logic devices; digital circuit implementation rapid circuit prototyping; and integration of HDL, a digital circuit design tool and programmable logic devices in a single design process.

300019.2 Digital Systems 2

Credit Points 10 **Level** 2

Prerequisite

300018.1 Digital Systems 1

.....

This unit covers modern digital design techniques and the process of creating a digital circuit from design specifications to the implementation of more complex digital circuits and systems. Specific topics include a review of logic design techniques; hardware description languages, HDL; digital circuit modeling using an HDL; logic simulations; state-of-the-art digital circuit design tools; programmable logic devices; digital circuit implementation rapid circuit prototyping; integration of HDL, a digital circuit design tool and programmable logic devices in a single design process.

300702.1 Disaster and Emergency Management

Credit Points 10 **Level** 3

Equivalent Units

300449 - Environment, Health and Emergency Management

.....

The unit consists of project based studies that explore how human societies prepare for and respond to disasters and emergencies. The unit uses case studies to investigate the historical practice of risk assessment and prevention strategies for community safety during times of critical incidents, including emergency management strategies for community recovery, public education about critical incidents and how the effects of emergencies can be reduced to assist with community recovery. The unit will facilitate improved understanding by developing scenarios of impending issues such as global pandemics of infectious disease, natural disasters and man made emergencies (terrorism).

200025.1 Discrete Mathematics

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Mathematics or equivalent

Equivalent Units

ST107A - Discrete Mathematics, 14349 - Discrete Mathematics

Incompatible Units

14950 - Algebra 1A and 1B, 14503 - Maths 3, 14323 - Maths for Computing

.....

This Level 1 unit introduces set theory, symbolic logic, graph theory and some counting problems. It serves as a grounding for further study in mathematics or computing.

300699.1 Discrete Structures and Complexity

Credit Points 10 **Level** 2

Assumed Knowledge

Basic programming such as that in 300580 - Programming Fundamentals.

Prerequisite

300700.1 Statistical Decision Making

Incompatible Units

200025 - Discrete Mathematics

.....

The fact that computers work at all in the way they do is due to the formal mathematical structure that is used in their design. The same holds for establishing important matters such as the reliability of our computer networks. This unit presents, in their computing context, a range of mathematical concepts that are essential for understanding a number of topics concerning computers: the ways they work, they ways they interact, and the ways we interact with them.

300115.1 Distributed Systems and Programming

Credit Points 10 **Level** 3

Special Requirements

Students must pass 300167 Systems Programming 1 and must pass either 300094 Computer Networking Fundamentals or 300565 Computer Networking prior to enrolling in this unit.

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This unit covers concepts and design of, and programming for distributed systems. It builds on basic network communication protocols (specifically IP) to cover client-server programming using both the system level socket interface and remote procedure calls. It also examines large-scale distributed system architectures, particularly those based on distributed objects, and considers the complexities inherent in distributed transactions. Key concepts covered include data and algorithmic distribution, idempotent protocols, stateless and stateful servers, and

distributed system transparency. Illustrative case studies are included.

300479.1 Drainage Engineering

Credit Points 10 **Level** 3

Assumed Knowledge

300461 - Engineering and Industrial Design Practice and 300027 - Engineering Computing.

Prerequisite

85009.1 Water Engineering

Equivalent Units

85017 - Foundation and Drainage, 85025 - Hydrometeorology

.....

This unit will introduce the basic concepts of drainage analysis. Basic concepts of hydrology will be introduced. This will be integrated with the hydraulic principles learned in Water Engineering to perform hydrologic analysis of catchments.

300546.1 Drug Design and Synthesis

Credit Points 10 **Level** 3

Prerequisite

300553.1 Molecules of Life: Synthesis and Reactivity OR **300301.1** Organic Chemistry 2

Equivalent Units

300235 - Organic Chemistry 3

.....

Students studying at Hawkesbury or Parramatta campus should refer to 300235 - Organic Chemistry 3. This unit introduces selected areas of more advanced organic chemistry, targeted largely on the tools to synthesise and identify organic molecules of biological and medicinal interest. The practical skills required are learnt through laboratory exercises which complement the theory.

400791.1 Drug Use in Society

Credit Points 10 **Level** 3

Equivalent Units

100667 - An Introduction to Drug Use in Society

.....

This unit examines drug issues in the context of Australian society. It will focus on exploring factual information and common misconceptions (including personal attitudes and values), societal expectations and responses, drug education, drug education programs and health promotion, and community resources. It encourages students to appreciate the many and varied social contexts of drug use and to think critically and analytically about creative alternatives to drug use issues in contemporary society.

100674.1 Drugs in Sport

Credit Points 10 **Level** 3

Equivalent Units

400963 - Drugs in Sport

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This unit is being replaced by unit code 400963 in 2010. This unit examines the dominant issues and discourse around the use of drugs in sport. The focus will be on exploring the socio-cultural, political and personal reasons why drugs are used in sport from the perspective of athletes, coaches, administrators and educators. Students will need to continually reflect upon their own practices and beliefs around drug use and sport. The unit offers challenging and relevant theoretical and practical experiences to students from a variety of professional backgrounds.

E1250.2 Drugs on Line

Credit Points 10 **Level** 1

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This unit version will replace version 1 from 2010. and abuse. An introductory section discusses mechanisms of drug action in the body and their likely effects. Some topical areas include recreational drugs, drugs in sport, vitamins and herbal supplements, oral contraceptives, antidepressants and weight management therapeutic agents.

101319.1 Drugs, Addiction and Society

Credit Points 10 **Level** 2

Equivalent Units

25033 - Dependency & Co-dependency in Health Care, C3424 - Drug and Alcohol Studies

Special Requirements

Successful completion of 40 credit points.

.....

The use of alcohol and other drugs is a highly controversial issue within the community. Most people use drugs of some kind yet particular drugs are demonised. This unit acquaints students with the complexity of studying alcohol and drug misuse from both an individual and a social perspective. Contemporary patterns of alcohol and drug use are initially placed within a structural, cultural and historical perspective and various conflicting approaches to the definition and consequent management of problematic drug use and drug dependence are studied. Distinctions among the various levels of problematic use are introduced and questions of basic pharmacology motivations for drug use and theories of dependence are examined.This subject aims to explore the discourses surrounding drugs as well as the reasons for drug use and forms of dependence. Students will also critically examine different kinds of policy and therapeutic practice within the drug field.

400781.1 Dynamics of Health

Credit Points 10 **Level** 1

Equivalent Units

400270 - Meanings of Health & Models of Care

Incompatible Units

400164 - Introduction to Sociology of Health

.....

This unit is being replaced by 400870 Population Health and Society in 2010. This unit introduces students to understandings about the nature of health through history and across cultures as well as to current conceptions regarding the various determinants of health and illness. Types of health issues encountered nationally and globally are considered, and used to provide an introduction to basic concepts of epidemiology.

300480.1 Dynamics of Mechanical Systems

Credit Points 10 **Level** 3

Prerequisite

300035.1 Kinematics and Kinetics of Machines AND
300040.1 Mechanics of Materials

Equivalent Units

300020 - Dynamics and Mechanical Systems

.....

This unit provides the essential background to understand the behaviour of engineering systems subject to vibration and analyse hydraulic systems for generation and/or application of fluid power.

200120.1 E-Business Fundamentals and Systems

Credit Points 10 **Level** 2

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Developments in information systems, particularly those associated with the Internet, have created new opportunities for businesses. Organisations can better manage their internal operations and obtain competitive advantages such as breaking into new markets or offering enhanced levels of service by exploiting these systems. As a consequence, the term 'e-business' (electronic business) has arisen. It refers to activities such as buying and selling, servicing customers and collaborating with business partners, as well as conducting business transactions within an organisation, where these are computer-based or use digital communications. This unit introduces students to the concept of e-business (and its subset, electronic commerce or e-commerce) and shows how this is impacting on the ways businesses are conducted. The unit examines major examples of the types of systems supporting e-business, employing, where appropriate, case studies drawn from business, government, industry and society. It considers the characteristics of these systems, how they are utilised, the opportunities they create, the practical limitations they face, current developments and future trends. The unit particularly looks at their business, legal, ethical and social impacts and implications, both at national and international level.

300634.1 Ecology

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge of first-year university biology equivalent to satisfactory completion of 300221 - Biology 1 and 300222 - Biology 2.

Equivalent Units

EY210A - Ecology 2.1

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We live in a society where environmental and ecological problems dominate public discourse. Reference is often made to ecology; terms and ideas that came originally from ecology are used in public discussions, and appear in legislation. This unit will introduce students to ecology: what is studied in ecology, how it is studied, what are the strengths and weaknesses or limitations of ecology. The scope of current ecological thinking will be covered, from the scale of individual organisms, through populations, and up to communities and ecosystems. Methods of study will be highlighted; the practical component of the course will introduce the techniques of conducting basic ecological investigations.

300619.1 Ecology of Production

Credit Points 10 **Level** 2

Assumed Knowledge

Basic knowledge of plants, animals, soils and climate would be an advantage.

Equivalent Units

300526 - Ecosystems and Agriculture, EY103A - Ecosystems and Agriculture

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Students will study key processes that drive agricultural production (energetics and nutrient cycling) and the importance of maintaining natural vegetation, within-agroecosystem biodiversity and ecological processes to obtain sustainable production benefits. Students will create an inventory of natural resources on the Hawkesbury Campus, which will be analysed to determine production capabilities and environmental limitations. Students will gain a basic understanding of selected ecological issues in Australian agriculture, and of current strategies and initiatives to address these issues, including management of feral plants and animals, use of genetically modified organisms, and management of greenhouse gas emissions, carbon cycling and carbon credits.

101263.1 Education and Transformation

Credit Points 10 **Level** 2

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The unit provides opportunities for students to examine theories and practices associated with Transformative Learning (TL), within oneself and society, and its potential role for the development of professional educators, change agents and leaders in society. TL is learning that is liberating, emancipatory, empowering, profound, deep, and life changing. It occurs through critical reflection on

experience, subsequent testing through discourse, and also through intuitive and affective processes. This unit enables students to design and facilitate life-affirming and transformative learning experiences in others.

300567.1 e-Health

Credit Points 10 **Level** 3

Assumed Knowledge

Students need knowledge in design and implementation of Web Applications before undertaking e-Health Students need the background knowledge of the application of computing and IT within the context of healthcare before undertaking e-Health.

Prerequisite

300582.1 Technologies for Web Applications AND
300566.1 Introduction to Health Informatics

.....

This unit exposes students to the processes and techniques of the development of e-Health applications. It extends the students knowledge of Health Informatics by introducing concepts relating to electronic communications within the Health Industry. Areas include the Electronic Health Record Standards, Security, Privacy and Trust together with TeleHealth and TeleMedicine approaches, methodologies, tools and techniques.

300070.2 Electrical Drives

Credit Points 10 **Level** 1

Assumed Knowledge

Electric Circuits and Electrical Machines

Prerequisite

300071.1 Electrical Machines 1

Corequisite

300005.1 Circuit Theory

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The unit aims to introduce the study of electrical machines and drives. The subject covers various types of electrical motors and drive systems, their applications and control. The unit covers various types of the speed control, starting and braking systems and the dynamics of different electrical drives.

300021.1 Electrical Fundamentals

Credit Points 10 **Level** 1

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The objective of this unit is to provide an introduction to fundamental electromagnetism and electric circuit principles. Discussion is restricted to DC, although first-order systems are presented and second order systems introduced in preparation for on-going development. Basic definitions of charge, current, potential difference/relative potential, power, and the electric circuit as a complete path are presented, together with the basic laws - Ohm's Law and Kirchoff's nodal and loop laws. Examples from different engineering disciplines are related to circuit's laws. Basic nodal and mesh analysis are presented together with Thevenin and Norton circuit equivalents, real versus ideal current and voltage sources and the maximum power transfer principle. The operational amplifier as a circuit element is introduced. Energy storage elements (capacitors and inductors) are discussed leading into first-order systems and their natural responses and time-constants. Several basic electromagnetic concepts related to electric and magnetic flux and induced voltage are also discussed.

700024.1 Electrical Fundamentals (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300021 - Electrical Fundamentals

Special Requirements

Students must be enrolled at UWS College.

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The objective of this unit is to provide the student's first introduction to fundamental electromagnetism and electric circuit principles. Discussion is restricted to DC, although first-order systems are discussed and second order systems introduced as a pointer to on-going development. Basic definitions of charge, current, potential difference/ relative potential, power, and the electric circuit as a complete path are presented, together with the basic laws - Ohm's Law and Kirchoff's nodal and loop laws. Examples from different engineering disciplines are related to circuit's laws. Basic nodal and mesh analysis are presented together with Thevenin and Norton circuit equivalents, real versus ideal current and voltage sources and the maximum power transfer principle. The operational amplifier as a circuit element is introduced. Energy storage elements (capacitors and inductors) are discussed leading into first-order systems and their natural responses and time-constants. Several basic electromagnetic concepts related to electric and magnetic flux and induced voltage are also discussed.

300071.1 Electrical Machines 1

Credit Points 10 **Level** 3

Prerequisite

300052.1 Power and Machines

Equivalent Units

89010 - Electrical Machines, Electrical Machines 1 (under unit codes 84742, 81441, 84140, 84232, 84240, 84243), Electrical Machines 2 (under unit codes 84272, 84872, 84280)

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This unit introduces the fundamental principles of electrical machines: DC generators and motors, induction motors and synchronous machines. The unit also introduces various special purpose electrical machines, such as permanent magnet machines, step motors and reluctance machines.

300024.2 Electronic Systems Design

Credit Points 10 **Level** 3

Assumed Knowledge

300075 - Instrumentation and Measurement, and 300069 - Digital Signal Processing

Prerequisite

300025.2 Electronics AND **300076.1** Microprocessor Systems

.....

This unit is concerned with the processes involved in the design and production of complete electronic systems. The product development cycle is considered from concept to market and commercialisation. The design of a large electronic system is undertaken as a group project. Production processes explored are printed circuit board (PCB) design and computer aided design (CAD) tools, and PCB manufacture and assembly. Management of the processes are studied including the application of total quality management (TQM) and just-in time management (JIT).

300025.2 Electronics

Credit Points 10 **Level** 2

Assumed Knowledge

Topics associated with the unit 300464 - Physics and Materials: Vibrations and wave phenomena; Photoelectric effect, atomic structure and periodic table; Electricity and magnetism.

Prerequisite

300021.1 Electrical Fundamentals

Special Requirements

Students should have a sound understanding of: The basic principles of analysing an electric circuit; Kirchhoff's Voltage and Current laws and their use in electric circuits; Nodal analysis, mesh analysis and superposition analysis in DC electric circuits; Thevenin and Norton equivalent and their use in electric circuits; The storage elements capacitor and inductor and understand their performance in first and second order circuits.

.....

This unit further develops skills in the analysis, design, practical implementation and testing of the main analogue electronic circuits. Topics covered are: semiconductor diodes and their applications, Bipolar Junction Transistors (BJT), Field Effect Transistors (FET), analysis of BJT and FET, design of discrete operational amplifiers, and operational amplifier characteristics and circuit configurations. The unit introduces students to Nanotechnology or the 'Molecular electronics' field.

300584.1 Emerging Trends in Information Systems

Credit Points 10 **Level** 3

Assumed Knowledge

Systems Analysis and Design; Computer Networking; Database Design and Development; Web Application Development

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This unit provides a means for students to explore the changing nature of information systems in organisations. Specifically, the role that emerging technologies play in both the design and development of information systems is critically examined. Students will be able to research and assess new technologies, as well as develop and implement effective strategies for achieving change in information systems based on the feasibility of the introduction of the technologies.

300658.1 Endocrinology and Metabolism

Credit Points 10 **Level** 2

Assumed Knowledge

Chemical bonding, including covalent, hydrogen and ionic bonds and hydrophobic interactions; properties of water, acids, bases and buffers; structure of common functional groups; stereoisomerism; principles of chemical reactions.

Prerequisite

300224.1 Chemistry 1 OR **300225.1** Chemistry 2 AND **300221.1** Biology 1

Equivalent Units

300227 - General Biochemistry, BC201A - Biochemistry 2.1

Incompatible Units

300219 - Biochemistry 1, 300220 - Biochemistry 2, 300548 - Human Metabolism and Disease, 300555 - Proteins and Genes

.....

The overall aim of this Problem Based Learning unit is to develop greater understanding of the molecular events coordinating the function of living cells within organisms. This Biochemistry unit also demonstrates the relevance of endocrine and metabolic factors that underpin a range of applied sciences, including medicine, food science, pharmaceuticals, nutrition, genetic engineering, health, hybridoma technology, enzyme technology, toxicology and the biological sciences in general.

300026.1 Energy Systems

Credit Points 10 **Level** 3

Equivalent Units

84263 - Power Electronics, 84257 - Electric Power Systems

.....

The unit introduces the global energy picture of electric energy systems. This includes the basic processes of efficient energy conversion by electronic and electrical means; the use of semiconductor power switching devices, energy generation and transmission methods in electric power systems, and alternative energy resources.

300026.2 Energy Systems

Credit Points 10 **Level** 3

Assumed Knowledge

Basic knowledge of power frequency devices and systems

Prerequisite

300052.1 Power and Machines AND **300025.2** Electronics

.....

The unit introduces the global energy picture of electric energy systems, including a look ar alternative energy sources where time permits. It deals with mainly power

systems on a macroscopic scale and with power electronics to a lesser extent and on a smaller scale. Basic processes of energy generation, distribution and conversion are presented, along with the use of semiconductor power switching devices.

300462.1 Engineering and Design Concepts

Credit Points 10 **Level** 1

Equivalent Units

300011 - Design Issues and Principles, J1803 - Impact of Design and Technology, J1757 - Design Issues, J1758 - Engineering Design

.....

This unit equips students with the fundamental skills that will enable them to use creative design and engineering approaches to solve challenging problems and to understand the design process. Students will be exposed to 2D and 3D visualisation techniques, will learn how to interpret abstract information, and will work on practical projects in an interdisciplinary context. The aim is to provide a common first-year subject that is thematic, rather than discipline-centred and presents students with foundation concepts in engineering and industrial design.

700021.1 Engineering and Design Concepts (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300462 - Engineering and Design Concepts

Special Requirements

Students must be enrolled at UWS College, except under specific circumstances approved by UWS.

.....

This unit equips students with the fundamental skills that will enable them to use creative design and engineering approaches to solve challenging problems and to understand the design process. Students will be exposed to 2D and 3D visualisation techniques, will learn how to interpret abstract information, and will work on practical projects in an interdisciplinary context.

300027.1 Engineering Computing

Credit Points 10 **Level** 1

Assumed Knowledge

Basic knowledge in use of computers and Windows operating system

.....

Students are introduced to the techniques of data manipulation and presentation using the common functions of a spreadsheet facility. The unit also aims to instil sound principles of program design that can be utilised in many units throughout the student's course. The basic elements and structures of a high level language are taught. Students are exposed to many engineering problems and are encouraged to implement solutions using an algorithmic approach.

700018.1 Engineering Computing (UWSC)

Credit Points 10 **Level** 1

Assumed Knowledge

Basic knowledge in use of computers and Windows operating system

Equivalent Units

300027 - Engineering Computing

Special Requirements

Students must be enrolled at UWS College.

.....

Students are introduced to the techniques of data manipulation and presentation using the common functions of a spreadsheet facility. The unit also aims to instill sound principles of program design that can be utilized in many units throughout the students' course. The basic elements and structures of a high level language are taught. Students are exposed to many engineering problems and are encouraged to implement solutions using an algorithmic approach.

700038.1 Engineering Design and Construction Practice (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300034 - Introduction to Professional Practice, 300461- Engineering and Industrial Design Practice

Special Requirements

Students must be enrolled at UWS College

.....

This unit aims to engender in participants an understanding of the many facets of professional practice that can be pursued as an Engineer or Designer. Communication, teamwork and problem solving skills will be fostered through a series of lectures, tutorials and laboratory classes. Case studies and assessment tasks aim to develop for the students their own personal ethos for practice, study and lifelong learning in line with the graduate outcomes desired by UWS.

300481.1 Engineering Electromagnetics

Credit Points 10 **Level** 2

Assumed Knowledge

300021 - Electrical Fundamentals

Prerequisite

300464.1 Physics and Materials AND **200238.1** Mathematics for Engineers 2

Equivalent Units

300022 - Electromagnetics, 300073 - Electromagnetic Compatibility

.....

This unit introduces Maxwell's equations in integral and differential form and their application to basic theory and application of electromagnetic structures, wave

propagation, guides waves, antennas and electromagnetic compatibility.

300482.1 Engineering Geology and Concrete Materials

Credit Points 10 **Level** 1

Equivalent Units

85002 - Engineering Geophysics, 300039 - Mechanics and Materials

.....

This unit will be offered from 2006. This is an introductory unit in Geology and Concrete Materials and will cover plate tectonics, common minerals and rocks, weathering of rocks, geomorphology and site stability as applied to engineering. This unit also addresses aggregates of concretes, concrete mix design, durability and construction issues of concrete structures.

300483.1 Engineering Project

Credit Points 20 **Level** 4

Prerequisite

300053.1 Professional Practice

Corequisite

81999.1 Industrial Experience (Engineering)

Equivalent Units

85018 - Civil & Environmental Engineering Project

Incompatible Units

300484 - Engineering Thesis

Special Requirements

Students will need to have completed at least 240 credit points of study so that they have a sufficiently solid grasp of their particular major field of engineering. Must have completed and/or be co-enrolled in 81999 Industrial Experience. Cannot co-enrol in 300484 Engineering Thesis.

.....

This is a multi-disciplinary research project aimed at encouraging students to participate in solving multi-disciplinary problems. Where possible these will be real-world problems for engineering companies and/or local councils in Western Sydney.

300029.1 Engineering Visualization

Credit Points 10 **Level** 1

Assumed Knowledge

C++ Programming and 3-D Geometry

Equivalent Units

80151 - Computer Graphics

.....

This unit discusses the graphic functions of visual C++ and techniques for object drawing. On completion of this unit, students will be able to apply the knowledge to the design of graphic drawing software.

300029.2 Engineering Visualization

Credit Points 10 **Level** 2

Assumed Knowledge

C++ Programming and 3-D Geometry

Prerequisite

300027.1 Engineering Computing

Equivalent Units

80151 - Computer Graphics

.....

This unit is aimed to provide a comprehensive introduction to fundamental concepts and algorithms in engineering visualization. Topics covered include visualization hardware, scan conversion of geometric primitives, 2D and 3D transformations, 3D viewing and projection, hidden surface removal, solid modeling, illumination models and image manipulation.

300674.1 Engineering, Design and Construction Practice

Credit Points 10 **Level** 1

Equivalent Units

300461 Engineering and Industrial Design Practice; 300034 Introduction to Professional Practice

Special Requirements

3621 Bachelor of Engineering students must be enrolled in a Key Program.

.....

This unit encourages students to explore the professional responsibilities and challenges faced by Engineers, Designers and Building professionals. Students are introduced to emerging issues and approaches to sustainability and the complex nature of the design problems they will encounter in professional practice. Students engage in a semester-long research and problem solving task that addresses environmental and social sustainability imperatives and fosters fundamental research, design and communication skills. Special emphasis is placed on lifelong learning, academic literacy and professional skills including information literacy, project management, and teamwork which equip students for subsequent academic and professional contexts.

300117.2 Enterprise Database

Credit Points 10 **Level** 3

Assumed Knowledge

General understanding of database design and development processes and techniques. Familiarity with at least one programming language.

.....

The emphasis of this unit is to expose students to the process and techniques of the development of enterprise databases. This unit extends students' basic knowledge of database systems through analysis of suitable strategies for record storage, primary file organisation and database indexing techniques, transaction recovery and concurrency

control strategies, general security and integrity considerations, understanding of emerging technologies in distributed databases, object-oriented databases and the world wide web.

200154.2 Entrepreneurial Management and Innovation

Credit Points 10 **Level** 2

Corequisite

200571.1 Management Dynamics AND **MG102A.1** Management Foundations OR **61611.1** Management Studies OR **H1727.1** Business Management

.....

This unit examines the theory, practice and nature of entrepreneurship, as a virtual but often neglected and misunderstood mode of management. A basic premise underlying this unit is that all business entities require enterprising management to enhance their survival ability. This proposition is relevant to new and older, small and large organisations. Additionally, contemporary management practice requires the modern manager to be creative in a learning context and the ways in which these creative environments are reached through entrepreneurship are explored.

300362.1 Environment and Health

Credit Points 10 **Level** 1

Assumed Knowledge

A basic grounding in academic skilling including experiential and problem-based learning; a basic awareness and understanding of contemporary environmental and public health issues

.....

This unit explores the holistic and socio-ecological nature of human health and its inextricable linkages with the socio-cultural and physical environment. In particular students are challenged to identify the underlying causes of traditional and contemporary environmental health issues and to explore the changing nature of environmental health, its professional practice and associated policy and the changing roles and responsibilities of stakeholders in government, business and industry. Students select from a range of health promotion and community education models in order to design and evaluate community intervention strategies to address selected environmental health issues.

101344.1 Environmental Area Mapping

Credit Points 10 **Level** 2

Assumed Knowledge

Students should be familiar with basic concepts pertaining to development and the environment.

Equivalent Units

DN208A - Environmental Area Mapping

.....

The unit describes mapping of natural/cultural patterns in the landscape that have meaning with respect to land use. The unit provides instruction on map-making, spatial aspects of the natural environment and GIS concepts and applications in environmental area mapping. This unit involves the preparation of a map base and database for land use planning with the aim of subdividing a landscape into natural use regions and describing attributes of each region.

300607.1 Environmental Biology

Credit Points 10 **Level** 3

Assumed Knowledge

Sound knowledge of biology and microbiology equivalent to undergraduate level 2 units.

Equivalent Units

14403 - Environmental Biology

.....

This unit builds on the basic ecology taught in Biology 2 and will provide students with a sound understanding of basic ecological principles and theories focussing on population and community ecology of terrestrial ecosystems. Starting with how populations grow and the structure of terrestrial ecological communities, the unit goes on to consider how communities change with time and as a result of natural disturbance, along with ways in which interactions between organisms influence the structure of natural populations and communities. Having established how populations and communities change naturally, the consequences of disturbance on ecosystems will be considered, with emphasis on effects at the community and population levels.

300647.1 Environmental Biotechnology

Credit Points 10 **Level** 3

Assumed Knowledge

Sound knowledge of undergraduate Level 2 microbiology and biochemistry. Microbiology laboratory skills.

Equivalent Units

MI303A - Environmental Biotechnology (V1)

.....

This unit focuses on microbial processes in the environment and illustrates how these processes may be employed in the control of pollution problems, pests and diseases, and in the recovery of minerals and fuel from the environment, including: microbial interactions in the environment; model ecosystems in the study of microbial environments; the role of biofilms in biofouling; micro-organisms in the removal of contaminants in the environment; microbial control of plant, pests and diseases; microbial systems in mineral and fuel recovery; strain construction in environmental biotechnology; ethics and the release of genetically engineered micro-organisms.

85021.2 Environmental Engineering

Credit Points 10 **Level** 4

Prerequisite

200237.1 Mathematics for Engineers 1

Equivalent Units

300737 - Environmental Engineering

.....

This unit outlines the essential issues of the environment that a civil engineer will address as a personal and professional contributor to the development of Australia. It has a bias towards water-related environmental issues.

300614.1 Environmental Geochemistry

Credit Points 10 **Level** 3

Prerequisite

300224.1 Chemistry 1 AND **300225.1** Chemistry 2

Equivalent Units

14525 - Environmental Geochemistry

.....

This unit covers composition of ocean, ground and surface waters and their interactions with the atmosphere, rocks, soils, sediments and man-made pollutants; transfer of dissolved material between environments and detection and control of toxic waste materials; environmental quality criteria, field assessment and sampling and modelling of selected environmental systems.

300629.1 Environmental Planning

Credit Points 10 **Level** 3

Equivalent Units

EH324A - Environmental Planning

.....

This unit is an introduction to environmental planning for "non-planners". It is particularly targeted at those who will work with Environmental Planners within a local and state government context. This unit will provide the student with a brief introduction to the ways that the environmental planning system can be used to protect the natural environment and/or encourage sustainable development practices. There is a particular focus on setting goals for environmental protection and then looking at ways in which the current planning regulations can be used to assist with achieving these goals. Current metropolitan planning and strategy will be examined including the Metropolitan Strategy for Sydney and subordinate Subregional Strategies.

300630.1 Environmental Regulations

Credit Points 10 **Level** 3

Equivalent Units

EH325A - Environmental Regulations

.....

This unit aims to provide students with a broad understanding of the current environmental regulations available to environment protection and planning authorities at the State and Local Government level to protect and manage the environment. It is a suitable subject for students entering Government or industry in environmental management, health and planning roles. This unit will focus on the environmental management opportunities provided by the Local Government Act, Protection of the Environment Operations Act, and Environmental Planning and Assessment Act. Commonwealth Legislation including the Environment Protection and Biodiversity Conservation Act will also be examined.

300284.2 Environmental Risk Management

Credit Points 10 **Level** 3

Equivalent Units

EH309A - Environmental Management 1

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This unit aims to examine the world of environmental management, introducing students to environmental management systems concepts, as well as practical operational tools for doing. Students are introduced to the processes of Environmental Impact Assessment and Environmental Auditing; the tools and methods required for assessment, and their role in the review and processing of an EIS/EA. This unit further develops the students applied approach to solving real world problems.

300626.1 Epidemiology

Credit Points 10 **Level** 2

Equivalent Units

EH214A - Epidemiology

.....

Epidemiology is the study of the distribution and determinants of health related states in populations for the management of health problems. Epidemiology is not limited to the study of epidemics but is a method for measuring and managing physical, mental and social health in the living, working and recreational environments. The unit introduces a range of approaches for identifying and understanding risk factors for human health and disease, and guides the student in designing an investigation protocol aimed at assessing a specific health state within the student's own particular field of interest. The unit thus addresses a range of vocational needs while introducing the epidemiological method for risk assessment and research.

400168.1 Ergonomics and Work Occupations

Credit Points 10 **Level** 3

Equivalent Units

E3025 - Ergonomics 2

.....

The productivity role is a key aspect of adult life for most people. Occupational therapists and other professionals play a major role in assisting clients who have had their productivity role affected in some way. This unit explores the importance of productivity for adults, in particular those engaged in paid employment. The focus of this unit is the rehabilitation of the injured worker within the context of the OHS legislation and the WorkCover case management system. In addition, this unit will explore vocational counselling and rehabilitation for clients with psychosocial, cognitive and physical disabilities.

400782.1 Essentials of Health Promotion

Credit Points 10 **Level** 2

Equivalent Units

400271 - Introduction to Health Promotion

Special Requirements

To enrol in this unit students must complete a Criminal Record Check and for students enrolled in course 4545 Bachelor of Medical Science must also complete NSW Health Immunisations.

.....

This unit is being replaced by 400867 Approaches to Health Promotion in 2010. Health promotion is a process that seeks to enable individuals, communities and populations to increase control over their health by addressing the determinants of health, resulting in improved health outcomes. Theoretical underpinnings of health promotion are explored, factors enhancing and limiting activity reviewed and the levels of health promoting actions demonstrated. Health promotion competencies including conducting a needs analysis, planning and evaluating an intervention are explored. Satisfactory completion of OH&S for student placements is a requirement.

200468.1 Estimating 1

Credit Points 10 **Level** 2

.....

To provide an understanding of factors that affect the cost of buildings; introduce costing techniques for new and existing buildings and provide students with the skills necessary to prepare builder's estimates.

BG412A.1 Estimating 2 (V2)

Credit Points 10 **Level** 5

Assumed Knowledge

Building construction including residential, light industrial and small commercial as covered in the subjects Building 1 and Building 2 and building measurement as covered in Building Quantities and Estimating as covered in Estimating 1.

Equivalent Units

300726 - Estimating 2

.....

This unit gives students a hands-on experience of the tendering process for construction professionals. Students undertake a team research project to determine the optimum parameters for a civil/building infrastructure estimation.

400249.1 Ethical and Legal Issues in Health Care

Credit Points 10 **Level** 3

.....

This unit enables students to explore and develop an understanding of the ethical and legal issues important within contemporary health care. Through the use of case studies students will analyse profound ethical and legal challenges facing current health care that are equally important to health professionals, consumers and society generally. Additionally, students studying to work within health care, including as complementary health practitioners will develop a comprehensive understanding of the requirements for ensuring that their practice conforms to legal doctrines and ethical standards.

101114.1 Ethics in Education

Credit Points 10 **Level** 2

Equivalent Units

100318 - Professional, Ethical and Legal Issues in Early Childhood

.....

Professionals working with children, young people and families must base all action on sound legal and ethical foundations. Students are introduced to concepts of professions and professionalism and oriented to the professional and ethical aspects of teaching, particularly in New South Wales. Students need to be aware of, and develop reflective understandings in concepts of morals and ethics, accountability, professionalism, ethical responses, ethical communication and dilemma resolution. The role of laws, codes and guidelines is outlined and specific national and state legislation, policies, codes and guidelines are introduced, in particular regulations pertaining to mandatory reporting of child abuse, occupational health and safety. Contemporary and global approaches to ethics and critiques of traditional western approaches are introduced.

400817.2 Evidence Based Nursing Practice

Credit Points 10 **Level** 3

Incompatible Units

400755 - Evidence Based Practice 1, 400765 - Evidence Based Practice 2

Special Requirements

Students must be enrolled in the Bachelor of Nursing Studies.

.....

This unit explores concepts related to Evidence-Based Nursing which will further develop student understanding of the significance of scholarship, research and the research processes and how these may inform professional nursing knowledge and practice This unit consolidates and assists student’s synthesis of the major methodological approaches to support evidence-based practice, the process of research/inquiry, and their application in the development of a defensible and justifiable nursing research project

400755.2 Evidence-Based Nursing 1

Credit Points 10 **Level** 2

Equivalent Units

400057 Nursing Context 4

Special Requirements

Students must be enrolled in Bachelor of Nursing programs.

.....

This unit explores concepts related to 400755 Evidence Based Nursing, which will further develop student understanding of the significance of scholarship, research and the research processes and how these may inform professional nursing knowledge and practice.

400824.2 Evidence-Based Nursing 1 (Advanced)

Credit Points 10 **Level** 2

Incompatible Units

400055 - Nursing in Context 4, 400755 - Evidence-Based Nursing 1 (EBN1)

Special Requirements

This unit is only available to students enrolled in course 4648 - Bachelor of Nursing (Advanced)

.....

This unit explores and critically applies the concepts related to Evidence-Based Nursing which will further develop student understanding of the significance of scholarship, research and the research processes and how these may inform professional nursing knowledge and practice. The unit will enable the student to discuss research related topics, applying them to nursing practice.

400765.2 Evidence-Based Nursing 2

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge and content related to 400755 - Evidence Based Nursing 1.

Prerequisite

400755.1 Evidence-Based Nursing 1

Equivalent Units

400060 - Nursing Context 5

.....

This unit consolidates and assists student's synthesis of the major methodological approaches to support evidence-based practice, the process of research/inquiry and their application in the development of a defensible and justifiable nursing research project.

400827.2 Evidence-Based Nursing 2 (Advanced)

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge and content related to Evidence-Based Nursing 1 (Advanced) (EBN1-Adv).

Prerequisite

400824.1 Evidence-Based Nursing 1 (Advanced)

Incompatible Units

400765 - Evidence-Based Nursing 2 (EBN2) or equivalent unit

Special Requirements

This unit is only available to students enrolled in course 4648 - Bachelor of Nursing (Advanced). Students must maintain a GPA of 5.5 or greater.

.....

This unit consolidates and assists student's synthesis of the major methodological approaches to support evidence-based practice, the process of research/inquiry, and their application in the development of a defensible and justifiable nursing research project.

400471.1 Exercise and Health Science Research and Practice

Credit Points 10 **Level** 5

Corequisite

400473.1 Therapeutic Recreation Thesis A OR **400483.1** Sport Management Thesis C OR **400479.1** Sport and Exercise Science Thesis C OR **400475.1** Therapeutic Recreation Thesis C OR **400481.1** Sport Management Thesis A OR **400477.1** Sport and Exercise Science Thesis A OR **400558.1** Honours Thesis in Health Science (F/T) OR **400559.1** Honours Thesis in Health Science (P/T Year 1)

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This unit develops knowledge, understanding and application of the process and the practice of inquiry in the exercise and health sciences. Students develop a research question, design and operationalise it with appropriate procedures. Students are able to select from a range of research methods appropriate to their discipline area. A major outcome of the unit is the development of a formal project proposal for conducting the students thesis inquiry. Ethical issues and aspects such as human rights and ethics clearances, confidentiality and respect for participants in research projects and the obligations placed on researchers will be covered.

400472.1 Exercise and Health Sciences Honours Seminar

Credit Points 10 **Level** 5

Corequisite

400473.1 Therapeutic Recreation Thesis A OR **400477.1** Sport and Exercise Science Thesis A OR **400481.1** Sport Management Thesis A OR **400475.1** Therapeutic Recreation Thesis C OR **400479.1** Sport and Exercise Science Thesis C OR **400483.1** Sport Management Thesis C

.....

This seminar program is an integral part of the School of Exercise and Health Sciences end on Honours programs. This unit will provide students with a professional forum in which to discuss and present major aspects of their research project. Through active participation in this seminar students will contribute to one another's projects. Students will present various stages of their own work for peer review and critical appraisal, whilst also critically reviewing the research work of others. Students will be encouraged to articulate their experiences and reflection

upon their project work within a supportive and challenging learning environment.

400327.2 Exercise in Musculo-Skeletal Injury Rehabilitation

Credit Points 10 **Level** 3

Prerequisite

400326.1 Exercise Prescription for General Populations

Special Requirements

To undertake this unit, students must comply with the following special requirement: Completion of a Prohibited Employment Declaration.

.....

This unit considers the role of exercise in the rehabilitation of musculoskeletal injuries including work and sporting injuries. Including: injury and reinjury prevention strategies; mechanisms of injury; pathophysiology of injury and repair process; design and evaluation of rehabilitation exercise programs; how the exercise program functions in concert with other methods of injury treatment and management; important pharmacological, communication, psychosocial and cultural considerations; the role of the Sport and Exercise Scientist in the Sports Medicine Team and Workers Compensation Team.

400326.3 Exercise Prescription for General Populations

Credit Points 10 **Level** 2

Prerequisite

400884.1 Exercise Nutrition, Body Composition and Weight Control AND **400869.1** Human Anatomy and Physiology 2 AND **400882.1** Introduction to Biomechanics

Special Requirements

This unit is only available to students enrolled in course 4658 - Bachelor of Health Science (Sport and Exercise Science). To undertake this unit, students must comply with the following special requirements: completion of a Child Protection clearance; Criminal Record Check clearance; possess a current WorkCover Authority approved First Aid Certificate.

.....

The exercise prescription area is designed to give students an understanding of and experience in exercise prescription and fitness program construction for the general population of all ages and both genders, including pre exercise screening and fitness testing. It will focus on the development of general health related fitness programs which improve aerobic and anaerobic fitness, flexibility, muscular strength and endurance, including resistance training. Students will design, implement and evaluate exercise programs with individual clients.

400328.2 Exercise Prescription for Special Populations

Credit Points 10 **Level** 3

Prerequisite

400326.1 Exercise Prescription for General Populations

Special Requirements

To undertake this unit, students must comply with the following special requirements: Completion of a Prohibited Employment Declaration.

.....

Exercise Prescription for Special Populations is concerned with teaching students how to develop exercise programs for special populations (High risk). Emphasis will be placed on: understanding the underlying condition(s), its impact on quality of life as well as exercise and how exercise can be used for prevention and management of the condition(s). Students will be involved in the design and implementation of these exercise programs, for such special populations, with emphasis on using a scientific manner that allows participants to achieve optimum results whilst maintaining a high regard for safety, adherence and motivation.

100680.1 Exercise Psychology

Credit Points 10 **Level** 2

Prerequisite

100678.1 Introduction to Sport Psychology OR **101184.1** Psychology: Human Behaviour

Special Requirements

Pre-requisites will not apply to students enrolled in course codes 1630 Graduate Diploma in Psychological Studies and 1501 Graduate Diploma in Psychology. Enrolment in these awards requires graduate status; hence the students have demonstrated proficiency in tertiary studies. Each applicant in these awards is assessed individually and provided with an individual study sequence by the Course Advisor.

.....

Exercise psychology is a topic of particular relevance to those working in health and fitness industries. Although it is the aim of the Australian Sports Commission to increase participation in physical activity amongst the general population, there remains only a small percentage that actually does exercise on a regular basis. As a result, there is a growing interest in exercise adherence, and the related development of the discipline of Exercise Psychology in its own right. Exercise Psychology involves the study of psychological processes and behaviours related to exercise participation. This unit will cover the range of age groups and special populations to which the study of Exercise Psychology pertains.

300638.1 Experimental Foods

Credit Points 10 **Level** 3

Equivalent Units

FS321A - Experimental Foods

.....

This unit aims to extend students' knowledge of food preparation, basic food science and principles, the interaction of ingredients with one another and the added effects of physical procedures on the end product. Students develop advanced scientific methodologies to give reproducibility. This is a recommended unit for those

intending to advance in the areas of recipe development and new product development.

300507.1 Extended Computing Project 1

Credit Points 20 **Level** 3

Incompatible Units

300097 - Computing Project 1

Special Requirements

All students must have completed 160 credit points, including an Analysis and Design unit, a Programming unit and a Database unit. Students must have passed two units from the following: 300104 Database Design and Development OR 300131 IntroductioIn to Analysis and Design OR 300404 Formal Software Engineering. Plus one unit from the following: 300156 Programming Principles 2 OR 300167 Systems Programming 1.

.....

This unit is the culmination and application of knowledge a student will have gained as part of their studies to date. The projects are undertaken within a team environment and are to provide solutions for real computing problems sourced from main ICT vendors, governmental departments and other relevant businesses. The problems will apply to a wide range of fields including but not limited to: computer science, computer forensics, e-Business, information systems, games and editors, e-Health, e-Government and e-Voting, biomedical applications, e-Learning and PDA, mobile and wireless technologies, latest technologies and service-oriented architectures (SOA). The group will follow established software engineering methodology in all stages of the design and implementation of project, including elements of project management, version control and required documentation. The focus of the unit is the delivery of a software product of a marketable quality, including complete technical documentation and user manuals.

300508.1 Extended Computing Project 2

Credit Points 20 **Level** 3

Prerequisite

300507.1 Extended Computing Project 1

Incompatible Units

300098 - Computing Project 2

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Extended Computing Project 2 builds on the experience gained in Extended Computing Project 1 (ECP1), which is its prerequisite unit. As in ECP1, the projects are undertaken within a team environment. This unit will maintain the range and scope of ECP1, but it will allow the students to further refine the projects undertaken as well as add to them the elements of research and innovation. Note: For those degrees where 300098 Computing Project 2 is a core unit, students will be able to complete the new extended unit as an alternative. Both units will be mutually exclusive, i.e. do not count for credit with one another.

300415.1 Fabrication of Nanostructured Devices

Credit Points 10 **Level** 3

Assumed Knowledge

Chemistry 1 and Chemistry 2. Biology 1 and Nanotechnology 2. Applied Instrumentation in Nanotechnology. Organic Chemistry 2

.....

This unit deals with methods of synthesising and assembling nanostructures (eg rotaxanes and catenanes) and spectroscopic techniques used to characterise their composition and structure. The students will learn about the functional groups and their applications such as wiring molecular components to a frame. These molecules will act as moving components in nanomachines, molecular switches, prodders, chemical rotors, paddles, gears, molecular brakes and molecular shuttles. The movements are controlled and driven by pH of the medium, introduction of metal ions, light and electron potential. Case studies on evolution of nanodevices from concept to commercialisation will also be pursued in this unit.

400760.2 Family Health Care: Child and Adolescent Nursing

Credit Points 10 **Level** 2

Incompatible Units

400408 - Child and Family Health, 400643 - Child and Family Health Practice

Special Requirements

Students must be enrolled in the Bachelor of Nursing or the Bachelor of Early Childhood Studies (Child and Family) to enrol in this unit.

.....

This unit explores physical, social, political and community issues which impact on the health of children, adolescents and families. The knowledge gained will be appropriate for working with children and families within a hospital or community setting. The promotion of health and prevention of illness underpines this unit.

400763.2 Family Health Care: Chronicity and Palliative Care Nursing

Credit Points 10 **Level** 3

Assumed Knowledge

Completion of all Year 1 and Year 2 Nursing units

Prerequisite

400753.1 Medical-Surgical Nursing 1 AND **400757.1** Medical-Surgical Nursing 2

Equivalent Units

400065 - Nursing Therapeutics 10

.....

This unit engages students in the assessment, planning, implementation and evaluation of professional nursing care for those individuals and their families living with a chronic illness and those dying from a life threatening illness.

400756.2 Family Health Care: Health Issues and Australian Indigenous People

Credit Points 10 **Level** 2

Special Requirements

Students must be enrolled in the Bachelor of Nursing OR Bachelor of Nursing (Graduate Entry) to enroll in this unit.

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This unit provides the student with opportunities to investigate and discuss health issues as they relate to Aboriginal and Torres Strait Islander Peoples.

400761.2 Family Health Care: High Acuity Nursing

Credit Points 10 **Level** 3

Assumed Knowledge

Completion of all Year One and Year Two Nursing units.

Prerequisite

400753.1 Medical-Surgical Nursing 1 AND **400757.1** Medical-Surgical Nursing 2

Equivalent Units

400062 - Nursing Therapeutics 9

Special Requirements

Special Requirements are those stipulated by the NSW Health and UWS. At present these include: Prohibited Employment Declaration (PED), Criminal Record Check (CRC), Adult Health Immunisation and Workcover accredited Senior First Aid Certificate.

.....

This unit will elaborate and consolidate mechanisms of health breakdown and complex nursing concepts and professional nursing practices that promote, maintain and support health and wellness. The focus is on providing professional nursing care of people who are experiencing acute, profound physiological, psychosocial and spiritual health breakdown.

400767.2 Family Health Care: Older Adult Nursing

Credit Points 10 **Level** 3

Assumed Knowledge

Years 1 and 2 knowledge and skill.

Prerequisite

400753.1 Medical-Surgical Nursing 1 AND **400757.1** Medical-Surgical Nursing 2

Equivalent Units

400644 - Gerontic Practice

Special Requirements

Special Requirements are those stipulated by the NSW Health and UWS. At present these include: Prohibited Employment Declaration (PED), Criminal Record Check (CRC), Adult Health Immunisation and Workcover accredited Senior First Aid Certificate.

.....

The health and wellbeing of older people reflect their genetic inheritance, the environment, lifestyle choices and a complex set of developmental experiences upon which individuals, groups and socio-political influences have impinged. Nevertheless, being or becoming 'old' is only one part of a person's life experience. Thus, in order to understand 'being old', we need to have knowledge of such influences and experiences. By promoting the health and therefore the potential of people, nurses have the opportunity to be in the forefront of health care. This opportunity places nurses in a position to intervene therapeutically in the lives and upon the lifestyles of older people by working with individuals and groups to facilitate healthy aging and by promoting positive attitudes towards ageing and older people.

400855.1 Family Health Care:Chronicity and Palliative Care Nursing (Advanced)

Credit Points 10 **Level** 3

Assumed Knowledge

Completion of all Year 1 and Year 2 Nursing units. Completion of all Year 2 Bachelor of Nursing (Advanced) units.

Prerequisite

400753.1 Medical-Surgical Nursing 1 AND **400825.1** Medical Surgical Nursing 2 (Advanced)

Incompatible Units

400763 - Family Health Care: Chronicity and Palliative Care Nursing

Special Requirements

Restrictions on clinical practicum placements students must be enrolled in the Bachelor of Nursing (Advanced) and meet special requirements for safety and professional issues when dealing with the public. Special Requirements are those stipulated by the NSW Health and UWS. At present these include: Prohibited Employment Declaration (PED), Criminal Record Check (CRC), Adult Health Immunisation and Workcover accredited Senior First Aid Certificate.

.....

This unit engages students in advanced assessment, planning, implementation and evaluation of professional nursing care for those individuals and their families living with a chronic illness and those dying from a life threatening illness. The unit will enable the student to collaboratively work with medical students to apply nursing skills and critical thinking skills to the challenges of patients with chronic and life threatening illnesses. The unit will enable the student to undertake an advanced health assessment , apply critical thinking skills in nursing practice and to understand the impact of chronic and life threatening illness on the nurse, client and their family.

400854.2 Family Health Care:Health Issues and Australian Indigenous People (Advanced)

Credit Points 10 **Level** 2

Incompatible Units

400756 - Family Health Care: Health Issues and Australian Indigenous People

Special Requirements

Restrictions on clinical practicum placements students must be enrolled in the Bachelor of Nursing (Advanced) and meet special requirements for safety and professional issues when dealing with the public. Special Requirements are those stipulated by the NSW Health and UWS. At present these include: • Prohibited Persons Employment Declaration (PPED) • Criminal Record Check (CRC) • Adult Health Immunisation • Workcover accredited Senior First Aid Certificate

.....

This unit version replaces version 1 from 2010. This unit provides the student with opportunities to investigate and discuss health issues as they relate to Aboriginal and Torres Strait Islander Peoples. Further, this unit will enable the student to understand the role of the nurse in health promotion programs for Indigenous and/or Torres Strait Island people.

101322.1 Family Life, Health and Leisure

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge of sociological concepts and theories or 40 credit points of completed study.

Equivalent Units

25008 - Family Studies and Health

.....

This unit is designed to expand student's understanding of the relationship between society, family life and people's experiences of health, leisure and fitness. The unit provides the opportunity for students to explore the role of the family as a social institution and examining its importance in the development of identity, the reproduction of social structure & culture and in the experience of health, illness & leisure. Central to this unit is the notion that the family occurs in and is impacted upon by a variety of social, cultural and historical contexts. The unit develops these themes from a sociological perspective and students are actively involved in exploring these issues.

300504.1 Fermentation Science

Credit Points 10 **Level** 3

Assumed Knowledge

Basic sciences with a sound knowledge of microbiology

Prerequisite

300300.1 Microbiology 1 OR **300321.1** Microbiology 2

Equivalent Units

MI304A - Fermentation Practicum

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Fermentation forms an essential component of most biotechnological processes. From the standpoint of biotechnology, it is used to describe any process for the production of a product/service by the culture of microorganisms. This unit will cover the principles, applications, current status and new developments in fermentation science. It will provide an understanding of the different stages involved in a fermentation process, starting from the isolation of a desired organism through to the recovery of a product. The different modes of fermentation will also be dealt with. The applications will focus on commercial fermentations.

300659.1 Field Project 1

Credit Points 10 **Level** 3

Assumed Knowledge

Progression requirements met for Bachelor of Natural Science undergraduate Level 1 and Level 2 units.

Equivalent Units

AG301A - Agricultural Systems Project, 300420 - Animal Systems Project, 300286 - Environmental Practice 1

.....

This unit requires students to initiate a major project with clients from industry, research organizations or public utilities associated with the professional practice domains of the natural sciences. The project work includes a number of activities (eg developing project proposal and methodology etc) negotiated with the client and will draw together all of the previous learning in the B. Nat Sci./BSc. The project will entail interdependent relationships with the client, staff supervisor and other resource people and will involve the full range of project management skills. Students will be required to demonstrate their capacity to implement the project by production of a literature review and detailed project proposal. This subject prepares students for 300660 Field Project 2 which focuses on students putting their knowledge into action in a professional setting.

300660.1 Field Project 2

Credit Points 10 **Level** 3

Assumed Knowledge

Progression requirements met for Bachelor of Natural Science undergraduate level 1 and level 2 units.

Prerequisite

300659.1 Field Project 1

Equivalent Units

AG301A - Agricultural Systems Project, 300420 - Animal Systems Project, 300286 - Environmental Practice 1

.....

This unit requires students to undertake a major project with clients from industry, research organizations or public utilities associated with the professional practice domains of the natural sciences. The project work includes a number of activities developed in 300659 Field Project 1. The project will entail interdependent relationships with the client, staff supervisor and other resource people and will involve the full range of project management skills. Students will be required to demonstrate their capacity to implement the project by production of a major report and seminar. The unit places a heavy emphasis on continued development of professional competency in preparation for students to enter the workforce.

300648.1 Food and Pharmaceutical Biotechnology

Credit Points 10 **Level** 3

Assumed Knowledge

Sound knowledge of microbiology, biochemistry and basic biotechnology. Laboratory skills in microbiology and biochemistry.

Equivalent Units

MI305A - Food and Pharmaceutical Biotechnology

.....

This unit provides an understanding of the principles and applications of biotechnology specifically related to the fields of foods and pharmaceuticals, and shows how the concepts in biotechnology are used in these fields. It also gives an overview of the current status of biotechnology in these areas.

300636.1 Food Processing and Analysis

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge equivalent to successful completion of 300498 - Food Science 1 and 300499 - Food Science 2.

Equivalent Units

FS215A - Food Science and Technology 2.2

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This subject is aimed at developing an understanding of the processing of food, in particular the chemical, physical, functional and processing requirements of properties of cereal, meat and dairy foods. Aspects of food additives and modifying agents and their functions in processed food will also be covered. Basic concepts of chemical and physical analysis of foods, construction of nutrient panels, and methods for sensory analysis of foods. These concepts will be related to food manufacturing requirements and processes.

300637.1 Food Product Development Practicum

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge gained from previous units studied, particularly Food Science principles, Nutrition, Food Science and Technology, Food Engineering, Chemistry, Physics and Microbiology.

Equivalent Units

FS304A - Food Product Development Practicum 3.1

.....

This unit aims to allow students to work in a product development team as in industry. The entire process of product development includes: idea generation; collating market, technical and consumer information; consumer surveying to establishing need/desire for a new product; development processing, testing and evaluation, packaging; promotion and marketing. Students will develop a specialised knowledge of the total product development system with ability to design, conduct and analyse consumer surveys; develop product formulations and recipes with evaluation of sensory properties, nutritional composition and other functional attributes; design, organise and analyse sensory/acceptance/ performance during the development of the product.

300701.1 Food Quality Assurance

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge of food preservation, elementary HACCP.

Equivalent Units

300500 - Quality Assurance and Food Safety, FS326A - Food Science and Technology Practicum 3.2

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The goal of this unit is to integrate previous studies in food processing and food safety to develop an understanding of food quality assurance, good manufacturing practices and quality management systems as they are applied to the control and management of food production. Food laws, regulations and codes at State, National and International levels are covered. The unit includes aspects of elementary toxicology and risk analysis. The unit also includes a practical exercise of developing a HACCP plan for a food manufacturing process, and the implementation of quality management systems such as ISO 22000 to a food process.

300639.1 Food Safety

Credit Points 10 **Level** 3

Assumed Knowledge

Students are expected to have some basic knowledge of microbiology and chemistry.

Equivalent Units

FS323A - Food Safety A

.....

Food safety is rapidly evolving with the emergence of new food-borne diseases, changing patterns of disease, evolving approaches to risk analysis (based upon a solid scientific foundation and international harmonisation) and an emerging requirement that food producers, processors, handlers and consumers take shared responsibility for the safety of food within their care. The overall purpose of this unit is to equip students with the necessary skills to identify, evaluate and control food-borne hazards, and to enable those completing the unit to better protect the safety and quality of the food supply. This can be achieved by employing knowledge of regulatory requirements; food contamination; food spoilage agents and hazards; principles of good hygienic practice and preservation in food production, preparation and distribution; and other key elements of food safety.

300498.1 Food Science 1

Credit Points 10 **Level** 1

.....

This unit will introduce students to food quality and safety, selected nutritional topics, food studies, as well as food

tradition and culture. Students will gain an appreciation of food composition and how it affects spoilage and food quality. They will be introduced to the prerequisite program (PRP) as used as part of HACCP. Understanding of the cultural significance of food, of eating, looking widely at society and the attitudes of, and circumstances which surround, its consumption.

300499.1 Food Science 2

Credit Points 10 **Level** 1

Assumed Knowledge

Basic knowledge of food composition.

Equivalent Units

FS109A - Food Science & Technology Practicum 1.2

.....

This unit will introduce students to food components (water, proteins, lipids and carbohydrates) and their importance to quality and nutrition. Chemical and physical methods of food preservation will be covered, as well as unit operations (concentration drying, freezing and heat treatment). Students will undertake a literature based HACCP exercise.

300377.1 Forensic Analysis of Physical Evidence

Credit Points 10 **Level** 2

Assumed Knowledge

Successful completion of at least one first year undergraduate chemistry unit.

Special Requirements

Students must be enrolled in 3589 Bachelor of Science (Forensic Science).

.....

'Physical Evidence' is tangible evidence left at crime scenes and/or found on suspects, which is in some way related to a criminal incident and links or eliminates suspects to these activities. Examples of physical evidence include; glass fragments, hairs and fibres, paint chips, fingerprints, footwear impressions (footprints), biological material (blood, semen etc), narcotics, toolmarks, tape comparison, explosive residue, GSR (gun shot residue) and others. This unit explores the processes required for the analysis of physical evidence and combines analytical and physical comparative examination methodologies. Students will use these methods to examine; the chemical composition of trace evidence and identify unique physico-chemical markers, the detection of chemical residues and biological material, physical comparison of suspect and exemplar items such as footwear impressions and toolmarks left at the crime scene, and the comparison of paint chips, glass fragments, hairs and fibres. Students will explore these methodologies using practical case studies and will be required to present their evidence/findings at the completion of the unit.

300493.1 Forensic and Environmental Analysis

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge of general chemistry equivalent to satisfactory completion of Chemistry 1 and Chemistry 2.

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This unit extends the student's knowledge and understanding of analytical instrumentation that is relevant to forensic investigations and analysis in the environmental and food sciences. It will provide an understanding of the chemical and physical principles underlying the utilisation of instrumentation in chemical analysis. Topics include principles of spectroscopic techniques separation methods; sample collection and storage; presumptive testing; an extended range of modern chemical instrumentation including gas and liquid chromatography; atomic spectroscopy; mass spectroscopy; x-ray methods and spectroscopic methods.

300378.1 Forensic Archaeology

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge of general aspects of recording and crime scene documentation, 300375 Digital Forensic Photography 1, 300374 Crime Scene Analysis and 300377 Forensic Analysis of Physical Evidence.

Special Requirements

Students must be enrolled in 3589 Bachelor of Science (Forensic Science).

.....

This unit provides an understanding of the processes of locating, recovering and undertaking scientific examination of material remains as part of a forensic investigation. The unit will place particular emphasis on the decay processes affecting such material recovered from buried environments and the importance of scientific excavation and recovery in any investigative study undertaken on the material. Students will investigate a number of case studies of the successful use of forensic archaeology, as well as learning the dangers that can befall an investigation that does not take sufficient account of diagenetic changes affecting material remains once buried.

300494.1 Forensic Chemistry

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge of general and analytical chemistry equivalent to satisfactory completion of Chemistry 1, Chemistry 2 and a second year analytical chemistry unit.

.....

This unit extends the student's knowledge and understanding of chemical topics that are relevant to forensic investigations and provides a deeper understanding of the underlying chemical and physical principles. Topics are taught in the context of the correct principles and procedures for collecting and conserving

evidence and the safe handling of chemical substances. Topics include an extended range of modern chemical instrumentation; the chemistry and analysis of various classes of drugs; clandestine drug laboratories; fire, arson and accelerants; explosions and explosives; chemical and biological warfare agents.

300654.1 Forensic Science

Credit Points 10 **Level** 1

Assumed Knowledge

Basic academic skills, including the ability to write essays in English at a level appropriate to a first-year undergraduate student.

Equivalent Units

SC103A - Forensic Science

.....

This unit aims to give students a basic understanding of scientific methodology as it applies to the collection, analysis and interpretation of forensic evidence. Students are introduced to a range of analytical methods that are used with various types of forensic evidence, and these are discussed in relation to case studies. The role of human factors is discussed, together with the importance of critically evaluating forensic evidence and the means by which it was obtained.

300121.1 Formal Languages and Automata

Credit Points 10 **Level** 3

Prerequisite

200025.1 Discrete Mathematics

Equivalent Units

14948 - Formal Languages and Automata, 14909 - Formal Languages and Automata

.....

Three abstract models of computation are studied in this unit. The first is the finite automaton, together with regular languages and regular expressions. The second is the pushdown automaton, together with the associated languages and grammars. The third is the Turing machine. This allows study of the power of computers in general and their limitations, in particular situations: it is shown that there are problems for which there is no algorithmic solution. This unit explores the application of formal languages in the design of compilers and text processors.

300404.1 Formal Software Engineering

Credit Points 10 **Level** 3

Prerequisite

200025.1 Discrete Mathematics AND **300103.1** Data Structures and Algorithms

.....

This unit is concerned with the design, development and post-delivery maintenance of software systems. The unit pays special attention to requirements engineering, formal specification techniques and design methodologies. The B-method is used to produce consistent, re-usable specifications and develop code that is both efficient and correct.

300485.1 Foundation Engineering

Credit Points 10 **Level** 3

Prerequisite

85012.1 Soil Engineering

Equivalent Units

85017 - Foundation and Drainage

.....

This unit will present the application of principles of soil mechanics to the solution of foundation and geotechnical problems including the evaluation of allowable bearing capacity of shallow and pile foundations, the stability of earth retaining structures and stability of slopes.

400324.2 Foundations of Exercise Prescription

Credit Points 10 **Level** 2

Assumed Knowledge

Students should have a working knowledge to meet the objectives prescribed in Human Medical Sciences 2 & 3.

Prerequisite

400282.2 Introduction to Sports Medicine

.....

Two foundation areas of exercise prescription are treated in this unit. Students will be introduced to: the science of body measurement (anthropometry) which includes the correct measurement of skinfolds, girths and bone widths that make up the Restricted Profile, the calculation and interpretation of measures such as percentage body fat and body density; AND the principles of training, types of training, exercise analysis leading to the design of basic exercise programs and exercise prescription.

400861.1 Foundations of Medicine 1

Credit Points 80 **Level** 1

Assumed Knowledge

Year 12 Chemistry.

Special Requirements

Students will have completed a Prohibited Employment Declaration, undergone state and national Criminal Record Check, have completed a WorkCover accredited Senior First Aid Certificate and have an up to date Adult Vaccination Record. Students must also sign a declaration that they understand and comply with: - Infectious Diseases Policy - Health Records and Information Privacy Act (HRIPA), 2002 - UWS' submitting their details to the NSW Medical Board

.....

Students must be enrolled in 4641 Bachelor of Medicine, Bachelor of Surgery. The major objectives are to gain an integrated understanding of the structure and function of the human body. This will be addressed at the levels of organ systems, tissues, cells and molecules. The scientific basis of the following topics will be discussed: whole body

organisation including basic anatomy, roles of the major organ systems, functional organisation of cells and their specific organelles, characteristics of specialised cells, structure-function characteristics of major biological molecules including carbohydrates, lipids, proteins, enzymes and DNA, the biochemical basis of complex processes such as homeostasis, reproduction and inheritance, growth and development, defence against infectious agents, pathological changes, ageing and death. The course then examines nutrition and metabolism before exploring the structure, function and pathology of the gastrointestinal system (including liver), cardiovascular system and respiratory system. The students will also explore the complexity of medical practice and areas from doctor/patient interaction to an examination of the health care system. A particular focus will be the communities that make up Greater Western Sydney. Topics covered include: communication skills, patient history and examination, ethics, psychosocial aspects of medicine, impacts of gender, culture and deprivation on health and medical care, professionalism, population health and evidence based medicine.

400862.1 Foundations of Medicine 2

Credit Points 80 **Level** 2

Prerequisite

400861.1 Foundations of Medicine 1

Equivalent Units

400739 - Scientific Basis of Medicine 2, 400740 - Health Practice 2

Special Requirements

Students will have completed a Prohibited Employment Declaration, undergone state and national Criminal Record Check, have completed a WorkCover accredited Senior First Aid Certificate and have an up to date Adult Vaccination Record. Students must also sign a declaration that they understand and comply with: - Infectious Diseases Policy - Health Records and Information Privacy Act (HRIPA), 2002 - UWS' submitting their details to the NSW Medical Board

.....

Students must be enrolled in 4641 Bachelor of Medicine, Bachelor of Surgery. The major objectives are to gain an integrated understanding of the structure and function of the human body. This will be addressed at the levels of organ systems, tissues, cells and molecules. The scientific basis of the following topics will be discussed: renal system, musculoskeletal system, neuroscience, reproduction and development, endocrinology, infectious disease and cancer. The students will continue their exploration of the complexity of medical practice and areas from doctor/ patient interaction to an examination of the health care system. A particular focus will be the communities that make up Greater Western Sydney. Topics covered include: communication skills, patient history and examination, ethics, psychosocial aspects of medicine, impacts of gender, culture and deprivation on health and medical care, professionalism, population health and evidence based medicine.

300606.1 Foundations of Statistical Modelling and Decision Making

Credit Points 10 **Level** 2

Assumed Knowledge

200192 - Statistics for Science, or 200032 - Statistics for Business or 200263 - Biometry

Equivalent Units

J2781 - Statistical Theory, 200034 - Statistical Theory

.....

This Level 2 unit completes an introduction to the basic principles and concepts of statistics. There are two strands to the subject: distribution theory and statistical inference. The aim of the unit is to present a solid foundation in statistical theory and to provide an understanding of the relevance and importance of the theory in solving practical problems in the real world. The theoretical basis of the dual arms of classical statistical inference (estimation and hypothesis testing) is discussed relating the probabilistic half of the course to the final objective - inference.

100663.1 Foundations of Wellbeing

Credit Points 10 **Level** 1

Equivalent Units

400962 - Foundations of Wellbeing

.....

Whereas health is commonly understood in terms of objective signs and symptoms (or their absence), wellbeing emphasizes subjective experience in the context of social and environmental factors that may support or impede a personal sense of wellbeing. This unit approaches wellbeing through a self-investigatory and reflective model that seeks to integrate systemic analysis of the individual, social, emotional, environmental and spiritual aspects of health and wellbeing in a personally meaningful way. Consideration of how issues of social justice and equity have differential impacts on both individuals and communities, and develop frameworks for taking personal and social action to enhance wellbeing.

400734.1 Functional Analysis

Credit Points 10 **Level** 2

Special Requirements

This is a specialist professional unit for occupational therapy practice so is not suited to students from other programs. Enrolment is restricted to students enrolled in 4520 -Bachelor of Applied Science (Occupational Therapy) and 4521 - Bachelor of Applied Science (Honours) Occupational Therapy.

.....

The ability to analyse human movement and occupations is essential for occupational therapy practice. In this unit, students will be introduced to the principles of biomechanics and kinesiology necessary for the understanding and analysis of human movement, functional activities and occupations. Students will demonstrate the ability to set goals, describe appropriate interventions and outcome measures to use with clients.

200191.3 Fundamentals of Mathematics

Credit Points 10 **Level** 1

Incompatible Units

200195 - Mathematical Methods A; 200196 - Mathematical Methods B; 14505 Engineering Mathematics 1; 200031 - Mathematics for Business; 200237 - Mathematics for Engineers 1; 200189 - Concepts of Mathematics; 300672 - Mathematics 1A; Mathematics 1B

Special Requirements

Permission required for students enrolled in course code 3562 Bachelor of Science (Advanced).

.....

This unit is designed to assist in the transition from secondary school mathematics to university first year level mathematics, and gradually bring students to the required standard. It provides a sound foundation in basic mathematical tools in the areas of algebra, trigonometry, probability and calculus, which are particularly relevant to first year mathematics and statistics core subjects. The algebra section revises basic arithmetic manipulation before introducing functions, polynomial, logarithmic and exponential functions, solving equations, matrix manipulation and applications. The probability section covers basic concepts of probability, including permutations, combinations and probability calculations. The trigonometry section introduces the concept of angles, trigonometric functions and their fundamental identities. The calculus section includes limits, differentiation, maximum and minimum values, graphing and integration. These mathematical methods and simple concepts are illustrated using practical examples derived from many different subject areas. Students entering without assumed knowledge of HSC Mathematics are advised to take this unit as an elective.

300463.1 Fundamentals of Mechanics

Credit Points 10 **Level** 1

Equivalent Units

300063 - Statics and Materials

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This unit deals with the action and interaction of forces, moments and couples in two and three dimensions, on machine elements and simple structures. It examines the equilibrium of single bodies, of multi-body structures and of mechanisms. It then covers the dynamics of a particle. A systematic approach to solving practical engineering design problems is provided. The unit makes extensive use of vector algebra.

700023.1 Fundamentals of Mechanics (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300463 - Fundamentals of Mechanics.

Special Requirements

Students must be enrolled at UWS College.

.....

This unit deals with the action and interaction of forces, moments and couples in two and three dimensions, on machine elements and simple structures. It examines the equilibrium of single bodies, of multi-body structures and of mechanisms. It then covers the dynamics of a particle. A systematic approach to solving practical engineering design problems is provided. The unit makes extensive use of vector algebra.

300491.1 Games Technology

Credit Points 10 **Level** 2

Assumed Knowledge

A basic understanding of the principles of programming equivalent to Programming Principles 1.

Incompatible Units

300162 Client Server Applications

.....

This unit provides an introduction to the game industry as well as introducing students to the techniques of game design and construction. Students will be exposed to the history of game development and the key aspects of different genres of computer games.

300492.1 Games Theory and Design

Credit Points 10 **Level** 3

Assumed Knowledge

Understanding of programming concepts and details of programming in C++, knowledge of systems analysis methods including object orientated analysis and design.

Prerequisite

300491.1 Games Technology

.....

This unit provides students with an in-depth understanding of the development and structure of games engines. It provides students with a unifying overview of the many modules that are incorporated in a games engines well as a detailed examination of game-play and engine programming.

101318.1 Gender and Society

Credit Points 10 **Level** 3

Equivalent Units

B3975 - Gender and Society, 25028 - Gender Relations

.....

Using contemporary and historical sociologies we will explore notions of gender, the body, sex and the self in a variety of social and cultural spheres and at different stages of life. The unit moves beyond patriarchy to explore intersections of, for example, class, race/ethnicity and gender - locally and globally. This unit's main focus is on the question: What is the nature of gender relations today and what changes are desirable and possible?

300227.1 General Biochemistry

Credit Points 10 **Level** 2

Assumed Knowledge

Chemical bonding, including covalent, hydrogen and ionic bonds and hydrophobic interactions; properties of water, acids, bases and buffers; structure of common functional groups; stereoisomerism; principles of chemical reactions.

Prerequisite

300224.1 Chemistry 1 OR **300225.1** Chemistry 2

Equivalent Units

BC201A - Biochemistry 2.1

Incompatible Units

300219 - Biochemistry 1, 300220 - Biochemistry 2, 300548 - Human Metabolism and Disease, 300555 - Proteins and Genes

.....

This unit builds on previous knowledge gained in Level 1 Chemistry and Biological Sciences. The overall aim of this unit is to demonstrate how understanding of the molecular basis of living cells is relevant to an understanding of a range of applied sciences, including medicine, food science, pharmaceutics, nutrition, genetic engineering, health, hybridoma technology, horticulture enzyme technology, toxicology and the biological sciences in general. The major themes of the unit include the structure, nature, properties and function of important classes of biological molecules such as proteins, nucleic acids, sugars and fats in living systems: plants, animals and bacteria.

300331.2 General Microbiology

Credit Points 10 **Level** 2

Assumed Knowledge

A knowledge of introductory biology, especially an understanding of the diversity of living organisms and basic concepts of cell structure and function is essential for students undertaking this unit. The unit assumes that students are familiar with basic biological laboratory techniques such as use of the light microscope. This is taught in Biology 1.

Incompatible Units

300300 - Microbiology 1, MI104A - Microbiolgy 1.1

Special Requirements

Only students in courses 3569 - Bachelor of Applied Science (Environmental Health) and 405A - Bachelor of Applied Science (Environmental Health) may use BI107A - Biological Sciences 1.1 (X) as a co-requisite. Pre-requisites: 300221 - Biology 1 OR 300222 - Biology 2 OR BI107A - Biological Science 1.1 (X) OR 300543 - Cell Biology OR 300539 - Biodiversity

.....

This is a unit in general microbiology designed for students in Applied Science and Natural Science degrees. It builds on students' existing knowledge of cell biology and biodiversity, and provides an overview of the nature of micro-organisms and their significance. The unit emphasises the role of micro-organisms in environments such as water, soil, animals and plants, as well as in foods, industry and waste treatment. The unit focuses on the applications of microbiological concepts in these applied areas.

300623.1 Genetics

Credit Points 10 **Level** 2

Assumed Knowledge

Sound knowledge of undergraduate Level 1 biology.

Equivalent Units

BI201A - Genetics 2.2

.....

The scientific study of heredity is called genetics. This unit is designed to introduce the student to a wide range of genetic concepts. To begin, the principles of heredity will be introduced. The student will investigate the nature and organisation of heredity; the various levels and mechanisms of expression of inheritance, the basis of variation within populations; and the genetic basis of biological evolution. Modern genetics underlies such diverse fields of study as biotechnology, agriculture, plant and animal breeding, biodiversity and ecosystem management, and accordingly the unit will include a series of case studies that demonstrate the importance and diversity of genetics as a discipline.

BI201A.1 Genetics 2.2

Credit Points 10 **Level** 2

.....

This unit has been replaced by 300623 Genetics. The scientific study of heredity is called genetics and this unit is designed to introduce the student to a wide range of genetic concepts. To begin, the principles of heredity will be introduced. The student will investigate the nature and organisation of heredity; the various levels and mechanisms of expression of inheritance, the basis of variation within populations and the genetic basis of biological evolution. Modern genetics underlies such diverse fields of study as biotechnology, agriculture, plant and animal breeding, biodiversity and ecosystem management and accordingly, the unit will include a series of case studies that demonstrate the importance and diversity of genetics as a discipline.

300612.1 Geochemical Systems

Credit Points 10 **Level** 2

Prerequisite

300224.1 Chemistry 1 AND **300225.1** Chemistry 2

Equivalent Units

14510 - Geochemical Systems

.....

This unit covers selected topics taken from the following list: limits of chemical conditions in the natural environment (redox, pH, concentrations); mobilisation and transport of selected elements in primary and secondary environments – aqueous and supercritical fluids, gases; complexing and ion-pairing phenomena; metal ions buffers in geochemical

cycles – adsorption, co-precipitation, mineral formation; dispersion of elements in the weathering environment.

BG105A.1 Graphic Communication and Design (V1)

Credit Points 10 **Level** 1

Equivalent Units

300729 - Graphic Communication & Design.

.....

This unit is designed to provide students with the knowledge and skills necessary to develop graphic communication, basic CAD skills and elementary design skills suitable for application within the building industry. Content: This unit provides students with an introduction to elements of graphic communication skills necessary to comprehend various building types in plan, section, elevation, isometric and perspective views. The unit also introduces students to basic CAD (Computer Aided Design and Drafting) concepts and skills. Students will also be required to develop appropriate analytical and problem solving skills in dealing with a real life design problem.

300467.1 Green Chemistry 1

Credit Points 10 **Level** 2

Assumed Knowledge

This unit requires the basic grounding in the inorganic, physical and organic components of the first year Chemistry unit.

Prerequisite

300224.1 Chemistry 1 OR **300469.1** Introductory Chemistry AND **85024.1** Introduction to Environmental Chemistry OR **300225.1** Chemistry 2

.....

Green Chemistry is a new field that seeks to reduce the environmental consequences of chemical industry. It includes modifying engineering practices, the development of new catalytic processes, modification of existing chemical processes and bioremediation. The emphasis is on atom economy and the reduction of chemical resource and energy consumption at the source rather than subsequent pollution remediation. The practice of green chemistry as applied to aspects of analytical, biological, inorganic, organic and polymer chemistry in real-world cases will be investigated.

300468.1 Green Chemistry 2

Credit Points 10 **Level** 2

Assumed Knowledge

Completion of Year Onechemistry and Analytical Chemistry 2. Some knowledge of environmental issues is desirable.

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This unit covers measurement of water quality, water pollution, classification of water pollutants, water and waste water treatments, alkalinity and carbonate equilibria, complexation in natural waters, atmospheric chemistry and monitoring, environmental sampling, sample preservation and storage, soil and sediment chemistry, solid waste chemistry and approaches for prevention of pollution. This unit complements Green Chemistry 1, but does not follow directly on from it.

101351.1 Health and Personality

Credit Points 10 **Level** 2

Assumed Knowledge

80 credit points of completed study in Social Sciences, Health, Humanities or Psychology.

Equivalent Units

25050 - Health and Personality

.....

Personality theory is integrally linked to notions of health and illness. Not only can personality theory be applied in health settings, but also many of our ideas about personality are actually derived from working with people with various forms of illness. Through an exploration of some psychological approaches to the mind-body connection, the subject provides an overview of personality theories, with a specific focus on some contemporary issues.

400272.1 Health Care Systems

Credit Points 10 **Level** 2

Equivalent Units

400965 - Health Care Systems

.....

This unit is being replaced by unit code 400965 in 2010. The tools of economic appraisal and decision making permeate all aspect of modern life. Reliance on economic analysis is highly evident in contemporary health care systems. The funding and provision of health care/services is continuingly changing and subject to ever increasing demand for limited and finite resources. The unit explores, examines and reviews the impact these limitations have on selected health care systems. Students are encouraged to research and examine their own and other health care systems and investigate the differences in access, equity, and efficiency. Practical, contemporary and applied case studies/examples are continuously utilised and students are encouraged to channel the knowledge gained into key areas of interest at the macro and micro level.

400275.1 Health Planning Project

Credit Points 10 **Level** 3

Prerequisite

400273.1 Health Politics, Policy and Planning

.....

This unit applies the theoretical concepts introduced in the unit, Health Politics, Policy and Planning namely the conduct of a health review, needs analysis, priority determination, and strategic planning. The emphasis is on group experiential learning, developing analytical skills required for comprehensive assessment, planning, implementation and evaluation of health plans. The topics are selected from current health priority issues and represent a realistic exercise. Students, functioning as a working party, develop knowledge and skills in negotiation, group work, committee structure and functioning,

consultation and research processes, planning process and report writing.

400273.1 Health Politics, Policy and Planning

Credit Points 10 **Level** 2

Equivalent Units

400966 - Health Politics, Policy and Planning

Special Requirements

CRC and NSW Health Immunisations

.....

The Australian health care system is highly complex, consisting of inter-related sub-systems and is influenced by the broader socio-political environment. It is essential that health professionals understand and consider the economic, political and social context within which health policy and planning occur, so that strategies and policies are developed which are economically and politically viable, as well as socially acceptable and responsive to the actual needs of the community. This unit aims to develop an understanding of the policy making and planning processes within this broad context and to introduce the theory and skills related to such activities.

400738.1 Health Practice 1

Credit Points 20 **Level** 1

Corequisite

400737.1 Scientific Basis of Medicine 1

Special Requirements

Students must be enrolled in the course 4641 Bachelor of Medicine, Bachelor of Surgery. Students must have completed a Prohibited Employment Declaration; undergone a Criminal Record Check; have completed a WorkCover accredited Senior First Aid Certificate; and have an up to date Adult Vaccination Record. Students must also sign a declaration that they understand and comply with Infectious Diseases Policy, Health Records and Information Privacy Act (HRIPA) 2002; and UWS' submitting their details to the NSW Medical Board.

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The corequisite for this unit is 400737 Scientific Basis of Medicine 1. Both units must be completed successfully in the same year, in order for you to progress to the next year of the course. If one unit is failed or if both are failed, you must repeat both together in your next year of enrolment. The practice of medicine occurs within a psychological, social and cultural context. Health Practice 1 explores the complexity of medical practice and covers areas from doctor/patient interaction to an examination of the health care system. A particular focus will be the communities that make up Greater Western Sydney. Topics covered include: Communication skills; Patient history and examination; Ethics; Psychosocial aspects of medicine; Impacts of gender, culture and deprivation on health and medical care; Professionalism; and Population health.

400740.1 Health Practice 2

Credit Points 20 **Level** 2

Prerequisite

400738.1 Health Practice 1 AND **400737.1** Scientific Basis of Medicine 1

Corequisite

400739.1 Scientific Basis of Medicine 2

Special Requirements

Students must have completed a Prohibited Employment Declaration, undergone a Criminal Record Check, have completed a WorkCover accredited Senior First Aid Certificate and have an up to date Adult Vaccination Record. Students must also sign a declaration that they understand and comply with: - Infectious Diseases Policy - Health Records and Information Privacy Act (HRIPA), 2002 - UWS' submitting their details to the NSW Medical Board.

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The corequisite for this unit is 400739 - Scientific Basis of Medicine 2. Both units must be completed successfully in the same year, in order for you to progress to the next year of the course. If one unit is failed or if both are failed, you must repeat both together in your next year of enrolment. The practice of medicine occurs within a psychological, social and cultural context. Health Practice 2 explores the complexity of medical practice and covers areas from doctor/patient interaction to an examination of the health care system. A particular focus will be the communities that make up Greater Western Sydney. Topics covered include: - Communication skills - Patient history and examination - Ethics - Psychosocial aspects of medicine - Impacts of gender, culture and deprivation on health and medical care.

400784.1 Health Promotion Practice 1

Credit Points 10 **Level** 3

Prerequisite

400271.1 Introduction to Health Promotion

Equivalent Units

400274 - Advanced Health Promotion Practice

Special Requirements

CRC and NSW Health Immunisations

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This unit builds on the knowledge gained in Essentials of Health Promotion. It provides the opportunity to apply health promotion theory to practical projects in the field related to current population health priorities, through 140 hours placement experience. It examines a range of political, social and economic issues and the way in which they impact on current health promotion practice. Working intersectorally, building capacity and applying best practice guidelines in the implementation of quality health promotion interventions is examined.

400785.1 Health Promotion Practice 2

Credit Points 10 **Level** 3

Prerequisite

400271.1 Introduction to Health Promotion AND **400274.1** Advanced Health Promotion Practice

Equivalent Units

400274 - Advanced Health Promotion

Special Requirements

Ceiminal Records Check and NSW Health Immunisations

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This unit builds on the knowledge gained in Health Promotion Practice through web based teaching and 140 hours placement in the field. It provides the opportunity to develop higher order health promotion skills with practical projects in the field related to current population health priorities. It also examines community development strategies, capacity building approaches, social marketing and media through involvement in an extended placement. Furthermore, students gain project management skills.

400279.2 Health Services Financial Management

Credit Points 10 **Level** 3

Prerequisite

400277.2 Health Services Management

Special Requirements

Restricted to 4545 students only, Criminal Record Check and NSW Health Immunisations

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The Australian health care system must account for use of resources, and ensure their equitable and efficient use. Increasingly devolution of management function to cost centre level in health care organisations is occurring. Managers must consider the financial implications of clinical decisions, understand and act on accounting information. They are held responsible for the financial outcomes of their activities. This unit develops a basic knowledge of accounting principles, health services funding arrangements, government reforms, financial reporting, preparation of budgets, business cases and economic appraisals. There are 140 hours of placement in the field working with health managers on financial issues.

400283.1 Health Services Information Management

Credit Points 10 **Level** 3

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This unit is designed to introduce future health services managers to the process of planning, scheduling, implementing and evaluating an information management system in a health care facility. The unit explores the range and sources of information required for the effective management of health care facilities. Data, methods and desired outcomes for information management are discussed. Issues related to records management, medical-legal requirements and the use of information technology are examined.

400277.2 Health Services Management

Credit Points 10 **Level** 2

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The health workplace is a complex and sophisticated environment that can be understood in many different ways and mean different things to different members of an organisation. Assumptions about organisational structure and action are based on one's conceptualisations and beliefs about the nature and goals of an organisation. This unit aims to develop an understanding of organisational theory and its application to management practice and organizational analysis in the health arena.

400787.1 Health Services Management Practice

Credit Points 10 **Level** 3

Prerequisite

400277.2 Health Services Management

Equivalent Units

400278 - Health Services Management 2

Special Requirements

Criminal Records Check and NSW Health Immunisations. Restricted to 4545 - Bachelor of Health Science students only.

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The unit begins with an overview of the complexity and variability of health services and provides an understanding of component organisations, federal and state policy issues and environmental factors including the role of the private sector and non-government organisations. The changing role of the health services manager and competencies required for effective managing are examined. Influences on organisations are reviewed, including structures, culture, power and politics. Various management functions are explored through 140 hours of placement e.g. strategic planning, performance management, people management including workplace relations, conflict resolution, resource management (financial and asset), risk management, OH&S and quality assurance.

400284.1 Health Services Quality Management

Credit Points 10 **Level** 3

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The need to improve quality while reducing expenditure has forced health services to re-evaluate their strategies. For these reasons many have embraced the philosophies of Total Quality Management (TQM). Central to its practice is a focus on flexible, consultative management, with the needs of the customer seen as vital to guiding a continuous process of improvement. TQM is a whole system concept, which recognizes the need to manage sets of interacting technical, cultural and political issues. This unit explores the various aspects of TQM and in particular its application within the health services.

400788.1 Health Services Workforce Management

Credit Points 10 **Level** 3

Prerequisite

400277.1 Health Services Management 1

Special Requirements

Criminal Records Check and NSW Health Immunisations

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This is a flexible learning unit looking at HRM as a strategic activity of health organisations especially as workforce shortages pose significant challenges to the health and aged care sectors. The workforce, with appropriate knowledge and expertise, is essential to the efficient and effective delivery of quality health services. Successful organisations shape their workforce to anticipate current and future business directions and goals. Workforce planning is a crucial element of this approach and its success.

300704.1 Healthy Built Environments

Credit Points 10 **Level** 2

Equivalent Units

300448 - Housing for Public Health

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This unit aims to introduce students to the influence of the built environment on human health outcomes. Key topic areas of investigation will include healthy housing design and construction; physical activity, obesity and the built environment; the built environment and access to fresh food; housing affordability; and crime prevention through urban design. Sustainable design and planning principles are examined and in particular the contribution that environmental planning makes towards the promotion of human health and well being.

400361.1 Herbal Pharmacognosy

Credit Points 10 **Level** 4

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This unit introduces the basic principles of pharmacognosy: botany, phytochemistry, plant identification, and pharmacology. Some of the major known constituents of common Chinese and European herbal medicinal substances, the pharmacological basis of their therapeutic use, mechanisms of action, pharmacokinetics (absorption, metabolism, and elimination), toxicity and adverse effects are explored.

300675.1 Honours Thesis

Credit Points 40 **Level** 5

Prerequisite

300053.2 Professional Practice

Corequisite

81999.1 Industrial Experience (Engineering)

Equivalent Units

300484 Engineering Thesis; 300036 Major Investigation and Report 1; 300037 Major Investigation and Report 2

Incompatible Units

300483 Engineering Project; 300668 Advanced Engineering Thesis

Special Requirements

This unit will be only offered to Bachelor of Engineering and Bachelor of Construction Management Honours level students. 3621 - Bachelor of Engineering students must be enrolled in a Key Program. Students should have achieved at least 240 CPs AND must have a course GPA equal to or greater than 5.0.

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This unit provides honours level students with the opportunity to undertake research on a specialist topic within their Key Program of undergraduate study.

400558.2 Honours Thesis in Health Science (F/T)

Credit Points 60 **Level** 5

Corequisite

400548.2 Honours Pathway

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This unit is the culmination of studies for students who have completed an undergraduate degree in Health Science and provides substantial training in research. Under staff supervision, students choose the particular topic for their research, design their own programme of research, perform the research and analyse the results. The culmination of this process is the production of a thesis in which students describe the rationale for their topic, their research programme, ethical issues, results, and their conclusions.

400559.2 Honours Thesis in Health Science (P/T Year 1)

Credit Points 20 **Level** 5

Corequisite

400548.2 Honours Pathway

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This unit is the culmination of studies for students who have completed an undergraduate degree in Health Science and provides substantial training in research. Under staff supervision, students choose the particular topic for their research, design their own programme of research, perform the research and analyse the results. The culmination of this process is the production of a thesis in which students describe the rationale for their topic, their research programme, ethical issues, results, and their conclusions.

400560.2 Honours Thesis in Health Science (P/T Year 2)

Credit Points 40 **Level** 5

Corequisite

400548.2 Honours Pathway

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This unit is the culmination of studies for students who have completed an undergraduate degree in Health Science and provides substantial training in research. Under staff supervision, students choose the particular topic for their research, design their own programme of research, perform the research and analyse the results. The culmination of this process is the production of a thesis in which students describe the rationale for their topic, their research programme, ethical issues, results, and their conclusions.

300426.1 Human Animal Interactions

Credit Points 10 **Level** 1

Special Requirements

Students must be enrolled in 3592 - Bachelor of Animal Science, 3637 - Bachelor of Natural Science or 3640 - Bachelor of Science.

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This unit introduces students to the relationships between humans and animals. It deals with domestication, the role of animals for companionship and as workers, the traditional role of animals in agriculture and their increasingly recognised aesthetic and therapeutic role. Project work is developed by negotiation with lecturers to assist student learning. Students are expected to undertake a reading program from prescribed texts to supplement the lecture series.

300547.1 Human Genetics

Credit Points 10 **Level** 2

Assumed Knowledge

Structure of basic biomolecules, cell structure, knowledge of chromosomes and role in mitosis and meiosis. Structure of DNA and processes of replication, transcription and translation, Mendelian genetics.

Prerequisite

300543.1 Cell Biology OR **300221.1** Biology 1

Incompatible Units

BI210A - Genetics 2.2

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This unit will provide a sound knowledge of the genetic basis of disease and genetic problems of human development. Students will learn basic genetic principles as they study examples of genetic problems in human health and disease. Topics include Mendelian and multifactorial genetics, autosomal and X-chromosomal abnormalities, population genetics, oncocytogenetics, and the use of DNA technologies in gene mapping, disease diagnosis, screening and therapy. The focus will be on cytogenetics since molecular genetics will be covered in other units.

400130.1 Human Medical Sciences 1

Credit Points 10 **Level** 1

Equivalent Units

E1231 - Human Biology , 400868 - Human Anatomy and Physiology 1

Incompatible Units

E1241 - Human Medical Sciences I

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The unit studies the basic concepts of biochemistry and histology, general anatomy, and physiology of the major body systems. This unit is designed to provide students especially applied health science students with an overview of body systems and their functions to ensure a suitable basis for their future studies of regional anatomy, clinical neurosciences, microbiology, pharmacology, pathology and other clinical sciences.

400256.1 Human Medical Sciences 2

Credit Points 10 **Level** 1

Corequisite

400130.1 Human Medical Sciences 1

Equivalent Units

400869 - Human Anatomy and Physiology 2

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This unit will explore in greater depth those topics fundamental to the practice of health sciences. This unit is intended to equip students studying health sciences with a detailed knowledge of the regional anatomy of the entire body. Knowledge of embryology will complement studies in anatomy and physiology and help students to understand the correlation of structure in relation to function.

400134.1 Human Medical Sciences 3

Credit Points 10 **Level** 1

Prerequisite

400130.1 Human Medical Sciences 1

Equivalent Units

E1237 - Human Biology 2, 400881 - Functional Anatomy

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This unit is intended to provide students with an in depth and clinical study of those human medical sciences which underpin specific intervention principles and procedures to be taught in the professional units. Primary contact health care providers have professional requirements that cover a broad spectrum of diagnostic, medical and physical practices. In order to ensure a suitable basis for later practice of osteopathy, podiatry, and occupational therapy, students require a detailed knowledge and understanding of anatomy and physiology with emphasis on musculoskeletal system, innervation and blood supply of relevant body structures.

300548.1 Human Metabolism and Disease

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge of protein structure and function, gene expression, principles of enzyme catalysis, including the structure of enzymatic active sites and catalytic mechanisms, knowledge of eukaryotic intracellular compartments and their broad function.

Prerequisite

300555.1 Proteins and Genes OR **300219.1** Biochemistry 1

Equivalent Units

14427 - Biochemistry 2, 14440 - Biochemistry 2, 300220 - Biochemistry 2, J2821 - Biochemistry of Metabolism

Incompatible Units

300227 - General Biochemistry, BC202A - Biochemistry 2.2

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Students studying at Hawkesbury or Parramatta campus should refer to 300220 - Biochemistry 2. Understanding human metabolism at a molecular level underpins our understanding of human health and metabolic diseases, such as diabetes and obesity. Kinetics and regulation of enzymes will be studied as a preliminary to learning how metabolic pathways work. The central pathways of energy metabolism, their control and inter-relationships will be analysed in detail, including carbohydrate and fat metabolism; ATP synthesis involving electron transport and ATP synthase; and nitrogen metabolism, including aspects of amino acid degradation and urea synthesis. Emphasis will be placed on enzyme and hormonal regulations, the roles of different tissues in metabolic homeostasis; and the consequences for human health when enzymes or their regulations are defective.

300549.1 Human Molecular Biology

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge of DNA, gene and chromosome structure in eukaryotes; the basic events in eukaryotic transcription, including the structure and role of eukaryotic RNA polymerase; post-transcriptional events in eukaryotes and their purpose; the basic events in eukaryotic translation; protein structure and conformation, and the importance of post-translational modifications for protein function.

Prerequisite

300555.1 Proteins and Genes OR **300219.1** Biochemistry 1

Equivalent Units

14439 - Cell and Molecular Biology, 300234 - Molecular Biology, BI305A Molecular Biology, J3678 - Molecular Genetics

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Students studying at Hawkesbury or Parramatta campus should refer to 300234 - Molecular Biology. This unit concentrates on the Molecular Biology of eukaryotic cells (human) and studies gene regulation at an advanced level, leading into the processes and practical applications of DNA technology. Students gain a thorough grounding in major techniques involved in gene cloning, such as DNA manipulation using restriction enzymes, PCR, DNA fingerprinting. Cloning vectors, DNA libraries, genetic engineering in different types of eukaryotic cells and organisms and are studied. Students are introduced to functional genomics, bioinformatics and issues in biosafety and ethics relating to gene technology.

300228.1 Human Nutrition

Credit Points 10 **Level** 2

Assumed Knowledge

Biology 1 & 2 or equivalents, General Biochemistry or equivalent.

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This unit covers basic principles of human nutrition, including the function of nutrients in prevention and treatment of disease. The unit also covers anti-nutritional factors in foods, functional foods, non-nutrient compounds and their interaction with nutrients, effects of processing on nutrients, nutrient fortification, nutrient labelling of food, and methods for dietary assessment of individuals.

300620.1 Human Physiology 1

Credit Points 10 **Level** 2

Assumed Knowledge

This unit relies upon knowledge gained from previous units studied, particularly First-Year Biology and Chemistry.

Equivalent Units

BC206A - Human Physiology 2.2; 300320 - Introduction to Human Physiology

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This unit aims to provide the student with an understanding of the physiological mechanisms which operate to maintain homeostasis. The structure and normal functioning of some of the major body systems are examined, as well as certain disturbances to normal functioning caused by disease processes or environmental factors.

300622.1 Human Physiology 2

Credit Points 10 **Level** 3

Assumed Knowledge

Demonstrated sound understanding of undergraduate Level 1 biology and Level 2 physiological systems of the human body.

Equivalent Units

BC306A - Human Physiology 3.1, 300326 - Topics in Physiology

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This unit emphasises detailed functional aspects of the nervous system, particularly sensory (vision, hearing, taste, smell) and skeletal systems and their physiological responses via neural pathways to external stimuli. Underpinning these broader concepts is a detailed examination of electrophysiology i.e. ion channel structure and function, membrane potential, neurotransmitters and neurotransmission.

BC306A.1 Human Physiology 3.1

Credit Points 10 **Level** 3

Equivalent Units

300326 - Topics in Physiology, 300622 - Human Physiology 2

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This unit complements the Level 2 unit, Human Physiology 2.2, and provides the student with a deeper and broader understanding of the physiological systems. The nervous system, including the senses of taste and smell, and muscle physiology are studied in depth.

300570.2 Human-Computer Interaction

Credit Points 10 **Level** 3

Equivalent Units

300160 - Software Interface Design

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A key component to the discipline of Information Systems is the understanding and the advocacy of the user in the development of IT applications and systems. IT graduates must develop a mind-set that recognizes the importance of users and organizational contexts. They must employ user-centered methodologies in the development, evaluation, and deployment of IT applications and systems. This unit examines human-computer interaction in order to develop and evaluate software, websites and information systems that not only look professional but are usable, functional and accessible.

300136.3 I.T. Support Practicum

Credit Points 10 **Level** 3

Prerequisite

300150.1 PC Workshop AND **300138.1** LAN Workshop OR **300576.1** Networking Workshop

Special Requirements

Students can only enrol in this unit in their final session of study. The unit is restricted to students undertaking the Bachelor of Technology (IT Support), the Bachelor of Computing, the Bachelor of Computer Science, the Bachelor of Information Technology, the Bachelor of Mathematics and Information Technology or the Bachelor of Information and Communications Technology.

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This unit provides students real-world experience in the area of Information Technology (IT) support. Students are located with industry partners in the Greater Western Sydney region in IT support positions for 10 hours per week over a 12 week period. In addition, students receive instruction and tuition in aspects of professional practice such as code of ethics.

300229.1 Immunology

Credit Points 10 **Level** 3

Assumed Knowledge

Microbiology 1, Biochemistry 1

Incompatible Units

300223 - Cell Signalling and Molecular Immunology, 300552 - Molecular Biology of the Immune System

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This unit aims to provide students with an understanding of the concepts of: self and non-self as it applies to the functioning of the immune system; the divisions of innate and specific immunity and their role(s) in determining the outcome of an immune assault; and the immune system in health and disease.

300631.1 Indigenous Landscape

Credit Points 10 **Level** 1

Assumed Knowledge

Basic geographical concepts.

Special Requirements

NPWS Protected Heritage Laws; Custodian-restricted access on to traditional Aboriginal lands.

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This unit aims to integrate traditional Aboriginal ways of knowing landscape into the undergraduate key program in Nature Conservation. Specifically, the unit incorporates UWS generic Indigenous core curriculum content that acknowledges and values pre-colonial Australian history and landuse practice. Content includes traditional land management, protected area management, co-management, introduction to Native Tiitle, Indigenous vs statute law, sustainable landuse, cultural heritage and heritage landscapes. The unit aims to equip students to address issues of dispossession and disadvantage brought about by the destruction and disruption of ecological integrity.

85032.2 Industrial Design Project (Commencement)

Credit Points 30 **Level** 5

Assumed Knowledge

Knowledge related to the successful completion of year 3 Industrial Design or equivalent (eg Design & Technology) is assumed. Ability to use: e-mail, internet web browser, WebCT or equivalent, word processing program, CAD software and workshop machinery (eg mill, lathe, sander, rapid prototyping machine). Knowledge and/or experience in: referencing, lab/workshops O&HS, report writing, essay writing, process diary, group work, research methods for Industrial Designers, project management and ethical research approval process.

Prerequisite

300313.2 Design Studio 4: Simulate to Innovate AND **300314.1** Designed Inquiry

Corequisite

10915.1 Industrial Experience

Special Requirements

Successful completion of 240 credit points including the core units in course code 350 - Bachelor of Design and Technology.

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The Industrial Design Honours Program provides students with an opportunity to apply their industrial design skills to an in-depth year long design research project. In Industrial Design Major Project (Commencement), Honours candidates develop a research plan and methodology that yield design opportunities for conceptual development and resolution (to be carried out in Industrial Design Major

Project Completion). In Commencement, candidates produce a comprehensive research design (and seek ethics approval as needed), literature review, preliminary concept explorations and a detailed industrial design brief.

85033.2 Industrial Design Project (Completion)

Credit Points 40 **Level** 5

Assumed Knowledge

Knowledge related to the successful completion of year 3 Industrial Design is assumed and successful completion of Industrial Design Project (Commencement) and its associated co-requisite units.

Prerequisite

85032.1 Industrial Design Project (Commencement)

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The Industrial Design Honours Program provides students with an opportunity to apply their industrial design skills to an in-depth year long design research project. In Industrial Design Major Project (Completion), Honours candidates respond to the research findings and design brief that they produced in Autumn semester. They undertake detailed design development to resolve and communicate a final design solution, which is publicly exhibited at the end of the year. Their design and research communications present a strong argument for the final design and demonstrate the honours' candidates capacity to undertake postgraduate design research and to join professional design practice.

10915.2 Industrial Experience

Credit Points 0 **Level** 3

Assumed Knowledge

Successful completion of 160 credit points in either course 3502 - Bachelor of Design and Technology or 3503 - Bachelor of Industrial Design or 3504 - Bachelor of Industrial Design Engineering.

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Students will gain real-life experience in developing new products within a company or organisation and be exposed to some of the decision-making processes that affect the development process of industrially produced products whilst experiencing the multidisciplinary nature of the interaction of all those involved in the product development process from the conception of the idea to the introduction of a new product to the market place. Students use this opportunity to test the validity of the concepts studied in various course units to date in a real life situation and develop a sense of a company's "culture".

81999.1 Industrial Experience (Engineering)

Credit Points 0 **Level** 3

Equivalent Units

300741 - Industrial Experience (Engineering).

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This is a "Work Experience in Industry" unit, for which no student contribution or fee is charged. Enrolment in the unit will not consume Student Learning Entitlement (SLE). As a formal requirement of the Institution of Engineers (Australia) and the engineering course, each student must complete 12 weeks of industrial experience in an approved engineering work environment prior to graduation.

300302.1 Industrial Graphics 1: Presentation

Credit Points 10 **Level** 1

Equivalent Units

J3764 - Industrial Graphics (Presentation)

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The presentation and promotion of designs in the form of 2D graphics is a necessary component of the overall design process. The ability to apply a wide range of both manual and computer based processes in the production of these graphical images and presentations is essential. The objective of this subject is to introduce students to the industry standard software and hardware employed to generate this type of material, and more importantly this unit exposes students to the techniques used by professionals who currently work in this area of the design community. Industrial Graphics 1 Presentation is part of a sequence of five units that constitute the sub-major in Industrial Graphics and eight units that constitute the major in Interactive Industrial Graphics.

300282.1 Industrial Graphics 2: Transition

Credit Points 10 **Level** 2

Equivalent Units

J1756 - Industrial Graphics (2D Drawing), J1759 - Industrial Graphics (Transition), 10940 - Technical Presentation 2

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Engineering drawing is the formal graphical communication language used by professionals engaged in design, manufacture and management of manufactured items. This language provides the facility to describe and document three dimensional objects or concepts in two dimensions using linework, characters and symbols. This language is based on guidelines provided by Standards Australia and is compatible with a range of international drawing standards. The aim of this unit is to examine in detail the language and tools used to generate engineering drawings and to provide students with practical skills that will allow them to communicate with other professionals using this language.

300310.2 Industrial Graphics 3: 3D Solids

Credit Points 10 **Level** 2

Assumed Knowledge

300282 Industrial Graphics 2 - Transition. Students from within the ID and Design & Technology degree courses should have completed this core unit before attempting Industrial Graphics 3. Students taking this as an elective fromoutside of the ID and Design & Technology courses should note that knowledge from this unit will be assumed.

Equivalent Units

10962 - Industrial Design Communication 2: 3D Kinetic, J2814 - Industrial Graphics (3D Modelling)

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The documentation of design concepts in the form of three dimensional (3D) computer models provides data that can

be applied in a wide variety of ways to facilitate the understanding and production of parts and assemblies. The objective of this unit is to introduce students to the industry standard software and hardware employed to generate these models, via a "hands on" approach to creating 3D data. In addition to this, students will be provided with the background history related to computer modelling in general and Feature Based Solids Modelling in particular. Issues such as data transfer, rapid prototyping, computer numerical control (CNC) machining and visualisation will also be discussed.

300312.2 Industrial Graphics 4: Surface

Credit Points 10 **Level** 3

Assumed Knowledge

It is assumed that students attempting IG4: Surface will be familiar with and capable at 3D solids modelling as delivered in 300310 (IG3: 3D Solids) and graphic design/ illustration and page layout as delivered in 300302 (IG1: Presentation). Students from within the ID and Design & Technology degree courses should have completed these core units before attempting IG4: Surface. Students taking this as an elective from outside of the ID and Design & Technology degree courses should note that these skills will be assumed.

Equivalent Units

10963 - Industrial Design Communication 3: Materials and Properties, J2868 - Industrial Graphics (Surface)

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Starting with a sketch, drawing, physical model, or only an idea, having the ability to accurately model your designs ready for rendering, animation, drafting, engineering, analysis and manufacturing is an essential skill set for designers in all disciplines. The ability to generate 3 dimensional data and in particular, free-form 3D data within a computer and display that data in a range of formats provides a powerful design, visualisation and analysis tool. This unit introduces students to the fundamentals of 3D Wireframe, NURBS Surface and Boundary Representation (Brep) Solids Modelling and then focuses on the tools and processes available for producing a range of image types from these 3D models.

300315.1 Industrial Graphics 5: Integrated

Credit Points 10 **Level** 3

Assumed Knowledge

Students require computer and hand rendering capabilities along with graphic computer presentation skills. Knowledge of consumer markets and manufacturing is also essential.

Prerequisite

300302.1 Industrial Graphics 1: Presentation AND **300310.1** Industrial Graphics 3: 3D Solids AND **300312.1** Industrial Graphics 4: Surface

Equivalent Units

J3824 - Industrial Graphics (Integration)

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The ability to draw on a broad range of industrial graphics skills and techniques and to apply them appropriately to design projects is a cornerstone of the modern design process. It is the aim of this unit to synthesise the components of the industrial graphics strand and provide a single project with a range of components to which these skills can be applied and evaluated. The lecture component of this unit will provide the forum for introducing and demonstrating the latest techniques and technologies in this field while the practical sessions will provide the students with the opportunity to apply their skills.

BG311A.1 Industry Based Learning (VI)

Credit Points 0 **Level** 5

Equivalent Units

300724 - Industry Based Learning.

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This is a "Work Experience in Industry" unit, for which no student contribution or fee is charged. Enrolment in the unit will not consume Student Learning Entitlement (SLE). Objectives: To expose the student to the working environment in which they can develop an appreciation of the industry and gain experience in working and communications with members of the building industry. Topics: Refer to the Industry Based Learning Diaries for full unit details.

300128.2 Information Security

Credit Points 10 **Level** 3

Assumed Knowledge

Basic understanding of data structures, number theory and probability theory. Basic programming skills in C or java, etc.

Prerequisite

200025.1 Discrete Mathematics OR **200031.1** Mathematics for Business OR **200190.1** Finite Mathematics AND **300103.1** Data Structures and Algorithms OR **300156.1** Programming Principles 2 OR **300125.1** Fundamentals of Computer Science

Special Requirements

Students need to undertake one pre-requisite unit from the following three units: 200025 - Discrete Mathematics, 200031 - Mathematics for Business, 200190 - Finite Mathematics AND one pre-requisite from the following three units: 300103 - Data Structures and Algorithms, 300156 - Programming Principles 2, 300125 - Fundamentals of Computer Science

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This unit is concerned with the protection and privacy of information in computer systems. The focus of the course is primarily on introducing basic concepts in computer and information security and then using this knowledge as the vehicle to study the design and implementation of secure computer and network systems. This unit also provides students with practical experience with security programming. In more specific terms, the unit is intended to provide the following: basic concepts of conventional and public key encryption; number theory and its application in public key encryption and signatures; protocols used in secure computer systems.

300572.1 Information Systems Deployment and Management

Credit Points 10 **Level** 3

Assumed Knowledge

- A general understanding of various Information Systems in the eBusiness environment - Familiarity with information system development processes

Prerequisite

300585.1 Systems Analysis and Design AND **300580.1** Programming Fundamentals

Equivalent Units

300272 - Enterprise Information Management

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This unit provides a detailed overview of system implementation stages taking into the consideration steps necessary to place the newly developed system into production, educate consumers and system users, confirm accuracy of data needed for the system's accurate functionality and assure that all business functions that interact with the system are performing properly. In addition, this unit aims to portray how project management skills are crucial in timely production and delivery of the final product. At the completion of the successful deployment system is usually transitioned to system support and maintenance therefore the overview of the transition process is also portrayed.

CP308A.1 Information Systems Ethics and Law

Credit Points 10 **Level** 3

Special Requirements

Students enrolled in course 2502 - Bachelor of Laws (Non graduate entry) must obtain permission to enrol in this unit.

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This unit aims to provide students with an appreciation of the ethical and legal issues surrounding the use of information systems, particularly the internet. It examines the regulatory framework to facilitate an understanding of the legal boundaries within which e-commerce may operate. Matters including the abuse of computers, the privacy of computerised data and electronic communications are critically analysed to reveal a variety of issues which are legally significant.

300573.1 Information Systems in Context

Credit Points 10 **Level** 1

Assumed Knowledge

2 Unit Mathematics and 2 Unit English (General)

Incompatible Units

200128 - Introduction to Information Systems

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This unit aims to give students the ability to recognise and expound about business information systems with regard to type, function, and purpose, and the frameworks within which these systems are used. Topics in this unit include computing fundamentals; computer hardware and software; computers and society; use of business application packages – spreadsheets, word processing, database, graphics; organisational information systems; information systems development and acquisition; data and knowledge management; electronic commerce, internets, extranets; networking; enterprise-wide information systems; the internet and information systems security; privacy, ethics and computer crime.

700000.1 Information Systems in Context (UWSC)

Credit Points 10 **Level** 1

Incompatible Units

200128 - Introduction to Information Systems.

Special Requirements

Students must be enrolled at UWS College.

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This unit aims to give students the ability to recognise and expound about business information systems with regard to type, function, and purpose, and the frameworks within which these systems are used. Topics in this unit include computing fundamentals; computer hardware and software; computers and society; use of business application packages – spreadsheets, word processing, database, graphics; organisational information systems; information systems development and acquisition; data and knowledge management; electronic commerce, internets, extranets; networking; enterprise-wide information systems; the internet and information systems security; privacy, ethics and computer crime.

300486.1 Infrastructure Engineering

Credit Points 10 **Level** 2

Prerequisite

85003.1 Surveying for Engineers

Equivalent Units

85007 - Civil & Environmental Engineering Construction, 85008 - Engineering Urban Environments, 300296 - Road & Traffic Engineering

.....

This unit is offered in alternate years. This is an intense unit which will provide students with introductory material to assist them with civil engineering construction and urban development/town planning projects. It covers construction equipment, some construction methods, subdivision design and traffic engineering.

400286.1 Injury Prevention

Credit Points 10 **Level** 3

Prerequisite

400782.1 Essentials of Health Promotion

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Injury Prevention is a National Health Priority. Injury is the preferred term rather than 'accident' with its connotations of inevitability and lack of apparent cause, to allow development of inter-disciplinary prevention initiatives. A

systematic scientific approach to injury research and prevention is in evidence for road and occupational safety, backed by well resourced implementation structures. Other settings/sectors include sport, recreation, falls, firearms, farm, product and water safety, which are also seeing the benefits of injury prevention principles, which include health promotion issue analysis and strategic hierarchical implementation strategies using the 4Es of education, enforcement, engineering and environment.

200163.1 Innovation and Product Development

Credit Points 10 **Level** 2

Assumed Knowledge

Assumed understanding of business management fundamentals in the context of an enterprise's competitive activities in the marketplace.

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Innovation is an imperative for the competitiveness of enterprises. This unit gives students an understanding of innovation and product development as management processes within an enterprise that provide impetus for their continuing competitiveness. Studies have shown that the development of new products has a greater leverage on a company's profits than any other growth strategy, including acquisition. This unit also gives students insight into how the process of innovation can be enhanced within enterprises. It also examines various processes adopted by enterprises for undertaking new product development, and how product development can be a means of achieving growth for a firm.

300230.1 Inorganic Chemistry 2

Credit Points 10 **Level** 2

Assumed Knowledge

A demonstrated understanding of and competence with basic chemical principles including SI units, chemical symbols, formulas and equation, nomenclature, stoichiometry, the mole concept, bonding, molecular shape and polarity, states and properties of matter, thermodynamics, equilibria, acids and bases, pH and electrochemistry, to a standard equivalent to that presented in Chemistry 1 (or equivalent). An understanding of basic organic chemistry, particularly functional groups, their structures and properties, will be advantageous.

Prerequisite

300224.1 Chemistry 1 OR **300554.1** Principles of Chemistry

Equivalent Units

14247 - Inorganic and Analytical Chemistry, 300545 - Coordination Chemistry, CH206A - Chemistry 2.2, J2758 - Inorganic Chemistry 2

.....

Students studying at Campbelltown campus should refer to 300545 - Coordination Chemistry. This unit develops students' knowledge and comprehension of fundamental inorganic chemistry. A detailed introduction to co-ordination chemistry, discussing ligands, geometry, isomerism and oxidation states is provided, with particular emphasis on elements in the first transition series. Bonding in inorganic chemistry, solution chemistry, solid state chemistry, descriptive chemistry of representative main-group elements, and trends in the periodic table are also covered. Bioinorganic chemistry and some environmental aspects of inorganic chemistry are introduced. This unit also introduces students to many of the laboratory techniques and equipment that are used in this discipline.

300231.1 Inorganic Chemistry 3

Credit Points 10 **Level** 3

Assumed Knowledge

A demonstrated understanding of and competence with the principles of inorganic chemistry, including bonding and structure, coordination chemistry, bioinorganic chemistry and laboratory techniques, to a standard equivalent to that presented in Inorganic Chemistry 2 (or equivalent).

Prerequisite

300230.1 Inorganic Chemistry 2

Equivalent Units

J3668 - Inorganic Chemistry 3

.....

Students studying at Campbelltown campus should refer to 300538 - Advanced Inorganic Chemistry. This unit is built on the foundations laid in the unit 300230 - Inorganic Chemistry 2/300545 - Coordination Chemistry. Initially, this unit focuses on the nature of structure and bonding in inorganic chemistry. The spectroscopic and magnetic properties of inorganic compounds are evaluated as a consequence of the concepts of structure and bonding. Kinetics and mechanism of inorganic reactions are examined, and the important area of organo-transition metal chemistry is introduced. Laboratory sessions emphasise experimental design and planning by students, while introducing important techniques such as anaerobic synthesis. Students become familiar with inorganic chemistry literature and begin to appreciate recent work in this field. The laboratory component focuses on a variety of advanced techniques such as anaerobic syntheses and instrumental techniques of characterisation such as NMR, IR and electronic spectra. As well as requiring core studies, this unit recognises the diversity of inorganic chemistry by allowing students to specialise in certain advanced topics. Students select two out of five advanced topics: characterisation of inorganic compounds; selected descriptive inorganic chemistry; bioinorganic chemistry; aqueous chemistry of cations and metallic oxyanions; inorganic materials chemistry.

300075.1 Instrumentation and Measurement

Credit Points 10 **Level** 2

Equivalent Units

84157 - Sensors, Measurement and Data Acquisition

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This unit covers all topics associated with the measurement of physical quantities and the instrumentation required to accurately present this information to a controller. Transducers used to measure common physical quantities are presented in detail, while instrumentation includes a detailed analysis of zero-span circuits, Wheatstone bridges, Instrumentation amplifiers, isolation amplifiers, voltage-to-

current and voltage-to-frequency modules used for faithful signal transmission, digital-to-analog and analog-to-digital circuits, analog multiplexers and sample/hold amplifiers. The application of these modules in modern measurement equipment- multimeters, digital CRO's, and PLC/PC interfacing modules is discussed.

300075.2 Instrumentation and Measurement

Credit Points 10 **Level** 2

Prerequisite

300005.1 Circuit Theory

.....

This unit covers all topics associated with the measurement of physical quantities and the instrumentation required to accurately present this information to a controller. Transducers used to measure common physical quantities are presented in detail, while instrumentation includes a detailed analysis of zero-span circuits, Wheatstone bridges, Instrumentation amplifiers, isolation amplifiers, voltage-to-current and voltage-to-frequency modules used for faithful signal transmission, digital-to-analog and analog-to-digital circuits, analog multiplexers and sample/hold amplifiers. The application of these modules in modern measurement equipment- multimeters, digital CRO's, and PLC/PC interfacing modules is discussed.

400810.2 Integrated Clinical Rotations 1

Credit Points 80 **Level** 3

Prerequisite

400862.1 Foundations of Medicine 2

Special Requirements

Students must have completed a Prohibited Persons Employment Declaration, undergone a Criminal Record Check, have completed a WorkCover accredited Senior First Aid Certificate and have an up to date Adult Vaccination Record. Students must also sign a declaration that they understand and comply with: - Infectious Diseases Policy - Health Records and Information Privacy Act (HRIPA), 2002 - UWS' submitting their details to the NSW Medical Board This is carried out at enrolment to the course.

.....

ICR1 is the first major clinical year of the MB BS program. It consists of 12 weeks in each of Surgery, Medicine and Community based health care. There will also be 3 Conference weeks where all students will be based on the Campbelltown campus. Surgery and medicine rotations will be at Campbelltown, Blacktown and Mt Druitt hospitals. In each rotation students will spend 6 weeks in each of two sub-specialities. The Community rotations will involve general practice, aboriginal medical services and other community based aspects of the health care system. Students will also undertake 3 online learning modules. Students will also undertake two assignments in Evidence-based Practice.

400811.1 Integrated Clinical Rotations 2

Credit Points 80 **Level** 4

Prerequisite

400810.1 Integrated Clinical Rotations 1

Special Requirements

Students must be enrolled in 4641 Bachelor of Medicine, Bachelor of Surgery. Students will have achieved all following special requirements in the preceding years of the course: Criminal record check; Immunisations required by Health Service; Registration with Medical Board NSW; Child protection check. Immunisation status will be reviewed prior to the start of Year 3.

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ICR2 is the second major clinical year of the MB BS program. It consists of 10 weeks in each of Paediatrics, Obstetrics & Gynaecology and Psychiatry and five weeks in each of Oncology and Palliative Care and Community based Research project. There will also be three Conference weeks where all students will be based on the Campbelltown campus. Students will be based at a number of appropriate hospitals throughout Sydney. Students will also undertake three online learning modules (Scientific Streams). Students will also undertake a reflective portfolio.

300661.1 Integrated Science 1

Credit Points 10 **Level** 1

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Integrated Science is a revolutionary new introductory science unit which breaks the barriers and creates connections between the traditional Science disciplines. The content is based on hot topics in Science, which are important for our future and life on earth. Such problems often span the discipline areas and include physics, chemistry, biology and maths. The modularised structure of the content allows students to complete authentic problem-based learning modules, in an on-line environment. Problem solving and communication are assessed and stressed over rote learning and regurgitation of facts. Close contact between students, peers and academics is a major feature of this unit.

400154.1 Integrating Evidence into Practice

Credit Points 10 **Level** 5

Equivalent Units

400865 - Evidence Based Practice

.....

Research should be an important component of all health professionals' practice. This unit prepares students to graduate as evidence-based professionals and competent research consumers, by advancing skills learned in earlier research units. The early stages of the unit will build on students' previous study of research methods. Searching for, appraising, and summarising research in a relevant clinical area will be used to illustrate the process of evidence-based practice, and will provide a context for the further study of the technical principles of research. Barriers to the implementation of research in practice, policy-making, and health care planning will be explored.

300368.1 Intelligent Systems

Credit Points 10 **Level** 3

Assumed Knowledge

Basic understanding of data structures and algorithms and basic programming skills in Pascal C/C++ or Java etc.

Prerequisite

200025.1 Discrete Mathematics

Equivalent Units

300087 - Artificial Intelligence, 300137 - Knowledge Based Systems

.....

This unit provides basic studies in the major areas of artificial intelligence: search, knowledge representation, logic programming, machine learning and knowledge based systems, agent planning and learning. The first part of this unit will focus on the foundation of artificial intelligence: search algorithms and their implementations, game playing, logics and knowledge representation, and inference in reasoning systems. The second part will cover the principles of knowledge based systems (intelligent systems), planning, and machine learning.

100789.2 Interactive Design I

Credit Points 10 **Level** 2

Assumed Knowledge

Computer literacy including working in a networked environment on a Macintosh computer; management, transportation and storage of digital information and digital production processes such as scanning, pdf production and cd creation.Skills in design principles: layout, colour and typography.Literacy with Image manipulation software - e.g. Photoshop or Fireworks

Prerequisite

300302.1 Industrial Graphics 1: Presentation

Equivalent Units

100778 - Designing Multimedia

.....

This unit focuses on design methodology for the development and delivery of contemporary interactive media applications. Particular concepts addressed will also include conceptual integration and convergence of various media forms, screen design, navigational hierarchy and structures, and designing engaging interactive interfaces. General principles of interface, interaction design and information architecture will be introduced, alongside basic principles of digital media production.

100949.2 Interactive Design II

Credit Points 10 **Level** 2

Prerequisite

100789.1 Interactive Design I

Equivalent Units

100799 - Online Design

.....

This unit focuses on interactive design from an experience design perspective. Approaches utilising current digital technologies for advanced interactive design are explored. Students will design and produce interactive products and examine and critique current content and trends within these technologies. The focus of the unit is communication and experience design, rather than technical implementation. Interactive design examples are examined from the context of shifting production languages, convergent technologies and the design professional contexts.

61671.1 International Management

Credit Points 10 **Level** 3

Prerequisite

MG102A.1 Management Foundations OR **61611.1** Management Studies OR **H1727.1** Business Management

Equivalent Units

200623 - International Management

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This unit has been replaced by 200623 - International Management. In an era of ever increasing globalisation, it is essential that students of management are aware of salient global factors and issues that determine the process of applying management concepts and techniques in a multinational environment. This unit provides this knowledge through an examination of topics such as: the nature of international management and emergence of the global economy; determinants of the international competitiveness of nations, agencies and firms (with a focus on the Australian Situation); the cultural/political/ economic/financial dimensions of the international management environment; international law; dimensions of internation business strategy; the internationalisation of the firm, and organisation and control of international operations.

300130.1 Internet Programming

Credit Points 10 **Level** 3

Assumed Knowledge

Basic knowledge on internet browsing and any object-oriented programming language.

Equivalent Units

300246 - Internet Computing, 14020 - Object Oriented/ Internet Programming

.....

This unit offers students basic concepts and latest technologies of internet programming and web-based application development. Utilising one of the popular internet programming languages, such as Java, it aims to develop the programming skills and methodologies required for both client-side and server-side programming as well as general purpose programming. The range of topics covered by the unit includes HTML, XML, Java applets, desktop application in Java, servlets, JavaServer Pages and JDBC.

300574.1 Internet Structures and Web Servers

Credit Points 10 **Level** 2

Assumed Knowledge

Fundamentals of computer networking and basic knowledge of web technology

.....

This unit seeks to develop an understanding of the structures of the Internet and the organization of the World Wide Web, and the basic skills in setting-up and maintaining Web servers, proxy servers, email servers, and Internet firewalls.

300319.1 Introduction to Anatomy and Histology

Credit Points 10 **Level** 1

Assumed Knowledge

School level Biology

Equivalent Units

E1231 - Human Biology 1, 300752 - Introduction to Anatomy and Histology

Incompatible Units

400130 - Human Medical Sciences 1, 400256 - Human Medical Sciences 2, 400134 - Human Medical Sciences 3

Special Requirements

Students must be enrolled in course 0J142, 3577, 3517 or 3589 to enrol in this unit. Students undertaking UT001 or UT002 UniTrack may enrol with permission of the unit co-ordinator.

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This unit provides a basic understanding of human anatomy and histology. It undertakes this by utilising a systems approach (as against a regional approach), emphasising the special relationship between form and function at every level of tissue organisation.

300560.1 Introduction to Animal Science

Credit Points 10 **Level** 1

Equivalent Units

AG111A - Introduction to Equine Studies

Special Requirements

All activities in the unit involving live animals must be approved by the UWS Animal Care and Ethics Committee. All activities in the unit involving the use of animal specimens must be approved by the UWS Institutional Biosafety and Radiation Safety Committee.

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The aim of the unit is to give students an introduction to different areas of study within Animal Science. This unit gives the basic skills and knowledge base for further development in the program. The unit will include a balance of theoretical and practical work in the areas of classification, behaviour and handling, structure and locomotion, basic health care, feeding, reproduction and growth and development.

300503.1 Introduction to Biotechnology

Credit Points 10 **Level** 1

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This unit will provide a basic understanding of the techniques, achievements and issues associated with biotechnology and will serve as an introduction to higher level units that students will take later in their study program. The unit will cover developments in biotechnology from both historical and contemporary perspectives as they apply to medicine, to the pharmaceutical, veterinary and agricultural industries and how biotechnology can be applied to environmental issues. Students will gain knowledge of genes, genetics, genetic manipulation and how these techniques are applied in scientific and industrial contexts.

200184.2 Introduction to Business Law

Credit Points 10 **Level** 1

Corequisite

200336.1 Business Academic Skills

Equivalent Units

LW110A - Business Law, F1011 - The Australian Legal System, F1012 - Introduction to Business Law, 61511 - Introduction to Legal Principles

Special Requirements

Co-requisite - 200336 - Business Academic Skills, for students in courses 2739 Bachelor of Business and Commerce and 2741 Bachelor of Business and Commerce (Advanced Business Leadership).

.....

This is an introductory law unit designed to introduce the fundamentals of law in a commercial context. The unit introduces students to the basic principles of law and the legal system as well as examining some of the major areas of law that impact on commercial dealings. This unit examines the structure of the legal system, the way law is made and legal problem solving. The main areas of law covered include contracts, torts, consumer protection and agency

100672.1 Introduction to Dance

Credit Points 10 **Level** 3

Equivalent Units

10068 - Introduction to Dance, 10720 - Introduction to Dance

.....

This unit provides students with an introduction to dance practice and theory. Students gain basic competencies in a range of styles of dance and through creative work address aspects of improvisation, composition, performance and dance analysis. Historical and cultural contexts of selected dance styles are also explored. The unit prepares students for the Bronze Medallion in ballroom dancing.

300232.1 Introduction to Earth Sciences

Credit Points 10 **Level** 1

Equivalent Units
14511 - Geology 1

.....

This unit covers the nature of the earth's surface and physical processes operating on it; properties and behaviour of the crust of the earth; mineral products, especially energy, metals and water; maps and geologic structures; and minerals, rocks, fossils. Two one-day field excursions are undertaken.

85024.1 Introduction to Environmental Chemistry

Credit Points 10 **Level** 1

Assumed Knowledge
It is assumed that you have successfully completed 300469 Introductory Chemistry

Prerequisite
14401.1 Civil and Environmental Engineering Chemistry

.....

This unit has been designed for students who are interested in environmental science. Some topics to be covered in this unit include water hardness, purification of water and degradation of common plastics which are of significant interest to environmental scientists. Specific topics on Environmental Chemistry including the environmental chemistry of oxygen, sulphur, water, carbon, nitrogen are dealt with throughout the semester.

400750.2 Introduction to Health Breakdown

Credit Points 10 **Level** 1

Assumed Knowledge
Content equivalent to 400746 - Understanding Good Health

Equivalent Units
400051 - Nursing Science 4

.....

This unit introduces students to the concepts and mechanisms of health breakdown and their application to professional nursing practice.

300566.1 Introduction to Health Informatics

Credit Points 10 **Level** 2

Assumed Knowledge
Familiarity with use of common business software eg. Spreadsheets and database

.....

This unit introduces key concepts and skills required in the emerging Health Informatics domain including: Australian and International healthcare data representation and interchange standards; health care data modelling including patient journey modelling; overview of health information systems with a focus on decision support and clinical systems; telehealth and communication technologies; and electronic health records.

300361.1 Introduction to Human Biology

Credit Points 10 **Level** 1

Equivalent Units
400130 - Human Medical Sciences 1

.....

This unit gives a basic understanding of the human body and introduces the scientific and medical terminology used for anatomy, physiology and biochemistry. It deals with gross structure and microscopic structure of the human body. It also examines microbial organisms, their classification, how they differ from eukaryotic cells and how our body defends against them. Where appropriate, examples of functional diseases will be discussed.

300320.1 Introduction to Human Physiology

Credit Points 10 **Level** 1

Equivalent Units
E1237 - Human Biology 2, BC206A - Human Physiology 2.2, 300753 - Introduction to Human Physiology

Incompatible Units
400130 - Human Medical Sciences 1, 400256 - Human Medical Sciences 2, 400134 - Human Medical Sciences 3

.....

This unit uses a body-systems approach to examine the physiology of tissues, organs and systems in order to develop an integrated view of the regulated functioning of the human body. The unit concludes with a critical examination of the concept of homeostasis.

300753.1 Introduction to Human Physiology

Credit Points 10 **Level** 1

Equivalent Units
E1237 - Human Biology 2, BC206A - Human Physiology 2.2, 300320 - Introduction to Human Physiology

Incompatible Units
400130 - Human Medical Sciences 1, 400256 - Human Medical Sciences 2, 400134 - Human Medical Sciences 3

.....

This unit uses a body-systems approach to examine the physiology of tissues, organs and systems in order to develop an integrated view of the regulated functioning of the human body. The unit concludes with a critical examination of the concept of homeostasis.

300134.1 Introduction to Information Technology

Credit Points 10 **Level** 1

Equivalent Units
B1582 - Introduction to Computers, J1742 - Computer Fundamentals, 61211 - Information Technology

Special Requirements

Permission required for students enrolled in course code 3562 Bachelor of Science (Advanced).

.....

This introductory unit gives students an insight into the history, structure, operations and uses of computers, and their impact on society. This will be complemented by hands-on use of computers and popular application software packages in a graphical user interface environment. Students gain a basic understanding of the uses of computers, and the skills necessary to use popular applications software, including word processing, spreadsheet and database packages, and Internet tools and services.

400244.1 Introduction to Leisure and Recreation Theory

Credit Points 10 **Level** 1

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This unit uses a multidisciplinary approach to explore the different meanings of leisure and recreation. It explores the social psychology of leisure and recreation in addition to the principles and processes of leisure education and leisure counselling. This unit provides the knowledge base that underpins the practical skills of leisure and recreation assessment, program planning and evaluation for a variety of client groups.

400776.2 Introduction to Nursing Practice

Credit Points 20 **Level** 1

Assumed Knowledge

Knowledge gained from a biological or arts/ behavioural science degree or a 3 year post secondary school, overseas registered nurse qualification.

Incompatible Units

400640 - Foundations of Nursing Practice, 400462 - Medical-Surgical Nursing Therapeutics

Special Requirements

Space restriction in relation to CPU's safety dealing with the public.

.....

This unit introduces the student to nursing concepts, principles and skills that identify, promote, maintain and support health and well being across the lifespan. Students will also acquire knowledge of nursing concepts and practices that support people who are affected by health breakdown. This introductory unit prepares students for entry into the second year of the Bachelor of Nursing 4642 degree course.

400160.1 Introduction to Occupational Therapy

Credit Points 10 **Level** 1

Equivalent Units

E1309 - Occupational Therapy 1

.....

This unit introduces students to the profession of occupational therapy, conceptual foundations underpinning the profession, and areas of clinical practice. Students will learn about the important and unique contribution made by occupational therapists in people's lives to promote health and well-being. The important role of occupation in daily life will be discussed. In particular, this unit presents an overview of how occupational therapy reduces activity limitations people may have, and in doing so enhances the social participation for people of all ages and abilities. The problem solving process used by occupational therapists to assist clients will be introduced.

200042.2 Introduction to Operations Research

Credit Points 10 **Level** 2

Assumed Knowledge

HSC Mathematics or equivalent.

.....

This unit introduces the ideas of systems and their mathematical modelling, with special reference to the allocation, inventory, scheduling, queuing and other processes taking place within social systems. It introduces modelling and heuristic problem solving techniques and goes on to introduce the standard techniques of linear programming, network analysis, critical path analysis, inventory control and simulation. Throughout, an emphasis is placed upon the mathematical development of algorithms and their computerisation.

400137.1 Introduction to Research for Health Sciences

Credit Points 10 **Level** 1

Equivalent Units

E1235 - Research Methods in Health Care, 400863 - Foundations of Research and Evidence-Based Practice

Incompatible Units

63235 - Introduction to Social Research

.....

This unit lays down broad foundations of research as used in various disciplines of health sciences, including health and well-being, physical fitness, physical activity, and nutrition. The aim is to create an overall understanding of the significance of research in the students' fields of endeavour. It is designed to introduce the student to foundational concepts and principles in quantitative and qualitative research methods and to explore the complementary role of research paradigms as they underpin the quest for knowledge in the health sciences. It will also address essential research themes such as epidemiology research, validity, reliability, and research ethics.

101336.1 Introduction to Sociology

Credit Points 10 **Level** 1

Equivalent Units

400164 - Introduction to the Sociology of Health, B1948 - Introduction to Sociology 1

.....

This unit introduces students to the central concepts, theories and methodologies of sociology, and demonstrates the ways in which sociological thought contributes to a systematic and critical understanding of contemporary society. The unit draws upon case studies from Australia and other societies.

400164.1 Introduction to Sociology of Health

Credit Points 10 **Level** 2

Equivalent Units

E2231 - Social Dimensions of Health & Illness, 25006 - Introduction to Sociology of Health, 101336 - Introduction to Sociology

Incompatible Units

400781 - Dynamics of Health

.....

The aim of this unit is to offer students new understandings of people in their relations with each other in complex social and cultural contexts. The unit uses health and illness as the prism through which such understandings can be gleaned. The unit introduces students to sociological perspectives and it applies sociological ways of thinking to questions of health, illness and disability. Students will study the influence of culture and social institutions, and of social determinants such as class (socio-economic status), gender, race/ethnicity in shaping social relations and in the production of differing patterns of health and illness. The 'body' as a social and cultural construct, as well as a physical entity, will be explored, as will models of health and health care.

100678.1 Introduction to Sport Psychology

Credit Points 10 **Level** 1

Equivalent Units

B1080 - Introduction to Sport Psychology

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The field of Sport Psychology is primarily concerned with the study of psychological factors and skills that impact on sport performance which include: personality, motivation, confidence, attention, anxiety and arousal, self-regulation of arousal, performance enhancement strategies, group dynamics, leadership, causal attributions; as well as the study of youth in sport and psychology of exercise.

400282.2 Introduction to Sports Medicine

Credit Points 10 **Level** 2

Prerequisite

400130.1 Human Medical Sciences 1 OR **300361.1** Introduction to Human Biology

Special Requirements

Work Cover Approved First Aid Certificate

.....

This unit is an introduction to basic sports medicine with an emphasis on the management and prevention of sports injuries.

85006.2 Introduction to Structural Engineering

Credit Points 10 **Level** 2

Prerequisite

300040.1 Mechanics of Materials

Equivalent Units

300733 - Introduction to Structural Engineering

.....

This unit covers the basic concepts in analysing and designing simple structural members. It covers the fundamentals of structural analysis, concrete structures and steel structures.

400136.1 Introduction to the Psychology of Health

Credit Points 10 **Level** 1

Equivalent Units

E2238 - Health & Human Behaviour

.....

This unit introduces some of the core concepts, models, theories and methods of inquiry in psychology as they apply to health. Assumptions of human behaviour are examined, showing how these assumptions form the four foundational models of psychology. Those models being psychobiological, learning, cognitive and social. The application of these models to issues of development, personality, motivation and clinical applications allows students to address health topics such as stress, resilience and coping, smoking, eating disorders, disability and health practices.

300425.1 Introduction to Wildlife Studies

Credit Points 10 **Level** 1

Assumed Knowledge

Basis understanding of biological / general / environmental sciences.

Special Requirements

This unit is only available to students who are enrolled in 3592 Bachelor of Animal Science.

.....

This unit will study the basic biology, ecology, conservation and management of selected terrestrial animals (amphibian, reptiles, birds and mammals) grouped according to their taxonomic affiliations. It will examine the various strategies used in the management of both wild roaming and captive reared animals including those propagated for human use. Students will learn the different management systems and research methods used in the conduct of wildlife research. The use of wildlife as a sustainable resource will be analysed within the context of ecological sustainable development and animal ethics.

300469.1 Introductory Chemistry

Credit Points 10 **Level** 1

Assumed Knowledge

It is assumed that students will have at least already completed a Chemistry bridging course offered by this university, or an equivalent course.

Equivalent Units

300224 - Chemistry 1, 80800 - Introductory Chemistry 1, CH101A - Introductory Chemistry 1.1D

.....

The aims of this unit are to relate chemical principles to everyday life. Laboratory skills will be introduced in a systematic way that helps students apply the concepts they will be learning concurrently within the unit. The usefulness of chemistry will be emphasised by giving examples relevant to the students' areas of professional interest (eg food technology, environmental sciences, biology or horticulture), while ensuring that the following fundamental topics are covered: matter, energy, chemical bonds, states of matter, chemical reactions and rates, equilibrium, introduction to organic compounds and nuclear chemistry.

300613.1 Introductory Geochemistry: Earth, Resources and Environments

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Chemistry or equivalent.

Equivalent Units

14524 - Introductory Geochemistry: Earth, Resources and Environments

.....

This unit covers rocks and minerals as chemical systems; acquisition, presentation and use (modelling) of geochemical data; chemical evolution of Earth's atmosphere and oceans; monitoring Earth's major and minor climatic events; land degradation; remote sensing and aerial photographic interpretation; chemical aspects of ore genesis; minerals and phase equilibria; transport and cycling of the elements.

300333.1 Introductory Plant Physiology

Credit Points 10 **Level** 2

Equivalent Units

BI104A - Plant Science and Physiology

.....

This unit introduces students to the study of the mechanisms by which plants function and provides an understanding of these mechanisms. The unit covers the basic concepts of plant physiology, photosynthesis, respiration, photomorphogenesis, phytohormones, mineral nutrition, water relations and the regulation of plant growth and development. This unit is designed to provide a basic knowledge of the scientific principles that underpin horticulture.

300334.1 Invertebrate Biology

Credit Points 10 **Level** 3

Assumed Knowledge

An understanding of biology, especially invertebrates. An understanding of basic chemistry.

Equivalent Units

BI203A - Biology of Non-Plant Organisms

.....

This unit aims to build plant protection skills for students wishing to learn a detailed understanding of arthropods causing plant damage, their characteristics, physiology and behaviour, ecology and taxonomy.

101116.1 Issues in Aboriginal Education

Credit Points 10 **Level** 1

Equivalent Units

G2018 - Issues in Aboriginal Education

.....

This unit is designed to meet the needs of prospective educators who require in depth knowledge in the field of historical and contemporary Indigenous Australian cultures and education. The unit relates both to working with Indigenous Australian children and families in educational settings and for the effective implementation of Aboriginal perspectives and studies in learning environments with all Australian children.

400821.2 Issues in Chronic and Palliative Nursing Care

Credit Points 10 **Level** 3

Incompatible Units

400763 - Family Health Care: Chronicity and Palliative Care Nursing

Special Requirements

Students must be enrolled in the Bachelor of Nursing Studies to enrol in this unit.

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This unit version replaces version 1 from 2010. This unit enables students to explore professional nursing issues that arise when caring for people and families who are living with chronic illness, and for people who are dying from a life threatening illness.

300035.2 Kinematics and Kinetics of Machines

Credit Points 10 **Level** 2

Prerequisite

300463.1 Fundamentals of Mechanics AND **200237.1** Mathematics for Engineers 1

Equivalent Units

86222 - Engineering Mechanics 2

.....

This unit looks at how one or more particles move in one, two or three dimensions, and how forces cause these movements. It also looks at how a single rigid body moves in two and in three dimensions, and how forces and couples cause its movement. In addition, the movement of multi-body mechanisms, and gear trains and the geometry of gear teeth and cams are studied.

400752.2 Knowing Nursing

Credit Points 10 **Level** 1

Assumed Knowledge

400748 - Becoming a Nurse

Equivalent Units

400049 - Nursing Context 2

.....

This unit version replaces version 1 from 2010. This unit introduces students to further constructs that inform professional nursing and nursing practice related to health breakdown.

300656.1 Laboratory Quality Management

Credit Points 10 **Level** 3

Assumed Knowledge

A demonstrated understanding of and competence with laboratory techniques in analytical chemistry or microbiology, corresponding to successful completion of a Level 2 Microbiology or Analytical Chemistry unit.

Equivalent Units

SC301A - Laboratory Quality Management, BCT321 - Biological/Chemical Technology Practicum 6A, SSCB34 - Practicum 6 (NATA Registration)

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The unit is directed towards the accreditation of a laboratory for chemical, microbiological or forensic testing. Throughout their undergraduate studies, students will have acquired and developed a wide range of practical skills. Competency in the laboratory, however, encompasses much more than the ability to demonstrate a range of manipulative skills. This unit focuses upon the importance and coordination of good laboratory management, teamwork, calibration, record keeping and laboratory manuals. Students are required to develop, establish and operate a Laboratory Quality Management system designed for a specific class of chemical or microbiological test. The quality system is then subjected to a mock accreditation following the guidelines laid down by the National Association of Testing Authorities (NATA). Students will staff the laboratory system under evaluation while academic staff and visitors act as the assessors.

SC301A.1 Laboratory Quality Management

Credit Points 10 **Level** 3

Assumed Knowledge

A demonstrated understanding of and competence with laboratory techniques in analytical chemistry or microbiology, corresponding to successful completion of a Level 2 Microbiology or Analytical Chemistry unit.

Equivalent Units

BCT321 - Biological/Chem Technology Practicum 6A, SSCB34 - Practicum 6 (Nata Regn), 300656 - Laboratory Quality Management

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This unit is directed towards the accreditation of a laboratory for chemical or microbiological testing. Throughout their undergraduate studies, students will have acquired and developed a wide range of practical skills. Competency in the laboratory, however, encompasses much more than the ability to demonstrate a range of manipulative skills. This unit focuses upon the importance and coordination of good laboratory management, teamwork, calibration, record keeping and laboratory manuals. Students are required to develop, establish and operate a Laboratory Quality Management system designed for a specific class of chemical or microbiological test. The quality system is then subjected to a mock accreditation following the guidelines laid down by the National Association of Testing Authorities (NATA). Students will staff the laboratory system under evaluation while academic staff and visitors act as the assessors.

300624.1 Landuse and the Environment

Credit Points 10 **Level** 2

Equivalent Units

DN207A - Landuse and the Environment

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This unit will assist students develop a sound framework for the analysis of land use and its interactions with the environment. The skills gained will assist in evaluation of land use at various levels from household to international level. Particular emphasis will be placed on students gaining a sound conceptual framework from which to examine sustainability at the environmental, economic, social, and production levels. Emphasis will be placed on the use of ecological footprinting as a tool.

400818.2 Leadership and Management in Graduate Practice

Credit Points 10 **Level** 3

Assumed Knowledge

It is expected that students will have an understanding of psychosocial concepts and theories, and an awareness of the relationship between effective interpersonal communication and professional relationships.

Incompatible Units

400063 - Nursing Context 6, 400766 - Leadership in Graduate Practice

Special Requirements

Students must be enrolled in the Bachelor of Nursing Studies to enrol in this unit.

.....

This unit version replaces version 1 from 2010. This unit introduces students who are registered nurses to the concept of the professional nurse as a leader and manager. The exploration and application of leadership and

management theory and concepts will enable students to develop an understanding of the relationship of between leadership, management and ethical, effective workplace relationships.

400766.2 Leadership in Graduate Practice

Credit Points 10 **Level** 3

Equivalent Units

400063 - Nursing Context 6

Special Requirements

Students must be enrolled in the Bachelor of Nursing OR Bachelor of Nursing (Graduate Entry) to enroll in this unit.

.....

This unit version replaces version 1 from 2010. This unit introduces the student to the role of the professional nurse as leader and manager.

400849.1 Leadership in Graduate Practice (Advanced)

Credit Points 10 **Level** 3

Assumed Knowledge

Completion of all Year 1 and Year 2 Nursing units. Completion of all Year 2 Bachelor of Nursing (Advanced) units

Incompatible Units

400766 - Leadership in Graduate Practice

Special Requirements

Restrictions on clinical practicum placements students must be enrolled in the Bachelor of Nursing (Advanced) and meet special requirements for safety and professional issues when dealing with the public. Special Requirements are those stipulated by the NSW Health and UWS. At present these include: • Prohibited Persons Employment Declaration (PPED) • Criminal Record Check (CRC) • Adult Health Immunisation • Workcover accredited Senior First Aid Certificate

.....

This unit introduces the student to the role of the professional nurse as leader and manager. The unit provides opportunities to explore the role of the nurse as leader and manager of a team alongside medical students. The student will be provided with an opportunity to participate in a mentored relationship with appropriate School and College staff.

101259.1 Learning and Creativity

Credit Points 10 **Level** 1

Equivalent Units

SE111A - Learning and Creativity

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This unit promotes considerations of the inter-related processes of learning and creativity and the application and practice of these in all aspects of life. Learning and Creativity must be considered in context. This context is personal, social, cultural and environmental. Unit content is critically positioned within diverse theories, with an emphasis on experiential learning and ongoing critical reflection. The unit promotes understanding of feeling and experience as much as concepts and ideas. It emphasizes the tools and skills of learning, the everyday nature of creativity and enables students to develop and apply their creativity. It is designed for students interested in personal, community and cultural development, in the context of far reaching change.

101117.1 Learning through Community Service

Credit Points 20 **Level** 3

Assumed Knowledge

Competence in various forms of communication, such as written, visual, or media-based, to underpin the preparation of a final report. The students need to be at third-year level, adept at working with others and capable of carrying out project work independently.

.....

Learning through Community Service is a 20 credit point unit in which students apply discipline-based knowledge as they carry out projects of substantial benefit to community agencies. The unit will run over a 6-month period (1H or 2H) and will include common symposium sessions, a 10-week placement in a community agency, an on-line learning system for student/team support, and a final report to the agency. Cohorts available in 2007.1H include International Student Social Support Networks; MMADD about the arts: Music, Media Arts, Dance and Drama in the Primary School; Students in Free Enterprise (SIFE); Community Language School Development; Video Production; Equity Buddies; Strategic Communications; Children and Technology; and Languages in Educational and Community Settings. Cohorts available in 2007.2H include MMADD about the arts: Music, Media Arts, Dance and Drama in the Primary School, Students in Free Enterprise (SIFE), Literacy, Practically Primary and Serving Children, Families and Professionals as Children Start School.

400789.1 Leisure Education Programming and Mental Health

Credit Points 10 **Level** 1

Equivalent Units

400090 - Leisure Education, 400247 - Programming in Therapeutic Recreation

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In this unit students will explore leisure education that is used in a broad range of service industries that focus on the development and acquisition of a range of leisure, recreation and programming related skills, knowledge and attitudes. Students will develop a philosophical approach to leisure and recreation and skills in communication and facilitation strategies to enable them to use appropriate decision-making processes in developing recreation programs for a range of people across the lifespan. Students will utilise a variety of leisure,recreation and tourism resources to develop recreation programs that will assist in enhancing the lifestyle opportunities and leisure experiences for the client populations they serve.

200027.1 Linear Algebra

Credit Points 10 **Level** 2

Assumed Knowledge

Content of 200025 - Discrete Mathematics

Equivalent Units

J1730 - Mathematics 1.2, J2764 - Mathematics 2.1, 14501 - Mathematics 1, 14503 - Mathematics 3

.....

Objective of this unit is to present the main fundamentals of linear algebra and includes such topics as solving systems of linear equations, matrix algebra, determinants, eigenvalues and eigenvectors, Euclidean vector spaces, general vector spaces, inner product spaces and linear transformations.

101278.1 Literacy for Social Action

Credit Points 10 **Level** 3

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Literacy is as a socio-cultural phenomenon which impacts differently on different social groups. This unit raises questions about who, historically, has had differential access to literacy in specific societies and cultures. The unit investigates the changing nature of literacy(ies) both historically and in contemporary societies. It also focuses on the phenomenon of English as a global language and what this has meant for post-colonial socieites. Specific case studies of literacy in terms of social activism will be examined.

300632.1 Living in Country

Credit Points 10 **Level** 1

Assumed Knowledge

Basic understanding of Indigenous culture and landscape values; in particular, the learning outcomes from 300631 Indigenous Landscape.

Prerequisite

300631.1 Indigenous Landscape

.....

This unit complements and builds on the content of unit 300631 Indigenous Landscape. It aims to integrate traditional Aboriginal ways of living in landscape into the undergraduate Bachelor of Natural Science program. Specifically, the unit explores how landscape has influenced Indigenous Australians in terms of their cultures, diet, water supply and shelter and how traditional Indigenous stewardship practices underpin the practice and principles of 'living off the land' and ' Caring for Country'. This unit adopts an ecological approach to the exploration of sustainable land use and the concept of self-sustaining systems.

300459.1 Major Project Commencement

Credit Points 20 **Level** 4

Assumed Knowledge

Knowledge related to the successful completion of year 3 Industrial Design is assumed.

Prerequisite

300313.1 Design Studio 4: Simulate to Innovate AND **300314.1** Designed Inquiry

Corequisite

10915.1 Industrial Experience AND **300012.1** Design Management 1: Product Design Audit OR **300312.1** Industrial Graphics 4: Surface OR **86301.1** Automated Manufacturing

Special Requirements

Successful completion of 220 credit points.

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This unit prepares students to be flexible and innovative, with the emphasis placed on design, and its place in and effect on society and people. Students are challenged to respond to a real world design brief focusing on a specific user group and context-of-use. Students undertake desk, field and practical research in order to find design opportunities for detailed development in the second semester of the fourth year program. Peer learning is an important part of the learning experience, as is a user-centred design research approach and is facilitated by an intensive off-campus field trip in the project start-up phase.

300460.1 Major Project Completion

Credit Points 30 **Level** 4

Assumed Knowledge

Knowledge related to the successful completion of year 3 Industrial Design is assumed and successful completion of Major Project Commencement and Major Project Commencement's co-requisite units.

Prerequisite

300459.1 Major Project Commencement

Corequisite

300013.1 Design Management 2: Corporate Image and Identity OR **300015.1** Design Management 4: Design Process OR **300315.1** Industrial Graphics 5: Integrated

.....

Major Project Completion is the project realisation component of the student's final year program. The unit offers the student the chance to consolidate the range of methodologies and processes developed and evaluated in Major Project Commencement, that contextualise the principles and practices that will lead to the realisation of their identified design solution. The final design outcome will form part of the final year graduate exhibition. The design solution which students will be developing and submitting for this unit responds to the design brief developed in Major Project Commencement.

300536.1 Major Project in Construction

Credit Points 10 **Level** 4

Prerequisite

200485.1 Decision Making for Construction Professionals

Equivalent Units

BG402A - Major Project 1

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This unit will enhance the ability of students to investigate a selected topic with a construction industry focus. The unit involves the preparation of a literature review, in consultation with an external supervisor from industry. Content: mechanics of a literature review, use of research (or strategic planning) in the construction industry, development of high-value competencies in terms of marketing, organisational structure and project management.

300408.1 Mammalian Cell Biology and Biotechnology

Credit Points 10 **Level** 3

Assumed Knowledge

First year biology and second year biochemistry units.

Prerequisite

300219.1 Biochemistry 1 OR **300555.1** Proteins and Genes

Equivalent Units

BI302A - Cell Biology, 300318 - Mammalian Cell Biology and Biotechnology

.....

This unit deals with the molecular mechanisms within cells that co-operate to create a system that feeds, moves, responds to stimuli, grows and divides. The unit will initially build on existing knowledge of the properties that are common to most eukaryotic cells and that are necessary to an understanding of how any individual cells live, reproduce and form mammalian tissue.

300407.1 Mammalian Molecular Medicine

Credit Points 10 **Level** 3

Assumed Knowledge

Basic knowledge in plant, animal and microbial genetics and molecular biology.

.....

This unit focuses on the science that is critical to our understanding of the basic biology, pathophysiology, diagnosis and treatment of acute and chronic diseases. This unit prepares students for future innovations in prevention, management and cure of catastrophic diseases, such as autoimmune diseases, fatigue illnesses, rheumatic diseases, cancer and infectious and genetic diseases.

200571.1 Management Dynamics

Credit Points 10 **Level** 1

Corequisite

200336.1 Business Academic Skills

Special Requirements

At Blacktown campus the Nirimba precinct high school students can take this unit - the Child Protection (Prohibited Employment) Act 1998 (NSW) applies. Only students enrolled in 2739 Bachelor of Business and Commerce and completing the Property key program can enrol in Blacktown campus external offering.

.....

This unit provides an opportunity for students to engage with the dynamics of the management of organisations. Students will be introduced to the connection between the way work and systems are organised and managed and their impact on individuals and societies. This is achieved by using case based opportunities to examine real life contexts. This is an essential unit for business students that can be taken by any student needing a broad initial understanding of management.

MG102A.2 Management Foundations

Credit Points 10 **Level** 1

Special Requirements

This unit is restricted to students enrolled in the Bachelor of Engineering, Bachelor of Construction Management, Bachelor of Technology, and Bachelor of Housing.

.....

Management Foundations provides an opportunity for students to understand the linkage between organisational processes and managerial practices. The main aim of the unit is to identify the dynamic nature of managerial practice in changing social, economic, technological and global environments. This unit is for students in the School of Engineering only. Students in other degrees are not able to complete this unit.

EY104A.1 Management of Aquatic Environments

Credit Points 10 **Level** 1

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From 2009 this unit is being replaced by 300633 - Management of Aquatic Environments. This unit uses the setting of surface freshwater aquatic environments to develop an understanding of a range of professional skills and values necessary for the theory and practice of environmental management. Working in small groups students investigate the philosophy and practice of science through the design and implementation of field studies that investigate the nature of pollution, evaluate the current condition of aquatic systems and recommend strategies that will improve ecosystem integrity and mitigate the risk of adverse human health outcomes.

300633.1 Management of Aquatic Environments

Credit Points 10 **Level** 1

Assumed Knowledge

Basic biological sciences.

Equivalent Units

EY104A - Management of Aquatic Environments

.....

This unit uses the setting of surface freshwater aquatic environments to develop an understanding of a range of professional skills and values necessary for the theory and practice of environmental management. Working in small groups students investigate the philosophy and practice of science through the design and implementation of field studies that investigate the nature of pollution, evaluate the current condition of aquatic systems and recommend strategies that will improve ecosystem integrity and mitigate the risk of adverse human health outcomes.

200083.1 Marketing Principles

Credit Points 10 **Level** 1

Equivalent Units

61711 - Marketing Principles, H2808 - Principles of Marketing, MK104A - Marketing Fundamentals

Special Requirements

The 2009 Spring Parramatta external offering is restricted to Property students enrolled in either 2712 Bachelor of Business (Property) or the Property key program in 2739 Bachelor of Business and Commerce.

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This unit is a survey of the marketing process, introducing students to the marketing concept, strategic and marketing planning, marketing research, consumer and customer behaviour, issues of market segmentation, targeting and positioning as well as all the elements of the marketing mix (product/service, pricing, distribution and marketing communication strategies).

200472.2 Material Science in Construction

Credit Points 10 **Level** 2

Assumed Knowledge

Contents covered in Building 1.

.....

This unit deals with the behaviour of building materials within the construction context. An introduction will be given on material behaviour and how properties are affected by the micro-structure and composition. Emphasis will be given to the application of various materials in construction. Physical properties of each material will be discussed in detail and the degradation effect of environment and the effect of use. The impact of the manufacturing processes for these building materials/products on the environment will also be addressed. Materials covered in this unit include concrete, timber, metal, composite and polymer. Emphasis will be given to the application of composite, polymer and ceramics which have not been covered by other units in the course.

200024.1 Mathematical Finance

Credit Points 10 **Level** 3

Prerequisite

200026.1 Advanced Mathematics for Business OR
200030.1 Differential Equations

.....

The first section of the unit covers the idea of hedging and pricing by arbitrage in the discrete-time setting of binary trees. The key probabilistic concepts of conditional expectation, martingales, change of measure and representation are introduced in a simple framework. The second (and main) part of the unit concentrates on classical Black-Scholes analysis, assuming a lognormal random walk for asset prices. Ito's lemma and simple arbitrage arguments are used to derive the Black-Scholes partial differential equation for the fair value of an option. A variety of different kinds of options are considered and it is shown how, by suitably selecting boundary and final conditions for the Black-Scholes equation, virtually all derivative securities may be valued in a Black-Scholes framework. The unit concludes with a variety of 'exotic options': digital, pay-later, gap options and American options and the free boundary value problems. The link between the existence of equivalent martingale measures and the ability to price and hedge is formalised.

200022.1 Mathematical Modelling

Credit Points 10 **Level** 3

Assumed Knowledge

Differential Equations.

Equivalent Units

14336 - Mathematical Modelling 1, J3674 - Mathematical Modelling, 14407 - Differential Equations Modelling

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This unit concentrates on the solution of some mathematical problems that are suitable for interpretation in a deterministic manner. Selected real-world problems are approximated by mathematical models that are amenable to being written in terms of linear and non-linear equations and ordinary differential equations. In some instances analytic solutions are obtained, while in others computer programs provide numerical results. In either situation, there is emphasis on interpreting models, modifying them as required and using them for prediction.

300691.1 Mathematical Reasoning

Credit Points 10 **Level** 1

Special Requirements

Only students enrolled in a Science / Computing / Business degree course should enrol in this unit and this enrolment must take place in their first year of study. Students may not concurrently enrol in Mathematical Reasoning and any other mathematics / statistics unit. Due to the requirements above, permission is required to enrol in this unit. 300691 Mathematical Reasoning is incompatible with the following units: DN206A Planning Research Methods, 200022

Mathematical Modelling, 200023 Analysis, 200024 Mathematical Finance, 200025 Discrete Mathematics, 200026 Advanced Maths for Business, 200034 Statistical Theory, 200036 Data Mining & Visualisation, 200037 Regression Analysis & Experimental Design, 200038 Time Series & Forecasting, 200041Applied Regression and Forecasting, 200042 Introduction to Operations Research, 200237 Mathematics for Engineers 1, 200238 Mathematics for Engineers 2, 200242 Mathematics for Engineers 3, 200424 Statistics for Accountants, 200027 Linear Algebra, 200028 Advanced Calculus, 200030 Differential Equations, 200031 Mathematics for Business, 200032 Statistics for Business, 200033 Applied Statistics, 200045 Quantitative Project, 200182 Quantitative Techniques, 200189 Concepts of Mathematics, 200192 Fundamentals of Mathematics, 200192 Statistics for Science, 200193 Abstract Algebra, 200263 Biometry.

.....

This unit will cover basic mathematical concepts, such as algebraic, graphical, trigonometric and arithmetic skills that are needed in a variety of contexts. In any one semester, six areas on content will be considered from the following - Basic Numerical Operations, Basic Algebraic Operations, Functions and Graphs, Linear Equations, Quadratic Equations and Quadratic Functions, Basic Trigonometry, Financial Mathematics and Basic Statistics. In addition to the mathematical content, students will be exposed to strategies that will help them to learn to study mathematics effectively and also to lessen any mathematical anxiety problems that they may experience.

700044.1 Mathematics (UWSCFS)

Credit Points 10 **Level** Z

Special Requirements

Students must be enrolled at UWS College.

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The Mathematics unit is designed and written to prepare students for further mathematical study at first year university level. It provides a comprehensive introduction to the study of calculus and its applications in the real world. The unit develops those skills peculiar to the mathematical requirements of further study in the areas of Business, Computing, Information Technology, Science and Engineering.

300672.1 Mathematics 1A

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Mathematics achieved at band 4, 5 or 6 or equivalent, or 200191 Fundamentals of Mathematics

Equivalent Units

200189 - Concepts of Mathematics

Special Requirements

Students enrolled in 3621 Bachelor of Engineering degree course cannot enrol in this unit

.....

This level one hundred unit provides a solid foundation in the theory and applications of differential calculus, as well as some introductory work on complex numbers. It is the first of two units developing aspects of calculus.

300673.1 Mathematics 1B

Credit Points 10 **Level** 1

Prerequisite

300672.1 Mathematics 1A

Equivalent Units

200189 Concepts of Mathematics

Special Requirements

Students enrolled in 3621 Bachelor of Engineering degree course cannot enrol in this unit

.....

This level one hundred unit provides a solid foundation in the theory and applications of integral calculus, as well as some introductory work on linear algebra and infinite sequences and series. It is the second of two units developing aspects of calculus.

700025.1 Mathematics C (UWSCDip)

Credit Points 10 **Level** Z

Special Requirements

Students must be enrolled in UWS College.

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The Mathematics C unit is designed and written to prepare students for mathematical study at first year university level, specifically in the area of Engineering. It provides a comprehensive introduction to the study of calculus and its applications in the real world.

200237.1 Mathematics for Engineers 1

Credit Points 10 **Level** 1

Equivalent Units

14505 - Engineering Mathematics 1, 200195 - Mathematical Methods A, 200196 - Mathematical Methods B

Incompatible Units

200031 - Mathematics for Business, 200189 - Concepts of Mathematics

Special Requirements

HSC Mathematics at band 5 or 6.

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This unit is the first of two mathematics units to be completed by students enrolled in an engineering degree. It covers the following topics: Differential and integral calculus of a single variable, complex numbers, aspects of matrix algebra, bectors and some elementary statistics and probability theory.

700019.1 Mathematics for Engineers 1 (UWSC)

Credit Points 10 **Level** 1

Prerequisite

700025.1 Mathematics C (UWSCDip)

Equivalent Units

200237 - Mathematics for Engineers 1

Special Requirements

Students must be enrolled at UWS College.

.....

This unit is the first of two mathematics units to be completed by students enrolled in an engineering degree. It covers the following topics: Differential and integral calculus of a single variable, complex numbers, aspects of matrix algebra, vectors, and some elementary statistics and probability theory.

200238.1 Mathematics for Engineers 2

Credit Points 10 **Level** 1

Prerequisite

200237.1 Mathematics for Engineers 1

Equivalent Units

14506 - Engineering Mathematics 2

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This is a level 100 unit to be undertaken by students enrolled in an Engineering degree. It covers the following topics: Ordinary Differential Equations and Multivariable Calculus.

700022.1 Mathematics for Engineers 2 (UWSC)

Credit Points 10 **Level** 1

Prerequisite

700019.1 Mathematics for Engineers 1 (UWSC)

Equivalent Units

200238 - Mathematics for Engineers 2

Special Requirements

Students must be enrolled at UWS College.

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This is a level 100 unit to be undertaken by students enrolled in an Engineering Diploma. It covers the following topics: Ordinary Differential Equations and Multivariable Calculus.

200242.1 Mathematics for Engineers 3

Credit Points 10 **Level** 2

Assumed Knowledge

Successful completion of 200238 - Mathematics for Engineers 2 or 14506 - Engineering Mathematics 2.

Equivalent Units

200194 - Engineering Mathematics 3

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The unit covers the topics of Advanced Calculus including Vector Calculus, Complex Analysis, Fourier Series, Heat Wave Equations, Fourier Integrals and Transforms; Discrete Mathematics including logic, set theory, graphs and trees and Random Processes including mean correlation and covariance functions, ergodicity, ensemble averages, Gaussian processes and Rayleigh and Rice distribution.

200413.2 Mathematics Honours Thesis

Credit Points 40 **Level** 5

Special Requirements

Restriction to students enrolled in a Bachelors honours course. understanding and knowledge equivalent an undergraduate BSc (Mathematics) Degree or key program in Mathematics/Statistics is required. normally the student will have a grade point average > 5 unless a case can be made.

.....

The aim of this unit is to further develop the student's research and problem solving skills. The student is required to implement the research plan, complete a substantive piece of research in the field of Mathematics/Statistics, and to communicate the results of that work to an interested and technically literate audience. All projects will therefore contain at least two broad areas of assessment: the substantive work itself, and the oral and written communication of the work to others. All assessment components submitted in both of these areas are expected to be of a high professional standard. Students will present their research in the thesis. The thesis topic and structure will vary according to the area of interest of the student and the expertise of the supervisor. Throughout this unit regular planned consultations between the student and supervisor will occur. Students are expected to work to a schedule devised in consultation with their supervisor. The schedule will include set dates for the presentation of draft chapters for review by the supervisor.

300040.1 Mechanics of Materials

Credit Points 10 **Level** 2

Prerequisite

300463.1 Fundamentals of Mechanics

Equivalent Units

300039 - Mechanics and Materials

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This unit looks at how and why structural components including bars and beams deform and break. It concentrates on how these are affected by the geometry of the body and loading. Types of loadings considered include normal loads, torsional loads and bending loads. The main objective of the unit is to introduce students to the aspects of stress, strain and internal force development in the components and the methods to determine the deformation and deflections of the components. Energy methods and impact loadings are also considered.

300487.1 Mechatronic Design

Credit Points 10 **Level** 3

Assumed Knowledge

Understanding of statics and mechanics of materials.

Prerequisite

300040.1 Mechanics of Materials

Equivalent Units

300041 - Mechatronic Design 1, 300042 - Mechatronic Design 2

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The aim of the unit is to integrate the basic skills of mechanics, mechanical systems and automation in the practice of engineering design as applied to mechatronic devices and systems. The ability to perform detailed design analysis of such machine elements as bearings, brakes, clutches, belt drives and shaft and motor systems is the intended outcome of undertaking this unit and project based tasks will form part of the learning process and team work experience.

300233.1 Medical Microbiology

Credit Points 10 **Level** 3

Assumed Knowledge

A knowledge in microbiology equivalent to the successful completion of Microbiology 1.

Prerequisite

300300.1 Microbiology 1 AND **300321.1** Microbiology 2

Equivalent Units

J3814 - Medical Microbiology, MI308A - Medical Microbiology, 300749 - Medical Microbiology

.....

This unit is being replaced by unit code 300749 in 2010. This unit has a modern approach to the study of the interaction between the human host, micro-organisms and parasites. Students will embark on a journey into the world of pathogenic micro-organisms exploring the molecular mechanisms by which these override host defences leading to disease. Topics include: Non-specific and specific defences (immune system) of the human body. Host-parasite interaction and pathogenesis of disease. Types of infection and epidemiology. Infectious diseases of the human body systems and associated aetiological agents. This will be supported with laboratory experience representing modern laboratory diagnostic procedures including molecular biology for the identification of infectious disease agents and how this information is applied to epidemiology.

300749.1 Medical Microbiology

Credit Points 10 **Level** 3

Assumed Knowledge

A knowledge in microbiology equivalent to the successful completion of Microbiology 1.

Corequisite

300300.1 Microbiology 1 AND **300321.1** Microbiology 2

Equivalent Units

J3814 - Medical Microbiology, MI308A - Medical Microbiology, 300233 - Medical Microbiology

.....

This unit has a modern approach to the study of the interaction between the human host, micro-organisms and parasites. Students will embark on a journey into the world of pathogenic micro-organisms exploring the molecular mechanisms by which these override host defences leading to disease. Topics include: Non-specific and specific defences (immune system) of the human body. Host-parasite interaction and pathogenesis of disease. Types of infection and epidemiology. Infectious diseases of the human body systems and associated aetiological agents. This will be supported with laboratory experience representing modern laboratory diagnostic procedures including molecular biology for the identification of infectious disease agents and how this information is applied to epidemiology.

400813.1 Medical Research Project

Credit Points 60 **Level** 3

Assumed Knowledge

Knowledge from successful completion of years 1 and 2 of MB BS

Prerequisite

400737.1 Scientific Basis of Medicine 1 AND **400738.1** Health Practice 1 AND **400739.1** Scientific Basis of Medicine 2 AND **400740.1** Health Practice 2

Corequisite

300411.2 Research Methodology and Experimental Design OR **400148.1** Quantitative Research AND **400137.1** Introduction to Research for Health Sciences

Special Requirements

If any clinical work is to be undertaken as part of the research project, the students will need to continue to meet the same requirements for immunisation and child protection as for all other students in the medical course.

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This unit is the principal component in the Bachelor of Medical Research. It aims to give students, enrolled in the UWS MBBS, the opportunity to develop their critical thinking and gain a more detailed experience in medical research than is provided in the medical course. It consists of a research project in any area of medical research for which the School can provide suitable supervision. Students will study the relevant literature, develop and conduct the program of research with the assistance of their supervisor, take part in research seminars in their research group, and present the results as a dissertation.

400825.2 Medical Surgical Nursing 2 (Advanced)

Credit Points 10 **Level** 2

Assumed Knowledge

Completion of all Year One Bachelor of Nursing Units Completion of all Year Two Bachelor of Nursing (Advanced) Units Completion of all TCH-Autumn Year Two Bachelor of Nursing Units

Prerequisite

400749.1 Nursing and Health Breakdown OR **400776.1** Introduction to Nursing Practice

Corequisite

400758.1 Alterations in Breathing, Sexuality, Work/Leisure and Mobility

Incompatible Units

400757 - Medical-Surgical Nursing 2

Special Requirements

Students must be enrolled in course 4648 - Bachelor of Nursing (Advanced). To undertake this unit, students must comply with the following special requirements: completion of a Prohibited Persons Declaration; Criminal Record Check clearance; provide evidence of compliance with the occupational screening and immunisation policy of NSW Health; possess a current WorkCover Authority approved First Aid Certificate.

.....

This unit will elaborate on professional nursing concepts and practices that promote maintain and support people who are experiencing health breakdown affecting breathing, work/leisure, sexuality and mobility. This unit will enable the student to undertake an advanced health assessment and develop advanced clinical reasoning and decision making skills to link theory and practice.

400753.3 Medical-Surgical Nursing 1

Credit Points 10 **Level** 2

Assumed Knowledge

Content and achievement of learning outcomes derived from Year One nursing units.

Prerequisite

400749.1 Nursing and Health Breakdown OR **400776.1** Introduction to Nursing Practice

Corequisite

400814.1 Alterations in Nutrition, Elimination and Sexuality

Incompatible Units

400058 - Nursing Therapeutics 6, 400059 - Nursing Therapeutics 7, 400642 - Medical-Surgical Nursing Therapeutics

Special Requirements

Restrictions on clinical practicum placements (students must be enrolled in the Bachelor of Nursing and have met Special Requirements), safety and professional issues dealing with public. Special Requirements are those stipulated by the NSW Health and UWS. At present these include: Prohibited Persons Employment Declaration (PPED), Criminal Record Check (CRC), Adult Health Immunisation, Workcover accredited Senior First Aid Certificate.

.....

This unit will elaborate on professional nursing concepts and practices that promote, maintain and support people who are experiencing health breakdown affecting eating, drinking, nutrition and elimination.

400757.3 Medical-Surgical Nursing 2

Credit Points 10 **Level** 2

Assumed Knowledge

Content and achievement of learning outcomes related to Year One nursing units and MSN1 and ANE units from Year 2 Autumn.

Prerequisite

400749.1 Nursing and Health Breakdown OR **400776.1** Introduction to Nursing Practice

Corequisite

400815.1 Alterations in Breathing, Work/Leisure and Mobility

Incompatible Units

400055 Nursing Therapeutics 4

Special Requirements

Special Requirements are those stipulated by the NSW Health and UWS. At present these include: • Prohibited Persons Employment Declaration (PPED) • Criminal Record Check (CRC) • Adult Health Immunisation • Workcover accredited Senior First Aid Certificate

.....

This unit version will replace version 2 from 2010. This unit will elaborate on professional nursing concepts and practices that promote, maintain and support people who are experiencing health breakdown affecting breathing, work/leisure, sexuality and mobility.

300550.1 Medicinal Chemistry

Credit Points 10 **Level** 1

Equivalent Units

300225 - Chemistry 2, J1574 - Organic Chemistry 1

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Students studying at Hawkesbury or Parramatta campus should refer to 300225 - Chemistry 2. This unit uses medicinal chemistry to continue the development of students' understanding of the basic foundations of chemistry begun in Principles of Chemistry. The unit focuses on introductory chemical and pharmacological kinetics, introduces coordination compounds such as haemoglobin, and goes on to an in-depth treatment of the structure, reactivity and nomenclature of the principal organic functional groups. These are discussed in the context of their role in life, medicine and disease. The unit provides a necessary foundation for subsequent studies in chemistry, biochemistry, and related areas.

400759.3 Mental Health Nursing 1

Credit Points 10 **Level** 2

Assumed Knowledge

Content and achievement of learning outcomes for Year One nursing units.

Prerequisite

400749.1 Nursing and Health Breakdown OR **400776.1** Introduction to Nursing Practice

Equivalent Units

400054.1 Nursing Therapeutics 3

Special Requirements

Special Requirements are those stipulated by the NSW Health and UWS. At present these include: • Prohibited Persons Employment Declaration (PPED) • Criminal Record Check (CRC) • Adult Health Immunisation • Workcover accredited Senior First Aid Certificate

.....

This unit will extend the student's understanding of the relationships between stress, adaptation, mental health and the person's capacity to function in everyday life and the implications for professional nursing practice.

400762.2 Mental Health Nursing 2

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge and skills relating to 400759 - Mental Health Nursing 1.

Prerequisite

400759.1 Mental Health Nursing 1

Equivalent Units

400066 - Nursing Therapeutics 11

Special Requirements

Special Requirements are those stipulated by the NSW Health and UWS. At present these include: Prohibited Persons Employment Declaration (PPED), Criminal Record Check (CRC); Adult Health Immunisation and Workcover accredited Senior First Aid Certificate.

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This unit will elaborate the mechanisms of health breakdown and their application to professional nursing practice in supporting people who are affected by serious mental health breakdown.

300300.1 Microbiology 1

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge of introductory biology, including an understanding of the diversity of living organisms and basic concepts of cell structure and function.

Prerequisite

300221.1 Biology 1 OR **300222.1** Biology 2 OR **300539.1** Biodiversity OR **300543.1** Cell Biology

Equivalent Units

14434 - Microbiology 1, BI106A - Biological Sciences, J2029 - Basic Microbiology, MI201A - Microbiology 2.1 (V1)

Incompatible Units

300331 - General Microbiology

.....

Microorganisms are important in all aspects of our lives. In this unit students will explore the diversity of microorganisms and their significance in the environment, in foods and industry as well as in health and disease. Students will be introduced to the structure, reproduction, classification, cultivation and enumeration of bacteria, viruses and fungi. The conditions required for growth and survival of microorganisms will be studied as well as physical and chemical methods of control. Students will conduct laboratory exercises designed to develop their skills in culturing and observing microorganisms.

300321.1 Microbiology 2

Credit Points 10 **Level** 2

Assumed Knowledge

For safety reasons it is essential that students understand and are competent in the practice of aseptic technique in basic microbiological techniques. These skills are developed in Microbiology 1 and General Microbiology. These units, together with Biochemistry 1, also provide the foundation knowledge necessary for studying the metabolic diversity of microorganisms, molecular systematics and microbial genetics, the major themes of Microbiology 2. Relevant topics in Biochemistry 1 or General Biochemistry include structure and function of enzymes, protein synthesis, structure and function of nucleic acids. The introductory microbiology units provide essential knowledge of the major groups of microorganisms and the conditions required for their growth and survival.

Corequisite

300331.1 General Microbiology OR **300300.1** Microbiology 1 AND **300219.1** Biochemistry 1 OR **300227.1** General Biochemistry OR **300555.1** Proteins and Genes

Equivalent Units

14443 - Microbiology 2, J2028 - Microbial Physiology and Genetics, MI202A - Microbiology 2.2

.....

This unit discusses the origins of genetic variation in prokaryotes and explores the structure and metabolic diversity of microorganisms from a variety of habitats including extreme environments. Studies of the biochemistry of prokaryotes focus on metabolic strategies for energy generation and growth in various natural environments. Students are introduced to the applications of microbial metabolism in food, wine and other industries. The principles of classification and identification of bacteria and yeasts are developed. This includes an introduction to molecular systematics and its impact on the classification of living organisms and in areas such as molecular diagnostics and epidemiology. The unit also addresses the principles and applications of recombinant DNA techniques in biotechnology and in the study of microbial physiology

and genetics. Laboratory classes introduce students to techniques used to study microbial identification, physiology and genetics.

300044.1 Microcontrollers and PLCs

Credit Points 10 **Level** 2

Prerequisite

300025.1 Electronics

Equivalent Units

86402 - Microprocessor Applications in Mechanical Engineering, 89025 - Computers in Real Time Control

.....

This unit introduces students to the study of specialized, dedicated and embedded control oriented devices through the in depth study of one of the members of the 8051 family of microcontrollers and the Omron programmable logic controller (PLC) and associated pneumatic cylinders as actuators. The unit introduces the hardware and software details needed to apply microcontrollers and PLCs to general situations in computer, electrical and mechanical engineering. Students write assembler code and compose ladder diagrams to achieve control along with the physical interfacing needed to external devices. This unit integrates knowledge, acquired in other units, of physical devices and processes through microcontroller and PLC applications thus enhancing employability.

300076.1 Microprocessor Systems

Credit Points 10 **Level** 2

Assumed Knowledge

Competence in the following knowledge obtained in 300027 - Engineering Computing: Data manipulation using a spreadsheet application; Basic structured programming techniques; Apply algorithms as a methodology for solving engineering problems.

Prerequisite

300018.1 Digital Systems 1

Equivalent Units

84137 - Microprocessor Systems

.....

This unit introduces students to the internal structure of microprocessors and its fundamental operations. Topics include assembly language programming, interrupt processing, CPU functions, memory organisation and peripheral programming. Intel 8088 microprocessor will be discussed in great detail. Embedded processor will also be covered.

101352.1 Mind, Body and Emotion

Credit Points 10 **Level** 2

Assumed Knowledge

40 credit points in social sciences, humanities, health or psychology.

Equivalent Units

25733 - Mind, Body and Emotion, 101723 - Mind, Body and Emotion

.....

This unit introduces students to theories and methods in the study of the mind, body and emotions in social science. It employs the study of multi-disciplinary work from psychology, sociology and philosophy as ways of understanding the links, relationship and interactions between the self and society in illness, disability and health. This unit has special relevance for health and community workers, assisting them to develop their understanding of the dynamics and politics of health, illness and care.

300043.1 Mobile Robotics

Credit Points 10 **Level** 4

Prerequisite

300056.1 Robotics

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This unit introduces the basic concepts involved in mobile robotics. The areas of localisation, map building and path planning of mobile robots are introduced. Various sensors and their applications in mobile robotics are also introduced.

300043.2 Mobile Robotics

Credit Points 10 **Level** 4

Prerequisite

300463.1 Fundamentals of Mechanics

.....

To develop an understanding of the basic concepts involved in Mobile Robotics. The areas of mobile robot mechanics, localisation, map building and path planning of mobile robots will be introduced. Various sensors and their applications in mobile robotics are also to be introduced.

300551.1 Molecular Basis of Disease

Credit Points 10 **Level** 3

Assumed Knowledge

The content of Human Molecular Biology, i.e. knowledge of the molecular biology of eukaryotic cells and gene regulation at an advanced level, and processes and practical applications of DNA technology including DNA manipulation using restriction enzymes, PCR, DNA fingerprinting, Northern blotting, cloning vectors, DNA libraries and genetic engineering in different types of eukaryotic cell. Introductory functional genomics and bioinformatics.

Prerequisite

300555.1 Proteins and Genes OR **300219.1** Biochemistry 1

.....

This unit builds on the molecular biology studied in second and third year, equipping students with detailed knowledge of the molecular basis of disease. Studying the molecular basis integrates many previously learned scientific principles in molecular biology and functional genomics into the context of disease.

300234.1 Molecular Biology

Credit Points 10 **Level** 3

Assumed Knowledge

Yes, knowledge of DNA, gene and chromosome structure in bacteria and eukaryotes; the basic events in bacterial transcription, including the structure and role of bacterial RNA polymerase; the differences between transcription in bacteria and eukaryotes; post-transcriptional events in eukaryotes and their purpose; the basic events in bacterial translation and how these differ in eukaryotes; protein structure and conformation, and the importance of post-translational modifications for protein function.

Prerequisite

300219.1 Biochemistry 1 OR **300555.1** Proteins and Genes

Equivalent Units

14439 - Cell and MolecularBiology, 300549 - Human Molecular Biology, B1305A - Molecular Biology, J3678 - Molecular Genetics

.....

Students studying at Campbelltown campus should refer to 300549 - Human Molecular Biology. This unit studies gene regulation at an advanced level, leading into the processes and practical applications of DNA technology. Students gain a thorough grounding in major techniques such as restriction mapping, DNA sequencing, PCR, DNA fingerprinting, southern blotting and gene cloning. Cloning vectors, DNA libraries, genetic engineering in different types of cells and organisms and functional genomics are studied. Students are introduced to bioinformatics and issues in biosafety and ethics relating to gene technology.

300552.1 Molecular Biology of the Immune System

Credit Points 10 **Level** 3

Assumed Knowledge

A sound knowledge of cell structure, protein structure, gene expression, protein synthesis, protein secretion and protein degradation. Some understanding of cell signalling pathways would be an advantage.

Prerequisite

300555.1 Proteins and Genes OR **300219.1** Biochemistry 1

Equivalent Units

300757 - Molecular Biology of the Immune System

Incompatible Units

300223 - Cell Signalling and Molecular Immunology, J3830 - Immunology and Cell Signalling

.....

The immune system relies on a complex interplay between cells, receptors and signalling molecules for its effective operation. Antibody- and cell-mediated immune responses will be examined from a molecular and biochemical perspective. Topics include B- and T-cell receptor gene expression, antibody structure, function, maturation; MHC genes and proteins; differentiation and activation of B and T cells; antigen processing and presentation; the roles of cytokines. The relevance of this knowledge for understanding disorders of the immune system will be emphasised throughout. Medical and diagnostic applications of hybridoma technology, antibody engineering and advances in vaccine development will be discussed. The laboratory course will develop technical and interpretative skills in relevant techniques.

300757.1 Molecular Biology of the Immune System

Credit Points 10 **Level** 3

Assumed Knowledge

A sound knowledge of cell structure, protein structure, gene expression, protein synthesis, protein secretion and protein degradation. Some understanding of cell signalling pathways would be an advantage.

Prerequisite

300219.1 Biochemistry 1 OR **300555.1** Proteins and Genes

Equivalent Units

300552 - Molecular Biology of the Immune System

Incompatible Units

300223 - Cell Signalling and Molecular Immunology, J3830 - Immunology and Cell Signalling

.....

The immune system relies on a complex interplay between cells, receptors and signalling molecules for its effective operation. Antibody- and cell-mediated immune responses will be examined from a molecular and biochemical perspective. Topics include B- and T-cell receptor gene expression, antibody structure, function, maturation; MHC genes and proteins; differentiation and activation of B and T cells; antigen processing and presentation; the roles of cytokines. The relevance of this knowledge for understanding disorders of the immune system will be emphasised throughout. Medical and diagnostic applications of hybridoma technology, antibody engineering and advances in vaccine development will be discussed. The laboratory course will develop technical and interpretative skills in relevant techniques.

300475.1 Molecular Pharmacokinetics

Credit Points 10 **Level** 3

Assumed Knowledge

Medicinal Chemistry

Prerequisite

300236.1 Physical Chemistry 2 OR **300540.1** Biomolecular Dynamics

Equivalent Units

300303 - Physical Chemistry 3

.....

This unit investigates the mechanisms and pathways of degradation of introduced compounds within the body and of their removal from the body; the relationship between chemical structure and stability of compounds within the body, including quantitative structure-stability relationships; the physical, metabolic and chemical stability within the body of representatives of each of the major types of drug class, relating this stability to molecular structure; the

influence of the stability of drug compounds within the body upon the choice of drug delivery system used.

300557.1 Molecular Spectroscopy

Credit Points 10 **Level** 3

Prerequisite

300230.1 Inorganic Chemistry 2 OR **300545.1** Coordination Chemistry OR **300301.1** Organic Chemistry 2 OR **300553.1** Molecules of Life: Synthesis and Reactivity

Equivalent Units

300216 - Advanced Spectroscopy

.....

This unit builds upon an understanding of the fundamental physical processes involved in the interaction of electromagnetic radiation of various energies with matter, and develops into analysis of spectroscopic data for structure elucidation, as an analytical technique and for monitoring chemical and biochemical processes. The relevance of these processes and techniques to all other areas of science, particularly chemistry and biology, is emphasised. Spectroscopic methods include advanced NMR spectroscopy, ESR spectroscopy, electronic and visible spectroscopy and mass spectrometry. Whilst some basic spectroscopy is taught in a number of other chemistry units, this subject goes to a substantially deeper level.

300553.1 Molecules of Life: Synthesis and Reactivity

Credit Points 10 **Level** 2

Prerequisite

300550.1 Medicinal Chemistry OR **300225.1** Chemistry 2

Equivalent Units

300301 - Organic Chemistry 2, J3830 - Immunology and Cell Signalling

.....

Students studying at Hawkesbury or Parramatta campus should refer to 300301 - Organic Chemistry 2. This unit introduces organic chemistry from a biological and pharmaceutical perspective, emphasising the structure & reactivity of biological molecules as organic molecules and functional group manipulation as a tool for drug design and synthesis. Appropriate practical skills to achieve this are learnt in the associated practical work.

100679.1 Motor Control and Learning

Credit Points 10 **Level** 2

Assumed Knowledge

Students will possess a working knowledge equivalent to the content of Human Meical Sciences 1, 2 and 3.

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This unit will be replaced by 400886 - Motor Control and Skill Acquisition from 2011. Motor Control and Learning is an investigation of the physiological and psychological processes involved in both the control and the learning of movement. As such, it considers the control mechanisms which are innate to the learner, how these mechanisms change by virtue of both maturation and experience, and how the latter type of changes may be facilitated by manipulation of the learning environment.

101428.1 Multiliteracies

Credit Points 10 **Level** 1

Equivalent Units

101118 - Multiliteracies for Learning

.....

This unit will explore broad perspectives on literacy and literacy learning that reflect changing social, economic and political contexts and the impact of technologies and globalisation on literacy practices. The unit will examine a range of issues in literacy, including indigenous languages and dialects, bilingual literacies, issues of language loss and retention, gender issues, and cultural literacies. The unit will also focus on processes of speaking, listening, reading and writing and will address academic discourse, information literacy and critical literacy.

300046.1 Multimedia Signal Processing

Credit Points 10 **Level** 4

Prerequisite

300069.1 Digital Signal Processing

Equivalent Units

84492 - Honours/Pass Subject 1

.....

This unit introduces students to the digital processing of speech and image signals, and to the latest developments in the area of multimedia signal processing. Topics include speech generation, analysis, synthesis, speech and speaker identification, image processing techniques, image and video compression and standards.

300590.1 Nanochemistry

Credit Points 10 **Level** 2

Assumed Knowledge

An understanding of the content of the units Nanotechnology 1 and Nanotechnology 2 or equivalent.

Prerequisite

300224.1 Chemistry 1

Equivalent Units

300416 - Nanopowders and Nanomaterials

.....

The unit covers basic theory of surface chemistry, latest technologies of surface depositions and industrial and commercial applications of nanomaterials and nanopowders. Upon successful completion, the students will achieve an in-depth understanding of techniques of preparation of nanomaterials and nanopowders that includes plasma arching, chemical vapour deposition, electrodeposition, sol-gel synthesis, ball milling and the use of natural particles. Technical aspects of process control on the microstructure and properties of coatings will discussed. Case studies of applications of nanopowders and nanomaterials such as biomedical implants, insulators, high

power magnets, molecular sieves, supercomputers, jet engines and other industrial applications will be pursued.

300705.1 Nanotechnology

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Physics (2 unit) and HSC Chemistry (2 unit) or HSC Multi-strand Science (4 unit) or equivalent.

Equivalent Units

300417 - Nanotechnology 1, 300418 - Nanotechnology 2

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This unit provides a broad introduction to nanoscience, the current status of nanotechnology and their applications. It introduces main areas that are central to understanding the importance of nanoscale applications and to study the connection between the underlying nanoscience of various nanotechnology devices. Emphasis will be placed to reflect the true interdisciplinary nature that encompasses a broad understanding of basic sciences intertwined with medical, engineering ,and information sciences pertinent to nanotechnology.

300143.2 Network Security

Credit Points 10 **Level** 3

Assumed Knowledge

Good understanding of the principles of information security, and computer networks and internets.

Prerequisite

300094.2 Computer Networking Fundamentals OR **300565.1** Computer Networking

.....

This unit is concerned with the protection of information transferred over computer networks. It includes discussion of techniques for securing data transported over local and wide area networks. At the conclusion of the unit students will have a good understanding of the practical aspects of securing a computer network against internal and external attacks.

300575.1 Networked Systems Design

Credit Points 10 **Level** 3

Assumed Knowledge

Knowledge equivalent to that gained in the prerequisite unit

Prerequisite

300095.1 Computer Networks and Internets

Equivalent Units

300088 - Broadband Networking

.....

Students successfully completing this unit will gain the necessary design skills and knowledge required to build and configure a complex network. This unit builds on the work of Networking Fundamentals and Computer Networks and Internets. The unit also provides the student with an opportunity to develop problemsolving techniques and decision-making skills to resolve networking issues.

Students completing this unit and its prerequisites should now be prepared to attempt world recognized network industry certification.

300576.1 Networking Workshop

Credit Points 10 **Level** 2

Assumed Knowledge

• List, discuss and compare the elements of information coding and signal transmission, • List, describe, and explain the elements and functional relationships of communications hardware and software, • Identify, locate, distinguish, and describe the individual hardware components of a personal computer (PC) and explain their purpose, functions and operations, • Install PC components, devices and peripherals in accordance with installation procedures and operational standards.

Prerequisite

300565.1 Computer Networking AND **300150.2** PC Workshop

Equivalent Units

300138 - LAN Workshop

.....

This unit covers in depth the basics of networking and provides students with the knowledge and skills necessary to install, test, tune, customise, repair and maintain networking hardware and software necessary to create a Local Area Network (LAN). Students also learn how to administer a LAN by setting up user accounts, access privileges, security procedures, and back-up/recovery procedures.

300754.1 Neuroanatomy

Credit Points 10 **Level** 3

Assumed Knowledge

The outcomes of: 300221 Biology 1; 300224 Chemistry 1; 300319 Introduction to Anatomy and Histology; 300320 Introduction to Human Physiology or equivalent units.

Equivalent Units

E2321 - Human Biological Sciences V: Neuroanatomy, 300322 - Neuroanatomy

Special Requirements

Students must be enrolled in courses 3577 Bachelor of Medical Science, 3517 Bachelor of Science (Biological Science) and 0J142 Bachelor of Medical Science (Retired).

.....

This unit builds on the human anatomy and physiology studied in first and second year, equipping students with detailed knowledge of functional neuroanatomy, with particular emphasis on the central nervous system. Cadaver specimens are used to facilitate the learning of spatial relationships between structures.

300625.1 Noise Assessment

Credit Points 10 **Level** 2

Equivalent Units

EH205A - Noise Assessment and Control

.....

This unit is designed to provide the practical and theoretical information to enable the assessment of environmental and occupational noise problems and the implementation of noise controls. To control noise, the noise (or noise potential) must first be determined to ascertain if a problem exists or is likely to arise. If there is a problem, the magnitude of the problem must be determined and a solution devised. These issues are discussed starting with first principles: the nature of sound, both physical and psychological. You will look at the legislation that controls noise, at noise meters and their operation and use, at the various ways of controlling noise at its source, along its pathway or at the receiver. You are introduced to the litigation process, as often the investigating officer will be required to give evidence in court. You will look at how to plan for noise control and the various issues — physical, social/cultural, political and legal — that influence the choices made. Transportation noise is covered and finally you will look at the important issue of hearing conservation. The overall objective of writing a noise impact report/ statement and the accompanying legal briefing notes will draw together the threads of the whole unit.

200029.1 Numerical Analysis

Credit Points 10 **Level** 2

Assumed Knowledge

200189 - Concepts of Mathematics

Equivalent Units

J2788 - Numerical Analysis; 14701 - Numerical Methods and Modelling

.....

This unit covers a substantial range of computational techniques in formulating and solving mathematical, scientific and engineering problems. Topics include: algorithmic approaches to solving nonlinear equations; systems of linear equations; differential equations; polynomial interpolation; numerical differentiation and integration; and curve fitting to approximate functions.

300488.1 Numerical Methods in Engineering

Credit Points 10 **Level** 3

Prerequisite

200238.1 Mathematics for Engineers 2 AND **85010.1** Structural Analysis AND **85012.1** Soil Engineering

Equivalent Units

85019.1 - Civil & Environmental Engineering Pass/Honours Elective 1

.....

The finite element method is a powerful tool for the numerical analysis of a wide range of engineering problems. The objective of this unit is to introduce the basic and fundamental principles of the finite element techniques by primarily focusing on its application in the area of structural and soil mechanics.

300488.2 Numerical Methods in Engineering

Credit Points 10 **Level** 3

Equivalent Units

85019 - Civil/Environmental Engineering Pass/Hons Elective 1

Special Requirements

Pre-requisite requirements: 85006 - Introduction to Structural Engineering, 85012 - Soil Engineering, 200238 - Mathematics for Engineers 2

.....

The finite element method is a powerful numerical tool for analysing a wide range of engineering problems. The objective of this unit is to introduce the basic and fundamental principles of the finite element techniques by primarily focusing on their applications in the area of structural, solid and soil mechanics.

400749.2 Nursing and Health Breakdown

Credit Points 10 **Level** 1

Assumed Knowledge

Year One Autumn units

Corequisite

400750.1 Introduction to Health Breakdown

Equivalent Units

400052 - Nursing Therapeutics 2

Incompatible Units

400640 - Foundations of Nursing Therapeutics, 400776 - Introduction to Nursing

Special Requirements

Students must be enrolled in the Bachelor of Nursing to enroll in this unit. Special Requirements are those stipulated by the NSW Health and UWS. At present these include: Prohibited Employment Declaration (PED), Criminal Record Check (CRC); Adult Health Immunisation and Workcover accredited Senior First Aid Certificate.

.....

This unit version replaces version 1 from 2010. This unit introduces students to professional nursing concepts and practices that promote, maintain and support people who are affected by health breakdown.

400751.2 Nursing and Healthy Communities

Credit Points 10 **Level** 1

Assumed Knowledge

400747 - Behavioural Foundations of Nursing Practice

Incompatible Units

400053 - Nursing Context 3, 400050 - Nursing Science 3

.....

This unit introduces the student to psychosocial concepts and principles that promote and sustain the health of communities and informs professional nursing practice.

400823.2 Nursing and the Older Person

Credit Points 10 **Level** 3

Incompatible Units

400767 - Family Health Care: Older Adult Nursing, 400644 - Gerontic Practice

Special Requirements

Students must be enrolled in the Bachelor of Nursing Studies to enrol in this unit.

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This unit enables students to explore the concept of ageing, and the nurse's role in promoting the health, and therefore, the potential of older people. In the Australian health care context nurses have the opportunity to be in the forefront of health care provision for the older person. This opportunity enables nurses to be therapeutically involved in the lives of older people by working with them, and other groups to facilitate healthy ageing. Nurses are also able to promote positive attitudes towards ageing and older people.

400745.2 Nursing for Health and Wellbeing

Credit Points 10 **Level** 1

Equivalent Units

400048 - Nursing Therapeutics 1

Special Requirements

Students must be enrolled in course 4642 Bachelor of Nursing to enroll in this unit.

.....

This unit introduces the student to nursing concepts, principles and skills that identify, promote, maintain and support health and wellbeing across the lifespan.

400204.2 Nursing Honours Thesis (Part-time)

Credit Points 60 **Level** 5

Assumed Knowledge

A basic knowledge of research methods at undergraduate leve or equivalent is required.

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This unit aims to provide an opportunity for students to plan and implement a research project related to nursing which results in the production of a thesis. In consultation with an academic supervisor, the student will select a topic, conduct a literature review, design a research study, and report the findings and their implications. Attendance and participation at research seminars/colloquia is expected.

400202.2 Nursing Honours Thesis A (Full-time)

Credit Points 20 **Level** 5

Assumed Knowledge

A basic knowledge of research methods at undergraduate leve or equivalent is required.

.....

This unit aims to provide an opportunity for students to plan and implement a research project related to nursing which results in the production of a thesis. In consultation with an academic supervisor, the student will select a topic, conduct a literature review, design a research study, and report the findings and their implications. Attendance and participation at research seminars/colloquia is expected.

400203.2 Nursing Honours Thesis B (Full-time)

Credit Points 40 **Level** 5

Assumed Knowledge

A basic knowledge of research methods at undergraduate leve or equivalent is required.

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This unit aims to provide an opportunity for students to plan and implement a research project related to nursing which results in the production of a thesis. In consultation with an academic supervisor, the student will select a topic, conduct a literature review, design a research study, and report the findings and their implications. Attendance and participation at research seminars/colloquia is expected.

300651.1 Nutrition and Community Health

Credit Points 10 **Level** 3

Equivalent Units

NT304A - Nutrition and Community Health (V1)

.....

This unit aims to develop an understanding of the inter relationship between nutrition and health in the Australian community using anthropological approaches and to provide the student with a sound foundation in nutritional anthropology in order that they may systematically analyse nutritional problems associated with: world food issues; minority (ethnic and/or Koori) groups within Australia; disorders of affluence (such as obesity, cancer, diabetes and cardiovascular disease); current nutrition issues in the community.

300649.1 Nutrition and Health 1

Credit Points 10 **Level** 2

Assumed Knowledge

Sound understanding of undergraduate Level 1 chemistry and biology.

Equivalent Units

NT201A - Nutrition and Health 2.1

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This unit presents the basic principles and concepts of human nutrition including nutrient requirements, functions, deficiency symptoms and the effects of excess as well as energy balance and weight control. Macronutrients involved with energy metabolism. In addition, all vitamins and essential minerals are covered. Specific topics include requirements, functions and the effects of excess and deficiency. Energy balance and weight control are also covered.

300650.1 Nutrition and Health 2

Credit Points 10 **Level** 2

Prerequisite

300649.1 Nutrition and Health 1

Equivalent Units

NT202A - Nutrition and Health 2.2

.....

This unit applies the basic concepts of human nutrition to the various stages of the life span (infant to adulthood) as well as examining the development of Australian dietary practices and diet related disorders. This unit provides the student with adequate and reliable information so that they make informed decisions with regard to nutritionally critical moments of the life span as well as new or emerging nutrition opinion or fact.

300652.1 Nutrition and Health Biochemistry

Credit Points 10 **Level** 3

Assumed Knowledge

Good understanding of basic biochemistry with an emphasis on metabolic pathways.

Prerequisite

300227.1 General Biochemistry OR **300219.1** Biochemistry 1 OR **300555.1** Proteins and Genes OR **300658.1** Endocrinology and Metabolism

Equivalent Units

NT306A - Nutritional Biochemistry

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This unit builds upon and integrates knowledge gained in basic biochemistry, human physiology and nutrition. It applies to metabolism from the cellular level to the whole human body emphasizing the utilisation of macronutrients for energy, interrelationships between metabolic pathways and nutritional disorders and diseases that affect the health of individuals and populations.

400780.2 Nutrition, Physical Activity and Mental Health

Credit Points 10 **Level** 1

Equivalent Units

400892 - Nutrition, Physical Activity, Fitness and Health

Special Requirements

Students should be aware that it is a requirement of this unit to satisfactorily complete a child protection awareness training program and attain a 3-year, work cover-approved senior first aid qualification within the time-frame of this unit.

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Australian Society is currently facing critical challenges in the areas of mental health, nutrition and physical activity. This unit examines the interdependence between these areas, and how the personal and sociocultural health issues can be addressed in a pro-active, holistic and sensitive manner. Completion of a child protection awareness training program and senior first aid qualification is required and will be at student's own expense, in own time.

300144.2 Object Oriented Analysis

Credit Points 10 **Level** 2

Assumed Knowledge

Should have knowledge similar to the unit 300131 - Introduction to Analysis and Design - general understanding of what an information system is and how information systems development is undertaken.

Equivalent Units

14935 - Systems Analysis 2, D2783 - Systems Analysis and Design 2, J2783 - Systems Analysis and Design 2

.....

Analysing and modeling requirements using the object-oriented (OO) approach is the core strength of this unit. The Unified Modifying Language (version 2.0) is used as a modeling standard for creating OO models in the problem space. This unit consolidates and extends the knowledge gained by students in Introduction to Analysis and Design unit and applies it to practical OO analysis work through a case study.

700039.1 Object Oriented Analysis (UWSC)

Credit Points 10 **Level** 2

Equivalent Units

14924, 48525, 61231 - Systems Analysis 1, 14998 - Systems Analysis 1A, 14935, 48526, 61232 - Systems Analysis 2

Special Requirements

Students must be enrolled at UWS College.

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This unit teaches in detail how to conduct business analysis and modeling of requirements using the object-oriented approach. It builds on the knowledge gained by students in Systems Analysis and Design unit. This unit uses the OMGs standard Unified Modeling Language version 2.0 (UML 2.0).

400176.1 Occupation and Ageing

Credit Points 10 **Level** 5

Incompatible Units

E2043 - Occupational Therapy 3 (Unit 3): Older Adult, E2045 - Lifespan Development

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The process of ageing will be examined critically using the biopsychosocial model. Students will use research evidence to prepare occupational therapy intervention for older people and their families that promotes quality of life and maximum social participation. Students will reflect on their own attitudes towards ageing and how social stereotypes of older people must be challenged to promote a positive view of this stage of life.

400169.1 Occupation and Mental Health

Credit Points 10 **Level** 3

Incompatible Units

E2046 - Neurology and Clinical Psychiatry, E2047 - Occupational Therapy 4.

.....

This unit provides an understanding of the aetiology, signs, symptoms and prognosis of psychiatric conditions commonly encountered by occupational therapists. Mental health policies, strategies and consumer issues are examined in relation to the management of mental illness in the community. Occupational therapy theory, assessments, interventions and outcomes related to psychosocial practice are incorporated in the unit to provide a foundation for occupational therapy practice in mental health settings.

400171.1 Occupation and Neurology

Credit Points 10 **Level** 3

Incompatible Units

E2047 - Occupational Therapy 4: Unit 1 Neurology.

.....

This unit prepares occupational therapy students to work in a variety of settings with clients who have a neurological condition, such as a stroke or traumatic brain injury. Students learn how to analyse, measure and retrain impairments such as reduced grasp, mobility, sensation, memory, or motor planning. These impairments commonly affect a client's ability to participate in chosen life roles and activities, and integrate back into the community. Aspects of carers' roles will also be examined. Evidence will be discussed pertaining to occupational therapy assessments and interventions. Traditional, as well as more recently established rehabilitation interventions will be examined.

400170.1 Occupation and Social Participation

Credit Points 10 **Level** 3

Equivalent Units

E3026 - Occupational Therapy 5

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This unit will be replaced by 400916 - Occupation Justice from 2013. This unit critically examines practice in the community with a focus on social inclusion. Life experiences of people with disabilities are explored. Ideologies of Normalisation and Social Role Valorisation, which currently form the basis of Disability Legislation and Community Service Standards, are discussed. Rationales for de-institutionalisation and practice in the community are critically appraised. Varied perspectives of disability are examined and applied. Contentious issues such as duty of care, dignity of risk, choice-making, rights and negligence, social dimensions of participation, are critiqued against legal, ethical and personal perspectives. This unit assists students develop empathy, critical thinking and reflection skills.

400165.1 Occupation and the Environment

Credit Points 10 **Level** 2

Incompatible Units

E1311 - Occuptational Therapy 2 (Unit 2)

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Students will demonstrate skills in the analysis and modification of the environment using principles of ergonomics and appropriate Australian standards in building design. The ICDH-2 will provide the context for assessment and modification of the environment to enable individuals with impairments to overcome activity limitations or restrictions in participation.

400733.1 Occupational Analysis

Credit Points 10 **Level** 1

Special Requirements

Enrolment is restricted to students enrolled in course codes 4520 OR 4521. This is a specialist professional unit for occupational therapy practice so is not suited to students from other programs.

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The ability to analyse human occupation including tasks and activities is a core component of occupational therapy practice. This unit provides the students with an understanding of the role of activities in a person's life. Students will develop skills in task and activity analysis and an understanding of assessment related to specific performance components of activity. The ICDH-2 will provide the context for activity analysis. Students will gain an understanding of how the modification of activities can enable individuals with impairments to overcome activity limitations or restrictions in participation.

400161.1 Occupational Therapy Clinical Practice 1

Credit Points 10 **Level** 1

Equivalent Units

E1311 - Occupational Therapy 2 (Unit 4), 400907 - Occupational Therapy Practice 1

Special Requirements

To undertake this unit, students must comply with the following special requirements: Completion of a Prohibited Persons Declaration; Criminal Record Check Clearance; Provide evidence of compliance with the occupational screening and immunisation policy of NSW Health; Students must possess a current, Workcover Authority approved First Aid Certificate

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This unit aim introduces students to the principles and practices of clinical and community fieldwork. Students will be provided with learning opportunities through a variety of experiential and self-directed learning exercises that will begin to develop their clinical skills and competence in professional practice. Professional competencies addressed include manual handling, assisted mobility, infection control, time management, goal setting, professional communication, professional and ethical

behaviour and writing learning contracts. A two week block placement is conducted at the end of the teaching period.

400167.1 Occupational Therapy Clinical Practice 2

Credit Points 10 **Level** 2

Prerequisite

400161.1 Occupational Therapy Clinical Practice 1

Equivalent Units

E3027 - Clinical Placement 2

Special Requirements

To undertake this unit, students must comply with the following special requirements: Completion of a Prohibited Persons Declaration; Criminal Record Check Clearance; Provide evidence of compliance with the occupational screening and immunisation policy of NSW Health; Students must possess a current, Workcover Authority approved First Aid Certificate

.....

This unit provides opportunities for students to implement skills and integrate theory with practice. The placement will allow students to work for a 2 week period with occupational therapists in one of the many settings where therapists currently practice. The project involves participation in a community based activity that contributes benefits a community based group. The project may be conducted in an intensive 2 week period or over a period of several weeks / months.

400174.1 Occupational Therapy Clinical Practice 3a

Credit Points 10 **Level** 3

Assumed Knowledge

Client and student safety skills attained in previous clinical units are required before attempting this unit.

Prerequisite

400167.1 Occupational Therapy Clinical Practice 2

Incompatible Units

E3028 - Clinical Placement 3

Special Requirements

To undertake this unit, students must comply with the following special requirements: Completion of a Prohibited Employment Declaration; Criminal Record Check Clearance; Provide evidence of compliance with the occupational screening and immunisation policy of NSW Health; Students must possess a current, Workcover Authority approved First Aid Certificate

.....

This unit is being replaced by 400910 Occupational Therapy Practice 3 in 2012. This unit will allow students to consolidate academic knowledge and clinical skills. There will be opportunities to actively participate in assessment, analysis, goal setting, treatment/programme planning and occupational therapy intervention under the supervision of an occupational therapist. The placement will allow students to work for 5 consecutive weeks with occupational therapist in one of the many settings where therapists currently practice.

400175.1 Occupational Therapy Clinical Practice 3b

Credit Points 10 **Level** 3

Prerequisite

400167.1 Occupational Therapy Clinical Practice 2

Incompatible Units

E3028 - Clinical Placement 3

Special Requirements

To undertake this unit, students must comply with the following special requirements: Completion of a Prohibited Employment Declaration; Criminal Record Check Clearance; Provide evidence of compliance with the occupational screening and immunisation policy of NSW Health; Students must possess a current, Workcover Authority approved First Aid Certificate

.....

This unit will allow students to consolidate academic knowledge and clinical skills. There will be opportunities to actively participate in assessment, analysis, goal setting, treatment/programme planning and occupational therapy intervention under the supervision of an occupational therapist. The placement will allow students to work for 5 consecutive weeks with occupational therapist in one of the many settings where therapists currently practice.

400179.1 Occupational Therapy Clinical Practice 4

Credit Points 20 **Level** 5

Prerequisite

400174.1 Occupational Therapy Clinical Practice 3a AND
400175.1 Occupational Therapy Clinical Practice 3b

Equivalent Units

E4115 - Clinical Placement 4

Special Requirements

To undertake this unit, students must comply with the following special requirements: Completion of a Prohibited Employment Declaration; Criminal Record Check Clearance; Provide evidence of compliance with the occupational screening and immunisation policy of NSW Health; Students must possess a current, Workcover Authority approved First Aid Certificate

.....

This unit will be replaced by 400914 - Occupational Therapy Practice 4 & 400915 Occupational Therapy Practice 4 Workshop from 2013. This unit will allow students to consolidate academic knowledge and clinical skills in preparation for becoming a competent beginning practitioner. Students will be expected to actively participate in assessment, analysis, goal setting, treatment/programme planning and occupational therapy intervention under the supervision of an occupational therapist.

400182.1 Occupational Therapy Clinical Practice 4 (Honours)

Credit Points 10 **Level** 5

Prerequisite

400174.1 Occupational Therapy Clinical Practice 3a AND
400175.1 Occupational Therapy Clinical Practice 3b

Equivalent Units

E4115 - Clinical Placement 4

Special Requirements

To undertake this unit, students must comply with the following special requirements: Completion of a Prohibited Employment Declaration; Criminal Record Check Clearance; Provide evidence of compliance with the occupational screening and immunisation policy of NSW Health; Students must possess a current, Workcover Authority approved First Aid Certificate

.....

This unit will allow students to consolidate academic knowledge and clinical skills in preparation for becoming a competent beginning practitioner. Students will be expected to actively participate in assessment, analysis, goal setting, treatment/programme planning and occupational therapy intervention under the supervision of an occupational therapist.

400172.1 Occupational Therapy Clinical Specialties 1

Credit Points 10 **Level** 3

Assumed Knowledge

Prior knowledge equivalent to Pathophsyiology 1.

Equivalent Units

E2043 - Occupational Therapy 3

.....

The unit incorporates the theoretical evidence for clinical practice and an application of clinical practice skills for occupational therapy rehabilitation. The unit will include some of the most common conditions that are currently treated by occupational therapists in rehabilitation settings.

400173.1 Occupational Therapy Clinical Specialties 2

Credit Points 10 **Level** 3

Equivalent Units

E3024 - Counselling & Group Skills

.....

The unit incorporates the theoretical evidence for clinical practice and an application of skills for group work and creative therapies in clinical practice.

400180.1 Occupational Therapy Honours Thesis 1

Credit Points 10 **Level** 5

Assumed Knowledge

Satisfactory completion of years 1 - 3 of the Bachelor of Applied Science (Occupational Therapy).

Equivalent Units

E4119 - Advanced Research Methods

.....

Students will build upon the skills and knowledge of research, evaluation and scholarly enquiry gained in units completed earlier in the program. The emphasis of this unit is on the theory and application of qualitative and quantitative research methods to problems in the student's specialty field. The unit therefore aims to explore:The nature of research and experience of researching in health practitioner rolesTechnical skills of data collection, management, analysis and interpretation in health practiceApplication of this knowledge and skill in research project development in specialist health fields. Students must be enrolled in course 4521 to be eligible to enrol in this unit

400181.1 Occupational Therapy Honours Thesis 2

Credit Points 30 **Level** 5

Prerequisite

400180.1 Occupational Therapy Honours Thesis 1

Equivalent Units

E4118 - Research Thesis

.....

In this unit students will build upon the skills and knowledge of research, evaluation and scholarly enquiry gained in units completed earlier in the program. The emphasis of this unit is the completion of a supervised research project and the production of the honours research thesis. Each student will undertake through supervision the stages of data collection, analysis and will write their results into a format suitable for submission for examination.

400178.2 Occupational Therapy Qualitative Project

Credit Points 10 **Level** 5

Equivalent Units

E4126 - Investigative Project (Occupational Therapy)

.....

The aim of this unit is for students to apply their knowledge of professional theory, practice, research and evaluation skills to the investigation of an occupational therapy problem. Students will apply qualitative methods to investigate their chosen topic. Students develop an extensive knowledge of their chosen topic through literature review and will apply qualitative methods of data collection and analysis to their investigation. Ethical considerations in qualitative research will be analysed and applied to the investigation process. Students will complete a project

report and present this at a professional standard student conference at the completion of the semester.

300149.1 Operating Systems

Credit Points 10 **Level** 3

Assumed Knowledge

Fundamentals of Computer Science. Basic structure and functioning of computer hardware

Prerequisite

300167.1 Systems Programming 1

Equivalent Units

14944 - Operating Systems, J2789 - Operating Systems

.....

This unit provides an introduction to the theory and practice of the internal structure, implementation and functionality of operating systems. The unit is relevant not only for systems programmers, but also for applications developers who need to understand how operating systems control computer hardware, and how they provide convenience, efficiency and security for application development and implementation.

300698.1 Operating Systems Programming

Credit Points 10 **Level** 3

Assumed Knowledge

The students are expected to have general understanding of computer systems, computer fundamentals and programming techniques.

Prerequisite

300581.1 Programming Techniques

Equivalent Units

300149 - Operating Systems

.....

This unit provides the knowledge of the internal structure and functionality of Operating Systems. An operating system defines an abstraction of hardware behaviour and provides a range of services more suitable for ICT application development than what raw hardware could deliver, in terms of convenience, efficiency and security. It is important that ICT Professionals have some understanding of how these services are realized. For ICT Professionals whose role includes supporting the operating system this unit provides the introduction to the relevant theory and practice.

300670.1 Optimisation Techniques

Credit Points 10 **Level** 3

Equivalent Units

200197 Optimisation 1; 14346 Linear Programming; J3638 Operations Research 3.1

.....

This unit presents the fundamental mathematical aspects of operations research and develops skills in quantitative approaches in decision making. Students will learn how the optimisation techniques work and how they can be applied by the decision maker in order to generate efficient solutions. The unit focuses on problem formulation and solution methods and covers linear programming primarily and integer programming and dynamic programming briefly.

300301.1 Organic Chemistry 2

Credit Points 10 **Level** 2

Prerequisite

300225.1 Chemistry 2 OR **300550.1** Medicinal Chemistry

Equivalent Units

300553 - Molecules of Life: Synthesis and Reactivity

.....

Students studying at Campbelltown campus should refer to 300553 - Molecules of Life: Synthesis and Reactivity. This unit introduces how and why organic chemical reactions happen. The chemistry of the major chemical groups is discussed in terms of general reaction mechanisms. These ideas are drawn together in the examination of rationales involved in synthesising and identifying multifunctional organic molecules, and appropriate practical skills to achieve this are learnt in the associated practical work. Applications considered may include biological and medicinal organic chemistry and various aspects of industrial organic chemistry.

300235.1 Organic Chemistry 3

Credit Points 10 **Level** 3

Prerequisite

300301.1 Organic Chemistry 2

Equivalent Units

J3687 - Organic Chemistry 3, CH304A - Organic Chemistry 3.2 (V1), 14107 - Advanced Organic and Analytical Chemistry

.....

Students studying at Campbelltown campus should refer to 300546 - Drug Design and Synthesis. This unit introduces selected areas of more advanced organic chemistry, focusing on the tools used to synthesise and identify organic molecules. The practical skills required are learnt through laboratory exercises that complement the theory.

400809.1 Outcome Measures and Indicators in Clinical Practice

Credit Points 10 **Level** 3

Equivalent Units

400185 - Health Outcomes and Indicators

.....

This unit aims to provide students with a deeper understanding of the methods used to evaluate clinical practice and service provision. The primary focus of this unit is clinical indicators and outcome measurement. Students will be required to apply their knowledge of professional theory, practice, and research to design a project that could be implemented in the clinical setting to evaluate the effectiveness of clinical intervention or service provision.

400808.2 Outdoor Recreation

Credit Points 10 **Level** 1

Special Requirements

This unit is only available to students enrolled in course 4659 - Bachelor of Health Science (PDHPE).

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Students will learn about the variety of outdoor recreational pursuits available to individuals, whether in a school-based or community setting. Through active participation and guided instruction, students will also learn how to supervise specific forms of outdoor recreation. Lecture content will reinforce learning and skill development through the study of the development, administration and delivery of school-based and community public recreation programs, as well as study the role of recreation within Australia.

100675.1 Outdoor Recreation 2

Credit Points 10 **Level** 2

Equivalent Units

20069 - Outdoor Recreation Management

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This unit examines the concepts of administration and managerial aspects of Outdoor Recreation and Outdoor Education. This is undertaken through addressing elements of administration, group dynamics, land use management, environmental impact and risk evaluation as they relate to Outdoor Recreation Management. Knowledge, technical skills and values of a range of fieldwork activities with an emphasis on repelling is developed by the student. The emphasis is on the use of scholarly means to achieve practical ends, and students will be evaluated on their ability to conduct their own investigation into topics and to apply the outcome in a safe and practical manner. Completion of an approved Remote Area First Aid certificate is required of students at their own expense and in their own time. The unit addresses the National Outdoor Recreation Competency Standards. Field work is an integral component of the unit and is conducted in block, flexible time periods on weekends and mid session breaks. The field work is completed at the students own expense.

100676.1 Outdoor Recreation 3

Credit Points 10 **Level** 3

Equivalent Units

20070 - Outdoor Recreation Design

.....

This unit allows students to gain knowledge, technical skills and enhances values needed in the planning and developing of an outdoor recreation site or facility. The unit examines site analysis, safety audits, activity planning and delivery, coordination of others, and emergency procedures with specific reference to aquatic environments. The unit requires students to be participants in the planning and implementation of expeditions. The unit will provide for further understanding of the National Outdoor Recreation Competency Standards in both a theoretical and practical context. The unit will allow students to clearly demonstrate a sound understanding of knowledge and technical skills in a broad range of Outdoor Recreation areas. Fieldwork is an integral component of the unit and as such is compulsory. Fieldwork is undertaken at students' own expense.

100677.1 Outdoor Recreation 4

Credit Points 10 **Level** 3

Equivalent Units

20071 - Investigative Project in Outdoor Recreation

.....

The unit allows students to develop knowledge, technical skills and values in a range of Outdoor Recreation activities through researching different forms of Recreation program delivery modes. The unit involves students researching, developing and displaying leadership attributes in Outdoor Recreation areas through an examination of a theoretical and practical base. Assessment of current practices, outcomes and difficulties associated with outdoor recreation in wilderness environments is undertaken. Approaches to enhance best practice, deliver outcomes and meet and overcome difficulties associated with technology developments, and their practical application in the field. The unit, through research and fieldwork, will allow students to clearly demonstrate a sound understanding of knowledge, technical skills and values in a broad range of outdoor recreation competencies. Field work is an integral component of the unit and as such is compulsory. The field work is completed at the students' own expense.

300641.1 Packaging Science and Technology

Credit Points 10 **Level** 3

Equivalent Units

FS328A - Packaging Science & Technology

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This unit will equip students with knowledge of the following: Role of packaging. Packaging materials including paper, glass, metals and polymers. Choice of materials for food packaging in relation to possibilities of interactions with food products. Packaging for various food types including fresh and microwavable foods, dairy and horticultural products, cereals, snacks and beverages. Shelf life of packaged foods. Aseptic, active and controlled/modified atmosphere packaging. Food packaging trends based on responses to marketing and distribution stimuli. Methods of decorating and labelling packages. Green-packaging with response to increasing in environmental consciousness in disposing used packaging. Economics of packaging. Regulations governing packaging and the rationales behind them.

400186.1 Paediatric Practice

Credit Points 10 **Level** 3

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This elective unit aims to give students the opportunity to investigate a particular aspect of paediatric and adolescent clinical practice. This unit will be conducted in a self-directed mode where students will have the opportunity through a learning contract to decide on their own learning objectives and negotiate assessment items. It will provide

the opportunity for those students interested in pursuing a career with children and adolescents to enhance and apply their theoretical knowledge of paediatric practice to a particular area of interest.

300323.1 Pathological Basis of Disease

Credit Points 10 **Level** 2

Special Requirements

This unit is only available to core students enrolled in courses: 3577 Bachelor of Medical Science, 3589 Bachelor of Science (Forensic Science), 3517 Bachelor of Science (Biological Science) and 0J142 Bachelor of Medical Science (Retired).

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This unit builds on the human anatomy and physiology studied in first and second year, equipping students with detailed knowledge of the pathological basis of disease. The study of pathology integrates many previously learned scientific principles (physical, chemical and biological) into the context of disease.

400138.2 Pathophysiology 1

Credit Points 10 **Level** 2

Prerequisite

400868.1 Human Anatomy and Physiology 1 AND
400869.1 Human Anatomy and Physiology 2

Incompatible Units

300323 - Pathological Basis of Disease

.....

This unit is intended for students enrolled in a range of health science courses within the School of Biomedical and Health Sciences. It is designed to equip students with a detailed knowledge of pathophysiological processes evident in a number of key human diseases that are vocationally relevant to these students. The content is organised using a systems based approach. Problem-based learning methods will be adopted in the tutorial component of this unit to help students develop crucial problem solving skills.

400267.1 Pathophysiology 2

Credit Points 10 **Level** 3

Prerequisite

400138.1 Pathophysiology 1

Equivalent Units

E3322 - Pathophysiology II

.....

This unit extends the scope of topics that were explored in Pathophysiology I. The lectures and tutorials in this unit, apply a systemic approach to the study of a range of disease categories, providing a foundation of pathophysiological knowledge for Osteopathy, Chinese Medicine, and Naturopathy students. This unit aims at preparing the future practitioner with: an in-depth knowledge base of diseases; to be able to anticipate and safeguard the patient from potential harm by exercising accurate judgement, and making appropriate referrals, if necessary.

300150.2 PC Workshop

Credit Points 10 **Level** 1

Assumed Knowledge

Basic knowledge of personal computers.

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This unit introduces students to the hardware and software components of a stand-alone personal computer (PC). Students become familiar with the CPU, memory, secondary storage, IO peripherals and communications devices commonly found in a PC. They learn to assemble and disassemble a PC and to install hardware and software components according to supplier specifications. Students also learn to use and customise the PC operating system to maintain and optimise PC performance.

400796.1 PDHPE: Efficient Movement Principles

Credit Points 10 **Level** 3

Equivalent Units

100670 - Human Movement 4

Special Requirements

Level 1 Coaching and a Level 1 Sport Trainer Certificate

.....

This unit examines efficient human movement principles. An understanding of the principles of efficient movement and how they apply to performance is examined through a range of movement tasks required for track and field athletics and aquatics. Laboratory activities will focus upon the basic movement tasks of throwing, jumping, balancing, striking, running, buoyancy and rotary activities. An examination of the instruments used in efficient movement analysis is undertaken. A compulsory requirement of this unit is for students to successfully demonstrate competencies and to undertake and gain the RLSSA's Bronze Medallion award. Students who are not strong swimmers are encouraged to gain swim experience and coaching from outside agencies through the semester, so that they will be in a position to successfully undertake the theory and practical tests associated with the RLSSA's Bronze Medallion award. Students will also be given the opportunity to obtain the SLSA's Surf Rescue award. These components will be completed in the student's own time and at their own expense and will be additional requirements to the formal lecture and teaching program for the unit.

400794.1 PDHPE: Exploring Movement Skills

Credit Points 10 **Level** 1

Equivalent Units

100664 - Human Movement 1

.....

The focus of this unit will be on teaching games for understanding through the development of fundamental movement skills. This unit will allow students to expand their theoretical knowledge and practical experience in a

selection of invasion/territorial sports through a game sense and fundamental movement skills approach. The subject focuses on motor learning and the acquisition of skill. Skills and activities included are designed to promote their performance in and understanding of the teaching process in this area of physical education.

400798.1 PDHPE: Games for Diverse Groups

Credit Points 10 **Level** 2

Equivalent Units

100832 - Sports Coaching with Juniors

Special Requirements

Child protection training, senior first aid

.....

This unit focuses on the principles of coaching (young) children and adolescence in a variety of Striking/Fielding sports using a games sense through understanding approach. It builds on theories and practical aspects of game sense presented in Invasion Games 1 and 2. In particular it addresses issues of diversity and difference, and inclusion in sport and recreation activities. The organisation of the Disability Education Program (DEP) and the catering for diverse groups with special needs is addressed through a games sense approach. As well as addressing a range of traditional sports (Baseball, Cricket, Softball) the unit gives students the opportunity to design game sense approach programs for a range of alternate activities catering for diverse groups (Blind cricket, Table cricket, Boccia, Lifeball, Sitting volleyball, Goal ball, wheelchair basketball). Students will implement a coaching/ teaching program in a local school.Students will be required to complete the DEP training program and gain a number of Level 1coaching certificates in both traditional sports and modified sports. These are undertaken at their own expense and in their own time. They are additional extras to the formal teaching and lecturing of the unit. This school project/coaching clinic may occur outside of time tabled class lectures and tutorials. There are additional costs associated with this unit.

400797.1 PDHPE: Gymnastics

Credit Points 10 **Level** 3

Equivalent Units

100671 - Human Movement 5

.....

This unit focuses on the development of knowledge, understandings and technical skills of gymnastic commensurate with the requirements of the PDHPE years 7-10, Board of Studies syllabus and the Gymnastics Australia. Various aspects of fundamental and specialised movement skills development such as body control (including momentum, locomotion, balance and stability), anticipation and timing of movement, object manipulation and control, and gymnastic skills technique will be introduced through utilisation of different types of safe and progressive programming structures ranging from Kindergym and Gym Fun through to more formal structured programs of Artistic and Rhythmic Gymnastics as well as Sport Aerobics and Acrobatics. Understanding of features and elements of movement composition will be developed through participation in a variety of individual and group movement activities. Students will undertake practicum placements to complete requirements equivalent to the National Level 1 Gymnastics Coaching Certificate. These placements are in addition to the full lecture program of the unit and do not replacement the unit content or form in any way. Practicum placements will be at the students own expense and in students own time. Resources are required for this unit and students will need to pay for these. They include but are by no means limited to: Gymnastic coaching manual and worksheets, and Level one accreditation and certificate.

400793.1 PDHPE: Invasion Games

Credit Points 10 **Level** 2

Equivalent Units

100669 - Human Movement 3

Special Requirements

Level 1 General Principles, Level 1 Coaching and a Level 1 Sport Trainer Certificate

.....

This unit will provide students with the opportunity to further develop practical skills and coaching expertise in invasion/ territorial games. Students will be required to instruct, demonstrate and evaluate movement skills in more complex and challenging environments, and provide meaningful feedback specific to the context and stage/level of performance. The unit will build upon some key concepts introduced in Invasion Games 1 but will also explore other aspects important to the planning, implementation and evaluation of teaching invasion/territorial games. Other factors important to training and performance during competition will be explored during the course of this unit. Students will be given the opportunity to complete a Level 1 General Principles, Level 1 Coaching, and a Level 1 Sport Trainer Certificate. These components will be completed in the student's own time and at their own expense and will be additional requirements to the formal lecture and teaching program for the unit.

400792.1 PDHPE: Lifelong Physical Activity and Fitness

Credit Points 10 **Level** 2

Prerequisite

400780.1 Nutrition, Physical Activity and Mental Health

Equivalent Units

100665 - Human Movement 2

.....

This unit investigates the functioning of the human body during physical activity and exercise and its acute and chronic responses to the demands of regular, vigorous physical activity. The unit involves a series of laboratory sessions looking at strategies to promote participation in physical activity, and the principles of exercise, exercise testing and exercise prescription. Various measurement techniques for assessing physical capacities are examined along with the application of their results to exercise prescription and activity involvement for children, adolescents and adults specific to the individual. Students

undertaking this unit will be expected to complete some units of competence towards a Level 1 Fitness Trainers Accreditation in their own time, at their own expense.

400799.1 PDHPE: Recreational Sports

Credit Points 10 **Level** 3

Equivalent Units

100673 - Human Movement 6

Special Requirements

Child protection, criminal check

.....

This unit focuses on advanced principles of sports coaching through an examination of a variety of Net/Wall and Target sport and recreational activities. This unit further builds upon teaching games for understanding through a games sense approach introduced and developed in earlier units. Through presentation of a variety Net/Wall games (from Tennis, Table tennis, Volleyball, handball, badminton, squash), Target games (from Archery, Bowls, Bowling, Golf, Pool, Croquet) and Indigenous games (from) students will acquire knowledge and skills of how tactical (games sense approach) and technical (traditional approach) can form a powerful basis from which Coaches can deliver meaningful, impacting sport and recreational programs. Specific coverage of tactical and technical advanced sports coaching principles are examined, and then implemented through developed coaching programs for community sporting groups or as part of the Active After-school Communities Program. Students will be given the opportunity at their own expense and in their own time to complete the National Level 1 Community Coach program, the National Level 2 General Principles Coaching course and a variety of Level O and Level 1 Coaching certificates in Net/Wall and Target sports and recreations. These components, while compulsory,

300324.1 Pharmacological Chemistry

Credit Points 10 **Level** 3

Assumed Knowledge

300301 - Organic Chemistry 2. This unit is aimed at undergraduates with a grounding in chemistry and biochemistry.

Equivalent Units

J3649 - Pharmacological Chemistry

.....

Contemporary medicinal chemistry relies upon a rigorously planned and rational design of drugs based upon a full understanding of both chemistry and biology. An ability to determine and define the chemical structure of the drug, its target system, its site of action and its destruction mechanisms, has allowed the scientist to systematically tailor a drug to its specific purpose using quantitative structure-activity relationships (QSAR) and this methodology is emphasised within the unit. With the accelerating development of computer-based technologies this capability has been extended further. Drugs such as cimetidine and other histamine antagonists are used to illustrate the achievement and future uses of structure-activity relationships in rational drug design, whilst the laboratory work leads to a simulated quantitative structure-activity determination relating to antimicrobials.

300505.1 Pharmacology

Credit Points 10 **Level** 2

Assumed Knowledge

Assumed knowledge equivalent to 300320 - Introduction to Human Physiology or 300323 - Pathological Basis of Disease

.....

Pharmacology is the study of the therapeutic interactions of drugs with the human body, focusing on the drug's mechanisms of action at the biochemical and cellular level, on adverse reactions and on clinical applications. The aim of this unit is to provide students with a sound understanding of fundamental aspects of this field to prepare for further study of advanced pharmacology or other biomedical sciences. The general principles of pharmacokinetics and pharmacodynamics will be discussed in detail. This will be followed by the discussions of the major drug categories that affect different organ systems. Research methods in pharmacology and drug development process will also be introduced.

300236.1 Physical Chemistry 2

Credit Points 10 **Level** 2

Assumed Knowledge

To a standard equivalent to that presented in 300224 - Chemistry 1 (or equiv); and equivalent to completion of first-year mathematics unit (200191 - Fundamentals of Mathematics OR 200189 - Concepts of Mathematics)

Prerequisite

300224.1 Chemistry 1 OR **300554.1** Principles of Chemistry

Equivalent Units

14142 - Physical Chemistry, 300540 - Biomolecular Dynamics, CH205A - Chemistry 2, J2776 - Physical Chemistry 2

.....

Students studying at Campbelltown campus should refer to 300540 - Biomolecular Dynamics. This unit deals with some important principles, topics and techniques in physical chemistry, including the principles of energy flow and transformation in chemical systems (chemical thermodynamics), the rates and extent of chemical reactions (chemical equilibrium and kinetics), and applications of these principles to electrochemistry and a range of industrial and biological processes. The unit extends and expands on some of the topics studied previously in Chemistry 1 and 2, and aims to support and complement other units in chemistry, biochemistry, biotechnology, physics and the biological sciences. It strengthens students' ability to study quantitative chemical problems, and further develop useful experimental and data-analysis skills.

300303.1 Physical Chemistry 3

Credit Points 10 **Level** 3

Assumed Knowledge

A demonstrated understanding of and competence with the basic principles of physical chemistry including states and properties of matter, thermodynamics, chemical equilibria, kinetics and electrochemistry to a standard equivalent to that presented in Physical Chemistry 2 (or equivalent).

Prerequisite

300236.1 Physical Chemistry 2

Equivalent Units

J3696 - Physical Chemistry 3, CH305A Physical Chemistry 3.1, 14115 - Advanced Physical and Inorganic Chemistry

.....

This unit introduces selected areas of more advanced physical chemistry, which build on and extend the knowledge and understanding gained in Physical Chemistry 2. The practical skills required are learnt through laboratory exercises, which complement the theory.

700026.1 Physics (UWSCDip)

Credit Points 10 **Level** Z

Special Requirements

Students must be enrolled at UWS College.

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This unit serves as an introduction to the fundamentals of physics with appropriate applications in a wide range of engineering areas.

300558.1 Physics 1

Credit Points 10 **Level** 1

Assumed Knowledge

2 units of HSC mathematics or equivalent

Equivalent Units

14201 - Foundation Physics 1, 14227 - Engineering Physics, 300050 - Physics 1, 300077 - Physics 1D, EN102A - Engineering Science, J1733 - Physics 1.1, J1763 - Fundamentals of Physics

.....

This unit provides an introduction to physics for science and medical science students as well as providing a basis for further study of more advanced physics for students pursuing courses in nanotechnology, chemical, physical and mathematical sciences. It provides a foundation to understand the physical principles which underlay scientific instrumentation and analysis Topics covered include systems of units; Introductory mechanics, Newton's laws, work, conservation of energy and momentum; Electricity, electrostatics, DC and AC circuits and components, introductory electromagnetism; Waves and optics, electromagnetic radiation, reflection, refraction, image formation, polarisation, interference and diffraction.

700035.1 Physics 1 (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300050 - Physics 1, J1763 - Fundamentals of Physics, J1733 - Physics 1.1, 14201 - Foundation Physics 1, EN102A - Engineering Science, 14227 - Engineering Physics, 300077 - Physics 1D

Special Requirements

Students must be enrolled at UWS College.

.....

This unit provides an introduction to physics for science and medical science students as well as providing a basis for further study of more advanced physics for students pursuing courses in nanotechnology, chemical, physical and mathematical sciences. It provides a foundation to understand the physical principles which underlay scientific instrumentation and analysis. Topics covered include systems of units; Introductory mechanics, Newton's laws, work, conservation of energy and momentum; Electricity, electrostatics, DC and AC circuits and components, introductory electromagnetism; Waves and optics, electromagnetic radiation, reflection, refraction, image formation, polarisation, interference and diffraction.

300559.1 Physics 2

Credit Points 10 **Level** 1

Assumed Knowledge

Physics 1 or equivalent.

Equivalent Units

14202 - Foundation Physics 2, 300051 - Physics 2, J1734 - Physics 1.2, PH103A - Physics 1.2 (v2)

.....

This unit develops a deeper understanding of physics for students pursuing courses in nanotechnology, chemical, physical and mathematical sciences. Topics covered include Mechanics: Equilibrium, stress and strain, harmonic oscillators, rotational motion, moment of inertia. Gravitation, types of force in nature. Thermal Physics: temperature, specific & latent heat, heat transfer, kinetic theory of gases, first law of thermodynamics, isothermal, isobaric & adiabatic processes. Introduction to Modern Physics: special relativity, time dilation, length contraction, momentum, mass, rest energy, velocity addition. Basic quantum theory, Planck's hypothesis, wave nature of matter, quantum mechanical view of atoms. Nuclear physics, radiation, half-life, nuclear reactions.

300464.1 Physics and Materials

Credit Points 10 **Level** 1

Equivalent Units

14227 - Engineering Physics

.....

This unit serves as an introduction to the fundamentals of physics and materials with appropriate applications in a wide range of engineering and industrial design systems.

700020.1 Physics and Materials (UWSC)

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Physics and HSC Mathematics and/or Physics (UWSC Dip) and Mathematics C (UWSC Dip)

Equivalent Units

300464 - Physics and Materials

Special Requirements

Students must be enrolled at UWS College.

.....

This unit serves as an introduction to the fundamentals of physics and materials with appropriate applications in a wide range of engineering and industrial design systems.

400323.1 Physiology of Exercise

Credit Points 10 **Level** 2

Prerequisite

400130.1 Human Medical Sciences 1 AND **400256.1** Human Medical Sciences 2

.....

This unit is designed to provide the student with an understanding of the physiological basis of physical activity. Physiological factors influence and limit our exercise ability while participation in exercise and training influences physiological factors. This unit will explore the responses of the Cardiovascular, Respiratory, Muscular, Hormonal and Nervous systems responses to exercise and training; Environment and exercise interactions, Physiological factors that may limit exercise performance; Gender and lifespan differences in exercise responses; Physiological basis for fitness tests and Working safely within the exercise physiology laboratory environment.

300621.1 Plant Biotechnology

Credit Points 10 **Level** 3

Assumed Knowledge

Basic knowledge of biology, botany, and chemistry.

Equivalent Units

BC302A - Plant Biotechnology

.....

This unit introduces theories and techniques of plant biotechnology that are applicable to crop production and improvement. It will furnish students with an understanding of the scientific principles used in the biotechnological approaches to manipulating plants and their genomes. Emphasis will be placed on providing sufficient information and technical expertise to allow graduates to enter commercial, industrial and research employment. The ethical and environmental impacts of genetic engineering and biotechnology are also emphasised.

300501.1 Plant Diversity

Credit Points 10 **Level** 2

Assumed Knowledge

Basic botanical knowledge in plant anatomy and morphology

Equivalent Units

HT105A - Horticultural Plant Identification

.....

This unit provides knowledge relating to the identification, incidence, culture use or control of a diverse range of plant material encountered in horticultural and agricultural production and associated plant usage and support industries. The diversity of the plant kingdom is explored whether they be crop plants, weeds or Australian native plants.

300609.1 Plant Physiology

Credit Points 10 **Level** 2

Assumed Knowledge

Sound knowledge of biology and chemistry equivalent to undergraduate level 1 units.

Equivalent Units

14409 - Plant Physiology, 300333 - Introductory Plant Physiology

.....

This unit introduces students to the mechanisms by which plants function. It will provide students with a detailed understanding of the processes and pathways involved in plant water, nutrient and energy acquisition and plant growth and development. It also introduces students to the interactions that occur between plants and their external environment including plant stress responses, plant defence strategies, plant - microbe interactions and plant responses to climate change, and how these interactions influence plant physiological processes and growth and development.

300643.1 Plant Protection

Credit Points 10 **Level** 3

Assumed Knowledge

Sound knowledge of chemistry and biology, and some knowledge of genetics.

Equivalent Units

HT301A - Plant Protection (V2)

.....

This unit is designed to enable students to recognise both the significance of pests in agricultural and horticultural production and postharvest, and methods of reducing their damage to plants and plant products. Major areas of study include: pest losses in horticultural production and postharvest: types and level; major groups of organisms causing plant losses, viz. arthropods, pathogens and weeds; strategies for reducing pest damage (including legislative, physical, biological and chemical) - benefits and

limitations; and field recognition of pests and damage assessment.

300336.1 Plant-Microbe Interactions

Credit Points 10 **Level** 3

Equivalent Units

BI203A - Biology of Non-Plant Organisms

.....

The unit will explore the positive and negative aspects of interactions between plants and micro-organisms in the environment. This includes plant pathological viruses, bacteria and fungi, their mode of action, life cycle and symptomatology. Beneficial associations include rood nodules, mycorrhizae, rhizosphere effects and soil nutrient cycles. The response by plants and their natural defence mechanisms to infection and their positive interactions with micro-organisms will also be investigated.

101119.1 Policy, Politics and Educational Futures

Credit Points 10 **Level** 2

Equivalent Units

100300 - Management 1: Management and Leadership in the 21st Century

.....

Education is an area where policies and politics are strategically connected to a vision of the future, the nation and its citizens. In this unit we examine the impact of these intertwining dimensions with the aim of understanding the political and contested nature of education and developing alternative educational futures. In a historic period marked by transnational and transglobal movements of people it is no longer possible to see education through the narrow lens of national imperatives and bounded citizenship. This unit takes a broad perspective on education globally, nationally and locally and considers the dynamic relationships constructed within them.

300452.1 Postharvest

Credit Points 10 **Level** 2

Equivalent Units

HT203A - Introduction to Postharvest

.....

This unit will discuss the factors that affect the retention of quality of fresh fruit, vegetables and cut flowers from grower to consumer. Topics include: the essential role of fresh produce for the health and happiness of people; the growth and maturation and respiration of fresh produce; the importance of managing temperature and relative humidity of the storage environment; the physiological responses of fresh produce to changes in temperature and water loss; the role of ethylene in fruit ripening and senescence; the practical issues of assessing harvest maturity; packaging; distribution and the control of postharvest disease and the concepts of HACCP.

300052.1 Power and Machines

Credit Points 10 **Level** 2

Prerequisite

300005.1 Circuit Theory

Equivalent Units

84239 - Introduction to Power and Machines

.....

This unit introduces basic concepts of power and machines, including an introduction to modern power systems and transformers, and fundamentals of electromechanical energy conversion. It also covers magnetic circuits, modern permanent magnet materials and their characteristics, and balanced and unbalanced three-phase power systems.

101370.1 Power, Control and Decision Making

Credit Points 10 **Level** 3

Equivalent Units

61621 - Power Control and Decision Making, 101722 - Power, Control and Decision Making

.....

The purpose of this unit is for students to develop an understanding of power as an interaction between historical, economic, structural and individual contingencies that impinge upon and affect decision-making processes. Within organizations and the broader social environment, the processes by which decisions are made can range on a spectrum from clear to vague and sometimes, seemingly, random or even non-existent. Recognition of the strategic contingencies within a situation and their interactions enables identification of the dynamics and processes of decision-making. Applying this knowledge to corporate and social situations will enable students to identify the political machinations that result in decisions that have lead to corporate successes and failures and social gains and losses.

400156.1 Practice Management for Health Professionals

Credit Points 10 **Level** 3

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This unit is aimed to introduce the student to the management issues in establishing and working in a clinical practice. While the unit will cover issues related to health professionals and public sector management, the focus of the unit will be on issues in private practice. The aim of the unit is to introduce the student to a wide range of topics, including an over view of health care funding in Australia, private and public health system, developing a business plan, different business structures, financial management, managing staff and occupational health and safety issues.

300502.1 Primary Production

Credit Points 10 **Level** 1

Equivalent Units

AG103A - Farming Systems, 300450 - Horticultural Production 1

.....

This unit overviews farming systems, primary production industries and enterprises. It introduces ethical issues relating to primary production and their associated industries and investigates many principles and techniques of agricultural and horticultural production. A major feature of this unit is the opportunity to develop practical production management skills through the production of selected crops in the field.

300671.1 Principles and Practice of Decision Making

Credit Points 10 **Level** 3

Assumed Knowledge

200192 Statistics for Science or 200032 Statistics for Business or 200263 Biometry and 200189 Concepts of Mathematics and 300606 Foundations of Statistical Modelling and Decision Making

Equivalent Units

200043 - Stochastic Decision Theory, 200035 - Decision Analysis and Statistical Process Control

.....

This level three hundred unit investigates models for making optimal decisions under conditions of uncertainty and presents a number of relevant quantitative techniques. Topics covered include probabilistic and non probabilistic decision making criteria, decision trees, sensitivity analysis, using utility for decision making and risk analysis, inventory management, queuing analysis, and introduction to simulation.

300646.1 Principles of Biotechnology

Credit Points 10 **Level** 2

Assumed Knowledge

Sound knowledge of undergraduate level 1 sciences such as biology, chemistry, and mathematics.

Prerequisite

300300.1 Microbiology 1

Corequisite

300321.1 Microbiology 2

Equivalent Units

MI204A - Principles of Biotechnology, SMIB25 - Industrial Microbiology

.....

This unit introduces students to the field of biotechnology and provides a foundation for advanced biotechnology units. It will build on the basic sciences and provide an understanding of the basic principles involved in this field. It will introduce the multidisciplinary nature of biotechnology and provide an overview of biotechnology and the current status of the field.

300554.1 Principles of Chemistry

Credit Points 10 **Level** 1

Equivalent Units

300224 - Chemistry 1, J1753 - Chemistry 1

Incompatible Units

300469 - Introductory Chemistry

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Students studying at Hawkesbury or Parramatta campus should refer to 300224 - Chemistry 1. This unit provides an introduction to the principles fundamental to all branches of chemistry. It focuses on atomic structure, periodicity, electronic configuration, structure and bonding, chemical equations, stoichiometry, the mole concept, gas laws, states of matter, intermolecular forces and properties of solutions, chemical thermodynamics, chemical equilibria, electrochemistry, scientific notation, and nomenclature. The unit will emphasise their application to biomedical science, but it is intended to provide a broad, rigorous foundation for studies in all areas of chemistry.

200525.1 Principles of Economics

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Mathematics

Equivalent Units

200076 - Introductory Economics, 200046 - Microeconomics, EC102A - Principles of Economics

.....

This unit is an introduction to economic concepts and contemporary economic issues. It introduces students to basic concepts such as markets and their operation, the behaviour of firms, the efficiency and potential failings of free markets, the role of government, key macroeconomic variables and problems such as unemployment. It illuminates these concepts via application to contemporary economic issues and debates over different theoretical perspectives. This unit also exposes students to recent developments in economics via presentations by specialist guest lecturers.

100483.1 Principles of Professional Communication 1

Credit Points 10 **Level** 1

Equivalent Units

63901 - Written and Oral Presentation 2, H1745 - Business Skills for Professionals, J1751- Professional Skills for Science and Technology

.....

This unit provide students with an introductory understanding of a range of communication theories and practices necessary for academic work and professional success.

700040.1 Principles of Professional Communication 1 (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

63901 - Written and Oral Presentation 2, H1745 - Business Skills for Professionals, J1751 - Professional Skills for Science and Technology

Special Requirements

Students must be enrolled at UWS College.

.....

This unit provides students with an introductory understanding of a range of communication theories and practices necessary for academic work and professional success.

200040.1 Probability & Stochastic Processes

Credit Points 10 **Level** 3

Assumed Knowledge

Concepts of Mathematics, and Statistical Theory.

.....

This is an introduction to stochastic processes for students familiar with elementary probability. This unit presents the theory and application of time-dependent processes. In addition the unit applies some methods of probability and stochastic processes to real-world problems. Topics include: Markov chains, Poisson processes, continuous-time Markov chains, branching processes, birth and death processes, queuing systems, and stationary processes.

300578.1 Professional Development

Credit Points 10 **Level** 3

Assumed Knowledge

The following knowledge is assumed: • Understanding of Systems Analysis and Design; • Ability to express oneself clearly and correctly, both orally and in writing, before an assembly of professional people.

Equivalent Units

300372 - Professional Preparation and Project Management

Special Requirements

Successful completion of 140 credit points.

.....

This is a final year unit that builds on foundation and intermediate computing units by preparing students for professional experience. The unit covers ethics and professional code of practice, legal, social and environmental issues relating to computing, I.T. and communications technology, security, privacy and freedom of information, team dynamics, project scheduling and management, project cost/benefit analysis, and quality assurance for systems and applications. This unit is a pre-requisite to the capstone project, covered in Professional Experience.

300579.1 Professional Experience

Credit Points 10 **Level** 3

Assumed Knowledge

Software development methodologies, software analysis and design modelling tools and techniques, programming languages, implementing databases management systems, and software construction and testing

Prerequisite

300578.1 Professional Development

Equivalent Units

300097 - Computing Project 1

Special Requirements

Due to the capstone nature of this unit it can only be undertaken by students enrolled in the 3633 - Bachelor of Computing (Information Systems) and 3639 - Bachelor of Information and Communications Technology.

.....

This unit acts as a single capstone unit and through the medium of a specific project, provides opportunities for students to experience the range of issues in requirements definition, analysis, design and implementation, relating to the development of a software product.

400783.1 Professional Pathways in Health Science

Credit Points 10 **Level** 1

Equivalent Units

400769 - Foundations of Health Sciences 400242 - Foundation of Therapeutic Recreation

.....

The unit introduces students to professional issues, history and the philosophy in health sciences: health promotion, health service management and therapeutic recreation. Theories and key concepts of health promotion, health service management, social health and therapeutic recreation are introduced. Students will be introduced to an understanding of human development and the health science processes. Students will examine how human growth and development influences development of socio-economic, cultural, gender, environmental, health science issues. Students will begin an electronic portfolio to help them take more control over their education and assist students to make connections with their learning experiences while building critical and reflective skills. Therapeutic Recreation students will complete a 35 hour workplace learning placement. Health Promotion and Health Service Management students will complete a community project.

300053.1 Professional Practice

Credit Points 10 **Level** 3

Prerequisite

85007.1 Civil and Environmental Engineering Construction

Equivalent Units

85013 - Civil and Environmental Engineering Practice 2

Special Requirements

Successful completion of 160 credit points before enrolling in this unit.

.....

This unit explores the art of managing physical and human resources and the knowledge to plan, deliver and maintain the physical infrastructure for civilisation in an economically sustainable way.

300053.2 Professional Practice

Credit Points 10 **Level** 3

Prerequisite

300461.1 Engineering and Industrial Design Practice OR
300674.1 Engineering, Design and Construction Practice

Equivalent Units

85013 - Civil and Environmental Engineering Practice 2

Special Requirements

Successful completion of 160 credit points before enrolling in this unit.

.....

This unit explores the art of managing physical and human resources and the knowledge to plan, deliver and maintain the physical infrastructure for civilisation in an economically sustainable way.

400790.1 Professional Practice in Aged Care and Disability

Credit Points 10 **Level** 2

Equivalent Units

400248 - Professional Practice in Aged Care, 400968 - Professional Practice in Aged Care and Disability

.....

This unit provides the student with an understanding of current trends underlying policies and services in the aged care and disability industry, which will help them to understand the dynamics of the changing aged care and disability service sector. Students will examine the strategic environments of aged care and disability to develop global and national perspectives, identify drivers of change and development, and the major players in aged care and disability policies. Students will develop an understanding of the aged care and disability competencies and determinants of well-being for aged and disabled persons, which can be used in their future roles in the health industry. Through reflections on practice in aged care and disability , students will develop an individual approach to aged care and disability service issues which they can use in the future as health care professionals.

400802.1 Professional Practice in Sport and Exercise Science 1

Credit Points 10 **Level** 1

Equivalent Units

400320 - Professional Practice in Sports Studies 1, 400880 - Fundamentals of Exercise Science

Special Requirements

This professional unit is restricted to students enrolled in course 4558 B App Sc (Sport & Exercise Science). Two Special Requirement forms are required to be completed prior to enrolment in this unit - the Prohibited Persons (Child Protection) check, and the Criminal Records Check. Immunisation requirements must also be met before this unit can be studied.

.....

This unit provides students with experiences in the Science of Exercise & Sport helping them to determine a career direction. Students meet people from a variety of jobs in the sport, exercise and fitness industries, visit workplaces, and receive career counselling. This helps students identify preferences for professional practice placement. As there is strong competition for sport and exercise science-based employment, it is important to choose the placement agency carefully

400650.3 Professional Practice in Sport and Exercise Science 2

Credit Points 10 **Level** 2

Prerequisite

400324.1 Foundations of Exercise Prescription

.....

This unit is being replaced by 400903 Professional Development and Work Experince in 2011. Experience in the field of study is an essential ingredient in marketing an individual for employment and often for professional memberships. Professional Practice provides students with an opportunity to observe Sport & Exercise science practitioners in action and to learn in a practical “hands on” setting. Students will have the opportunity to see how knowledge and skills acquired in lectures and tutorials/ laboratories can be applied and also relate theoretical concepts and skills to situations in exercise-related settings. This unit is the first of two units which require a work placement which is usually off campus.

400177.1 Professional Reasoning

Credit Points 10 **Level** 5

Equivalent Units

E4114 - Ergonomics 3, E4116 - Occupational Therapy 6

.....

This unit will be replaced by 400925 - Professional Reasoning from 2013. This final year unit focuses on the transition from student to practitioner. The aim of this unit is to provide students with learning opportunities that will consolidate and enhance their competence in professional practice throughout their career. Professional competencies of central concern include advanced clinical reasoning skills, evidence based-practice, reflective practice, personal and career management strategies, self-directed and life long learning. These competencies contribute positively to the effective management of graduates’ clinical practice in various work contexts, and their future career paths. Acquisition of such skills will allow the graduate to direct and adapt to change in these areas.

300497.1 Professional Skills for Science

Credit Points 10 **Level** 1

Assumed Knowledge

Basic literacy and numeracy skills (high-school level).

Equivalent Units

300270 - Professional Skills for Science & Technology, HT104A - Plants in Society

.....

This unit is designed to provide students with academic and generic skills required for successful completion of their science-related undergraduate studies and for professional practice. Activities allow students to learn, develop and utilise various academic and interpersonal skills within the wider context of applied scientific principles in society. Activities encourage development of self-confidence, creative thinking, problem solving, group process, communication and peer support. Academic skills include aspects of scientific reading and writing, assignment preparation, gathering scientific information, research and library skills, oral presentation, group work, taking tests and exams, effective personal and class-based learning strategies, peer assessment and online learning.

700042.1 Professional Skills for Science (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300497 - Professional Skills for Science, HT104A - Plants in Society, 300270 - Professional Skills for Science and Technology

Special Requirements

Students must be enrolled at UWS College.

.....

This unit is designed to provide students with the academic and generic skills required for successful completion of their science-related undergraduate studies and for professional practice. Activities allow students to learn, develop and utilise various academic and interpersonal skills within the wider context of applied scientific principles in society. Activities encourage the development of self-confidence, creative thinking, problem solving, group process, communication and peer support. Academic skills include aspects of scientific reading and writing, assignment preparation, gathering scientific information, research and library skills, oral presentation, group work, taking tests and exams, effective personal and class-based learning strategies, peer assessment, and online learning.

400786.1 Professional Transition Project

Credit Points 10 **Level** 3

Special Requirements

The unit is for final semester B Health Science students

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This unit is designed to assist students to make the transition from undergraduate student life to professional life. The student centred learning approach used in this unit enables students to focus their own learning styles and personal capabilities. Students will explore the strengths and weaknesses of their own learning styles and develop strategies to strengthen their personal learning and teaching capabilities for use as professionals. A structure for developing professional performance will be introduced that includes: management skills, interpersonal skills, problem solving skills, project and procedure skills, personal growth, development and socialisation and education roles. Students will participate in hands –on instructor led sessions, through the E-portfolio project to reflect on and connect academic experiences with their life to anticipated graduate capability

700047.1 Programming Design (UWSCFS)

Credit Points 5 **Level** Z

Special Requirements

Students must be enrolled at UWS College. This unit is only available to UWS College students.

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Programming Design introduces students to the principles required for the effective design of solutions to computer program related problems. The course has been developed to enhance a student's practical ability as well as build a solid theoretical foundation for further study.

300580.1 Programming Fundamentals

Credit Points 10 **Level** 1

Equivalent Units

300405 - Fundamentals of Programming, 300155 - Programming Principles 1, 200122 - Business Application Development 1

.....

As a first unit in computer programming, Programming Fundamentals covers basic computer architecture, basic data and file structures, concept of algorithms, programming constructs, programming language features and functions, program design, test design, basic documentation. A high level programming language is employed to solve problems in a structured manner.

700008.1 Programming Fundamentals (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300405 - Fundamentals of Programming, 300155 - Programming Principles 1, 200122 - Business Application Development 1, 300580 - Programming Fundamentals

Special Requirements

Students must be enrolled at UWS College.

.....

As a first unit in computer programming, Programming Fundamentals covers basic computer architecture, basic data and file structures, concept of algorithms, programming constructs, programming language features and functions, program design, test design, basic documentation. A high level programming language is employed to solve problems in a structured manner.

300581.1 Programming Techniques

Credit Points 10 **Level** 2

Assumed Knowledge

Entry to the unit requires a working knowledge of programming concepts, such as standard control logic, modularization, and parameter passing, as well as a demonstrable skills of using selection, iteration, functions and one-dimensional array in a high-level programming language, such as C or C++.

Prerequisite

300580.1 Programming Fundamentals

Equivalent Units

300156 - Programming Principles 2, 300147 Object-Oriented Programming

.....

This unit builds on the programming foundation laid in the unit Programming Fundamentals. Utilising an object-oriented language it continues the development of programming skills and methodologies required for professional programming and for further study in later computing units. Topics covered include object-oriented programming techniques of encapsulation, inheritance and polymorphism, programming concepts including pointers, references, multi-dimensional arrays, strings, file I/O, and abstract data types.

MG313A.1 Project Management

Credit Points 10 **Level** 3

Assumed Knowledge

An understanding of construction planning and planning techniques (such as critical path method)

Equivalent Units

30072 - Project Management.

.....

This unit is intended to give students an understanding of appropriate methods of managing projects and to develop skills in using these methods on the type of projects the students expect to undertake in their professional careers. Content: Management of time, management of cost, quality, resources and communications.

300555.1 Proteins and Genes

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge of cell structure; chromosomes, mitosis and meiosis; structure of DNA and its role as carrier of genetic information; Mendelian genetics; chemical bonding, including covalent, hydrogen and ionic bonds and hydrophobic interactions; properties of water, acids, bases and buffers; structure of common functional groups; stereoisomerism; stoichiometry; principles of chemical reactions. Basic mathematical principles, as taught in Fundamentals of Mathematics.

Prerequisite

300543.1 Cell Biology OR **300221.1** Biology 1 AND **300550.1** Medicinal Chemistry OR **300225.1** Chemistry 2

Equivalent Units

300219 - Biochemistry 1, J2820 - Introductory Biochemistry

Incompatible Units

14437 - Biochemistry, 300227 - General Biochemistry, BC201A - Biochemistry 2.1

.....

Students studying at Hawkesbury or Parramatta campus should refer to 300219 - Biochemistry 1. This unit investigates protein structure, function, synthesis and degradation in both health and disease. Students will analyse how proteins fold and how this relates to function, illustrated by proteins such as oxygen carriers, enzymes, and gene regulators. The importance of bioinformatics for analysing protein structure, function and evolution will be emphasised. Discussion of enzyme structure and catalytic mechanisms will provide a deeper understanding of how catalytic proteins work. DNA, gene structure and gene expression (transcription and translation) will be investigated in some detail at the molecular level, including the impact of mutation on protein function. The relevance of post-translational modification, protein targeting and protein degradation for healthy cell function will also be discussed.

400285.1 Public Health

Credit Points 10 **Level** 2

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This is a flexible learning unit and deals with foundational concepts and issues relating to public health. The philosophical and historical development and the role of public health in Australia are examined, as are policies and principles that govern and inform practice. Emphasis is placed on understanding health issues and concerns in Greater Western Sydney Region as well as on national and international contexts of population health. The unit draws on current and emerging practical situations to highlight the dynamic yet continuing legacy of public health. There is a need to visit a public health unit for consultation purposes.

200469.1 Quality and Value Management

Credit Points 10 **Level** 3

Equivalent Units

300748 - Quality and Value Management

.....

This unit is being replaced by unit code 300748 in 2010. Introduces students to the concepts of quality systems value management techniques and their application to the built environment. Students will gain knowledge of quality assurance and value management theories, techniques and principles so that they can apply as they enter into their professional careers.

300500.1 Quality Assurance and Food Safety

Credit Points 10 **Level** 2

Assumed Knowledge

Food preservation, elementary HACCP

Equivalent Units

FS326A - Food Science & Technology Practicum 3.2

Incompatible Units

FS323A - Food Safety A

.....

This unit will provide students with a practical exercise in developing a HACCP plan for a manufacturing process. Quality assurance, principles of food safety, the acceptability of risk, the risk/benefit principle, food law, and ISO9000 Quality Standards, will be covered.

200045.1 Quantitative Project

Credit Points 10 **Level** 3

Assumed Knowledge

Six units of Mathematics, Statistics and/or Operations Research, at Level 2 or Level 3

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This unit provides an opportunity for students to carry out a major project, in the form of a directed investigation under the supervision of an academic staff member. With the assistance of their supervisor, students will define the problem to be studied and then apply and develop the appropriate methodology. The final report presented by the student will consist of an appropriate simple literature review, presentation of analytical and/or theoretical results, analysis and discussion, followed by an appropriate conclusion. Students are also expected to give an oral presentation at the end of the session, outlining the results of their investigation.

400148.2 Quantitative Research

Credit Points 10 **Level** 2

Assumed Knowledge

Students should be able to perform basic mathematic operation and have some understanding of research process.

Equivalent Units

E2230 - Biostatistics for the Health Sciences, 25719 Quantitative Research, 25823 - Quantitative Research

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This unit is being replaced by 400864 Research Methods (Quantative and Qualitative) in 2011. This unit will explore essential elements of quantitative research methods as used in health sciences. It will prepare students for the planning, designing, conducting, evaluating and reporting of a research project. The most common research designs will be examined for their relative strengths and weaknesses, with particular emphasis on how these will have an impact on interpretation and conclusion of the study. It will also introduce basic concepts in epidemiology and biostatistics as well as in using SPSS to analyse and interpret data. The overall aim is to provide skills in designing and evaluating research studies in health sciences.

200486.1 Quantity Surveying 1

Credit Points 10 **Level** 2

Assumed Knowledge

Building construction including residential, light industrial and small commercial.

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This unit is designed to provide students with the basic skills necessary to measure building works for estimates, variations, construction programs and materials ordering.

200487.1 Quantity Surveying 2

Credit Points 10 **Level** 2

Assumed Knowledge

Building construction including residential, light industrial, small commercial and building measurement.

.....

To enable students to measure complex building works and trades, civil engineering works, building services, demolition and site works for contract documentation, estimates, variation quotations and construction plans. Content: measurement of: multi storey structural trades, precast concrete, structural steel, metal work partitions, suspended ceilings, curtain walls, fitments, elemental quantities, repair and refurbishment, civil engineering works, services, demolition, site works and computer applications for measurement.

300419.1 Quantum Properties of Chemical Systems

Credit Points 10 **Level** 2

Assumed Knowledge

Successful completion of at least one chemistry unit and one physics unit at undergraduate level.

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The unit builds on quantum concepts that have been introduced in earlier units such as chemistry, physics and nanotechnology. It aims to develop the students' understanding of quantum principles as they apply to chemical systems, including atoms, molecules and extended arrays such as metals and semiconductors. Starting with a restatement of some fundamental principles, the unit will consider simple quantum models including the hydrogen atom, then introduce molecular-orbital theory and some of its applications to chemical systems. The unit will also provide a brief introduction to some semiempirical, ab initio and density-functional methods for modelling molecules of interest in nanotechnology.

300489.1 Radio and Satellite Communication

Credit Points 10 **Level** 4

Assumed Knowledge

Physics and Materials, Mathematics for Engineers 1 and 2, Astrophysics

Prerequisite

300007.1 Communication Systems OR **300010.1** Data Networks

Equivalent Units

14297 - Satellite Communication

.....

This unit is offered in alternate years. This unit will develop an understanding of the theory and practice of radio and satellite communication techniques and measurements and provide an introduction to space communication systems. It will complement the general communication engineering units, addressing advanced topics important and specific to radio and satellite communications.

400201.3 Readings and Methodology

Credit Points 10 **Level** 5

Assumed Knowledge

A basic knowledge of research methods at undergraduate level or equivalent is required.

Special Requirements

Enrolment in this unit is restricted to those students enrolled in the Bachelor of Nursing (Honours).

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This version will commence from 2010. This unit will broaden and deepen students understanding of research methodologies and develop research skills in order to apply these to a specific B Nursing (Honours) research project.

300289.1 Regional Environmental Management

Credit Points 10 **Level** 3

Equivalent Units

EH310A - Environmental Management 2

.....

Students will learn to use tools and appreciate the complexity of regional environmental management and planning. Building on their local and site specific environmental management knowledge, the regional planning looks at the difficulties encountered when practicing environmental management on a broader spatial scale.

200037.1 Regression Analysis & Experimental Design

Credit Points 10 **Level** 3

Assumed Knowledge

200032 - Statistics for Business, 200192 - Statistics for Science and desirably 200033 - Applied Statistics.

Equivalent Units

14410 - Regression Analysis and Experimental Design, J3692 - Regression and Multivariate Analysis, J3717 - Design and Analysis of Experiments

.....

This unit covers linear regression analysis and experimental design, with analysis of variance being the primary analytical tool. Topics in linear regression are: the statistical model, the method of least squares, sampling distributions of least squares estimators, statistical inferences and testing hypotheses, methods for model building, detecting violations of the regression assumption and remedies, logistic regression, and Poisson regression. Topics in designed experiments are: completely randomised experiment, factorial experiment, randomised block, Latin square, random model, and mixed model. For each design the following aspects are covered: the statistical model, the normal equations and their solutions, sums of squares and basic algebraic identity, the ANOVA table and relevant tests, and treatment comparisons.

400803.2 Research in Nursing Practice

Credit Points 10 **Level** 5

Assumed Knowledge

A basic knowledge of research methods at undergraduate level.

Incompatible Units

400200 - Applied Nursing Research

Special Requirements

Unit is restricted to those students enrolled in B. Nursing (Honours).

.....

Research is a necessary undertaking toward the continued development of nursing science and practice. The aim of this unit is to both broaden and deepen students' understanding of research methods and to extend their ability to discuss, appraise the work of others and participate in their own research.

300411.2 Research Methodology and Experimental Design

Credit Points 20 **Level** 8

Assumed Knowledge

Appropriate background in a scientific discipline to conduct research in that area. No previous research experience is required.

Equivalent Units

SC809A - Research Methodology and Experimental Design, 14429 - Science Research Project, Proposal And Seminar

Special Requirements

Restriction to students enrolled in postgraduate or honours courses.

.....

This unit introduces students to the principles and tools of scientific research. It is designed for students who are undertaking Bachelors (Honours) and postgraduate courses by those who have not previously undertaken training in research. Students attend a series of workshops covering topics such as critical thinking, problem definition, formulation and testing of hypotheses, analysis of quantitative and qualitative results, communication of

research findings, bibliographic techniques and advanced information retrieval methods. Students are required to prepare a research proposal, a literature review, seminars, progress reports and a research poster, and to participate in seminar series throughout the year.

300662.1 Research Methods

Credit Points 10 **Level** 2

Equivalent Units

300290 - Researching Communities and Their Environments, 300561 - Animal Research

.....

This unit is designed to help students understand and navigate their way through the scientific inquiry process, and to make inquiry a meaningful experience. It highlights the creative and strategic thinking skills needed to negotiate research, and covers the entire inquiry process from conceptualisation and design through to data collection, analysis, and report writing. The unit transcends traditional paradigmatic and disciplinary boundaries by approaching research from the ground up – a research question based perspective.

200412.3 Research Proposal and Seminar

Credit Points 10 **Level** 5

Assumed Knowledge

Students to have the basic disciplinary knowledge and skills necessary to design and undertake their honours level research project.

.....

The aim of this unit is to identify a suitable honours thesis topic, conduct a preliminary review of the relevant literature, identify research methods applicable to the study, consider any relevant ethical issues applicable to the study, devise a resource management plan and schedule of study and to seek feedback and input from academics with appropriate skills and experience in the research area. This unit gives honours students access and exposure to research communities via attendance and participation at school research seminars. Students will publicly present and defenc their thesis proposal to peers and the academic community.

300663.1 Resource Sustainability

Credit Points 10 **Level** 1

Assumed Knowledge

Basic biological sciences and an understanding of writing and referencing; a capacity to engage in group work; and a desire to participate in building a better future.

Equivalent Units

EY101A - Terrestrial Environmental Management

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Students enrolled in Resource Sustainability will work in groups employing rapid appraisal techniques to score the environmental conditions across a range of landuse categories on the UWS Hawkesbury Campus. Students will be required to design and implement an investigation of the landscape utilizing methods currently in use by relevant legislative & administrative bodies (GPS, GIS, PDT, etc). The development of skills in the area of spatial data management is an essential element in this unit. Having completed an assessment of the environmental conditions on the Campus, students will illustrate their findings and present them in both audio/visual and written reports.

300056.2 Robotics

Credit Points 10 **Level** 4

Prerequisite

300463.1 Fundamentals of Mechanics

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To develop an understanding of the basic concepts involved in Robotics. The kinematics, dynamics, control and sensing aspects in robotics will be introduced. In addition, the concepts of artificial intelligence (AI) and their applications in robotics will also be introduced. There will be considerable use of MATLAB in the unit.

300664.1 Science in Society

Credit Points 10 **Level** 2

Assumed Knowledge

Sound knowledge of the issues affecting primary industries, community health or the environment. Ability to write technical reports and experience in problem based learning approaches. Literacy skills associated with data retrieval and literature searching. Basic knowledge of group dynamics.

Equivalent Units

300283 - Community Environmental Health Action

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This unit examines the complex interaction between power, politics, ethics and scientific paradigms in the management of natural agricultural and built environments. As such its foundations are in the field of environmental studies with a particular focus on the role of science graduates in the social interactions that govern societies use, transformation and impact on these environments. The rationale for the inclusion of a sociological perspective in a science degree is that scientists do not operate in a social vacuum, but are constantly subject to broader social, economic, political, ethical and cultural influences that bear upon the distribution and exercise of power and knowledge in organisations and in society as a whole.

300615.1 Science Research Project 1

Credit Points 10 **Level** 3

Assumed Knowledge

This unit is aimed at undergraduates in their final year of undergraduate study who have a good grounding in the Level 2 units for the discipline area of their individual project (e.g. chemistry, biochemistry, microbiology, environmental science.)

Equivalent Units

300299 - Chemistry Project 3, J3659 - Biological Science Project 3, 14117 - Chemistry Project, J3662 - Chemistry Project

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300615 Science Research Project 1 may be taken in combination with 300645 Science Research Project 2 to allow suitably qualified students to complete a 20 credit-point research project during their final year of study. These units may be taken in the same semester, or in consecutive semesters. Students who wish to complete a 10 credit-point project will normally enrol in 300645 Science Research Project 2. Enrolment in 300615 requires approval by the Unit Co-ordinator of 300615. Science Research Project 1 is a final-year capstone unit that gives students an introduction to scientific research, while extending their knowledge and practical skills in a particular area of interest. Each student undertakes a small research project under the supervision of an academic staff member. Collaboration with an external organisation may occur in some projects. With the assistance of their supervisor, students will define the problem to be studied, carry out a risk assessment, develop the appropriate experimental methods, carry out research on their project, and present a final written report and a poster or oral presentation. This unit offers a challenge to final-year students, and allows innovation by the student with respect to both method and research direction. Students studying at Campbelltown campus should refer to 300542 Biomolecular Science Project.

300645.1 Science Research Project 2

Credit Points 10 **Level** 3

Assumed Knowledge

This unit is aimed at undergraduates in their final year of undergraduate study who have a good grounding in the Level 2 units for the discipline area of their individual project (e.g. chemistry, biochemistry, microbiology, environmental science.)

Equivalent Units

300299 - Chemistry Project 3, J3659 - Biological Science Project 3, 14117 - Chemistry Project, J3662 - Chemistry Project

Incompatible Units

300542 - Biomolecular Science Project

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300645 Science Research Project 2 is a final-year capstone unit that gives students an introduction to scientific research, while extending their knowledge and practical skills in a particular area of interest. Each student undertakes a small research project under the supervision of an academic staff member. Collaboration with an external organisation may occur in some projects. With the assistance of their supervisor, students will define the problem to be studied, carry out a risk assessment, develop the appropriate experimental methods, carry out research on their project, and present a final written report and a poster or oral presentation. This unit offers a challenge to final-year students, and allows innovation by the student with respect to both method and research direction. Students who wish to complete a 10 credit-point project will normally enrol in this unit. Subject to permission from the Unit Co-ordinator, students may undertake a 20 credit-point project by enrolling in both 300615 Research Project 1 and 300645 Research Project 2. These units may be taken in the same semester, or in consecutive semesters. Students studying at Campbelltown campus should refer to 300542 Biomolecular Science Project.

300412.2 Science, Technology and Environment Honours Project

Credit Points 60 **Level** 5

Assumed Knowledge

Successful completion of a Bachelors degree in a science discipline. Normally the student will have achieved a grade point average of greater than 5.0 in Level 2 and 3 units.

Special Requirements

Restriction to students enrolled in postgraduate or honours courses.

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The aim of this unit is to further develop the student's research and problem solving skills. The student is required to implement a research plan, complete a substantive piece of research in a relevant field within Science, Technology and the Environment and to communicate the results of that work to an interested and technically literate audience. Students will present their research as a thesis with a substantial chapter detailing research objectives, methodology and research outcomes. The thesis topic and structure will vary according to the area of interest of the student and the expertise of the supervisor. The project is meant to be a significant undertaking and to incorporate some element of innovation. Throughout this unit regular planned consultations between the student and supervisor (s) will occur and students will be required to attend seminar series or regular research meetings; these may be formal components of other units within the Bachelor (Honours) course. Students are expected to work to a schedule devised in consultation with their supervisor. The schedule will include dates set for progress reports and the presentation of draft chapters for review by the supervisor. The unit builds upon the skills developed in the undergraduate course, extending students' competencies in a range of practical techniques and processes of critical thinking. Students who successfully complete the Honours program will have achieved the appropriate background to enable them to pursue further postgraduate research and/ or coursework in the sciences or pursue a career in industry or profession.

400737.1 Scientific Basis of Medicine 1

Credit Points 60 **Level** 1

Corequisite

400738.1 Health Practice 1

Special Requirements

Students must be enrolled in the course 4641 Bachelor of Medicine, Bachelor of Surgery. Students must have completed a Prohibited Persons Employment Declaration; undergone a Criminal Record Check; have completed a WorkCover accredited Senior First Aid Certificate; and have an up to date Adult Vaccination Record. Students must also sign a declaration that they understand and comply with Infectious Diseases Policy, Health Records and Information Privacy Act (HRIPA) 2002; and UWS' submitting their details to the NSW Medical Board.

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The corequisite for this unit is 400738 Health Practice 1. Both units must be completed successfully in the same year, in order for you to progress to the next year of the course. If one unit is failed or if both are failed, you must repeat both together in your next year of enrolment. The major objectives of this unit are to gain an integrated understanding of the structure and function of the human body. This will be addressed at the levels of organ systems, tissues, cells and molecules. The scientific basis of the following topics will be discussed: whole body organisation including basic anatomy, roles of the major organ systems, functional organisation of cells and their specific organelles, characteristics of specialised cells, structure-function characteristics of major biological molecules including carbohydrates, lipids, proteins, enzymes and DNA, the biochemical basis of complex processes such as homeostasis, reproduction and inheritance, growth and development, defence against infectious agents, pathological changes, ageing and death. The unit then examines nutrition and metabolism before exploring the structure, function and pathology of the gastrointestinal system (including liver), cardiovascular system and respiratory system.

400739.1 Scientific Basis of Medicine 2

Credit Points 60 **Level** 2

Prerequisite

400737.1 Scientific Basis of Medicine 1 AND **400738.1** Health Practice 1

Corequisite

400740.1 Health Practice 2

Special Requirements

Students must have completed a Prohibited Persons Employment Declaration, undergone a Criminal Record Check, have completed a WorkCover accredited Senior First Aid Certificate and have an up to date Adult Vaccination Record. Students must also sign a declaration that they understand and comply with: - Infectious Diseases Policy - Health Records and Information Privacy Act (HRIPA), 2002 - UWS' submitting their details to the NSW Medical Board.

.....

The corequisite for this unit is 400740 Health Practice 2. Both units must be completed successfully in the same year, in order for you to progress to the next year of the course. If one unit is failed or if both are failed, you must repeat both together in your next year of enrolment. The major objectives are to gain an integrated understanding of the structure and function of the human body. This will be addressed at the levels of organ systems, tissues, cells and molecules. The Scientific basis of the following topics will be discussed: renal system, musculoskeletal system, neuroscience, reproduction and development, endocrinology, infectious disease and cancer.

900038.1 Scientific Method (UWSC)

Credit Points 5 **Level** Z

Special Requirements

Students must be enrolled in a UWS College Foundation Studies course.

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The unit Scientific Method is designed to encourage those intending tertiary study in science and computing to use their knowledge of science and technology, together with strategies of design, to solve practical and ideological problems.

300568.1 Services Computing in Healthcare

Credit Points 10 **Level** 3

Prerequisite

300582.1 Technologies for Web Applications AND **300566.1** Introduction to Health Informatics

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The IEEE Services Computing Community defines Services Computing as a “crossdiscipline that covers the science and technology of bridging the gap between Business Services and IT Services. The leading edge technology includes Web services and service-oriented architecture (SOA), business consulting methodology and utilities, business process modelling, transformation and integration. The goal of Services Computing is to enable IT services and computing technology to perform business services more efficiently and effectively.” (https://www.ieeecommunities.org/services). In this unit students will learn the concepts underpinning the services computing paradigm as detailed above, and will learn, through the development of practical examples, how to utilise them within a healthcare context.

400280.3 Sexuality

Credit Points 10 **Level** 3

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The unit "Sexuality" provides an opportunity to develop awareness and understanding of some facets of human sexuality through considering behaviours, values, gender & concerns from differing perspectives, with a particular focus on issues of adolescent sexuality. It uses a multi-disciplinary approach, drawing primarily from sociology, psychology, anthropology & biology.

300057.2 Signals and Systems

Credit Points 10 **Level** 2

Assumed Knowledge

300005 - Circuit Theory: this unit requires the knowledge in Laplace transforms, Calculus, Trigonometry and Complex number theory, since understanding of System theory and Fourier series and transform requires a strong background in those areas. Most of the examples and applications in this unit are based on Circuit Theory material.

Prerequisite

200238.1 Mathematics for Engineers 2

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This unit aims to develop students' understanding of continuous-time and discrete-time concepts and methods. It covers various signals and their analysis, as encountered in the fields of electrical, computer and telecommunication engineering.

200044.1 Simulation Techniques

Credit Points 10 **Level** 3

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This unit covers a general introduction to simulation modelling, with a special focus on systems that change only at discrete points in time. It begins with Monte-Carlo methods for evaluating integrals, and moves into the simulation of simple queuing and inventory systems with the use of Pascal. It then introduces special simulation languages, with special reference to SEESIM. The purpose is to be able to set up and solve simple practical problems. In doing so we emphasise the need to analyse outputs statistically, and to offer advice on the basis of the analysis. Although requiring computer programming, the emphasis of the unit is mathematical and statistical. It deals with an introduction to random number generation by computers; it also deals with the computer generation of independent random variables with a common probability distribution.

400322.1 Sociological Aspects of Sport and Exercise

Credit Points 10 **Level** 1

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The sports and the exercise industries have developed a highly sophisticated place within modern society and culture. This unit will examine sport and exercise from a sociological perspective and study the development, organisation and functioning of sport and exercise in our society. Contemporary issues in the sociology of sport and exercise will be examined within an Australian and international context.

85012.2 Soil Engineering

Credit Points 10 **Level** 2

Prerequisite

200237.1 Mathematics for Engineers 1

Equivalent Units

300731 Soil Engineering.

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This unit studies soil, and the water in it, as an engineering material. The behaviour of soil under stress is examined, the performance of clay used in a barrier system is discussed and the process of settlement with time under load is analysed.

300535.1 Soils

Credit Points 10 **Level** 1

Equivalent Units

HT102A - Soils (V1)

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This unit provides students with a basic understanding of soil formation and erosion processes, soil physical, chemical and biological properties, and the diversity and classification of soils in the Australian landscape. These basic principles are explored in relation to the sustainable management of soils for horticultural and agricultural production and for environmental management under other land uses. The practical sessions are designed to reinforce the lecture material and include field description and analysis of soil profiles and properties, soil sampling principles and practice, laboratory measurement of soil physical and chemical properties essential/important for plant growth, and an introduction to soil biology.

400358.1 Specialties in Traditional Chinese Medicine 1

Credit Points 10 **Level** 4

Assumed Knowledge

Assumed knowledge equivalent to Chinese Internal Medicine 1.

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Gynaecology and orthopaedics are important fields of clinical practice in traditional Chinese medicine. This unit enables the health professional to analyse, diagnose and treat common gynaecological diseases and musculoskeletal conditions using a TCM approach with acupuncture and Chinese herbal medicine. Students will develop a good understanding of the causes and pathophysiological mechanisms of common gynaecological diseases and musculoskeletal conditions.

400364.1 Specialties in Traditional Chinese Medicine 2

Credit Points 10 **Level** 4

Prerequisite

400357.1 Chinese Internal Medicine 1

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The specialties of pediatrics, dermatology, ear, nose, throat (ENT) and eye diseases, are important divisions of TCM activity. This unit enables students to develop an understanding of the aetiology and pathophysiology of common paediatric, dermatological, ENT and eye disorders, and to analyze, diagnose and treat these conditions using acupuncture and Chinese herbal medicine.

400331.1 Sport and Exercise Science in Practice

Credit Points 10 **Level** 3

Prerequisite

400650.1 Professional Practice in Sport and Exercise Science 2 AND **400329.1** Sports Physiology AND **400328.1** Exercise Prescription for Special Populations OR **400327.1** Exercise in Musculo-Skeletal Injury Rehabilitation

Special Requirements

Students must be enrolled in course code 4558 - Bachelor of Applied Science (Sport and Exercise Science). To

undertake this unit, students must comply with the following special requirements: Completion of a Prohibited Persons Declaration; Criminal Record Check Clearance; Provide evidence of compliance with the occupational screening and immunisation policy of NSW Health.

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This unit is being replaced by 400904 Work Experience in Sport and Exercise Science in 2012. The unit Sport and Exercise Science in Practice focuses participation and observation of Sport and Exercise Science activities in the real practice setting. Students will add to their knowledge of important issues in Sport and Exercise Science practice and further develop their ability to use the knowledge and skills developed during their previous Sport and Exercise Science course work and practical experiences. Students will be in placements where they can develop and demonstrate an ability to design, implement and evaluate exercise testing and training programs for a variety of clients in sports, community and clinical settings.

400477.1 Sport and Exercise Science Thesis A

Credit Points 10 **Level** 5

Assumed Knowledge

Completion of the Bachelor of Applied Science (Sport and Exercise Science) or equivalent.

Corequisite

400472.1 Exercise and Health Sciences Honours Seminar

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The aim of this unit is develop student's research skills. Students are to plan and complete a substantive piece of research in the field of Sport and Exercise Science and communicate the results to the professional and academic communities. Students will present the research findings as a thesis with substantial chapters detailing research objectives, literature review, research methods and research outcomes. The project may be a laboratory or field based investigation with human subjects. The project is to be a significant innovative contribution to the Sport and Exercise Science body of knowledge.

400478.1 Sport and Exercise Science Thesis B

Credit Points 40 **Level** 5

Assumed Knowledge

Completion of the Bachelor of Applied Science (Sport and Exercise Science) or equivalent.

Corequisite

400472.1 Exercise and Health Sciences Honours Seminar

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The aim of this unit is develop student's research skills. Students are to plan and complete a substantive piece of research in the field of Sport and Exercise Science and communicate the results to the professional and academic communities. Students will present the research findings as a thesis with substantial chapters detailing research objectives, literature review, research methods and research outcomes. The project may be a laboratory or field based investigation with human subjects. The project is to be a significant innovative contribution to the Sport and Exercise Science body of knowledge.

400479.2 Sport and Exercise Science Thesis C

Credit Points 20 **Level** 5

Assumed Knowledge

Completion of the Bachelor of Applied Science (Sport and Exercise Science) or equivalent.

Corequisite

400472.1 Exercise and Health Sciences Honours Seminar

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The aim of this unit is develop student's research skills. Students are to plan and complete a substantive piece of research in the field of Sport and Exercise Science and communicate the results to the professional and academic communities. Students will present the research findings as a thesis with substantial chapters detailing research objectives, literature review, research methods and research outcomes. The project may be a laboratory or field based investigation with human subjects. The project is to be a significant innovative contribution to the Sport and Exercise Science body of knowledge.

400480.2 Sport and Exercise Science Thesis D

Credit Points 20 **Level** 5

Assumed Knowledge

Completion of the Bachelor of Applied Science (Sport and Exercise Science) or equivalent.

Corequisite

400472.1 Exercise and Health Sciences Honours Seminar

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The aim of this unit is develop student's research skills. Students are to plan and complete a substantive piece of research in the field of Sport and Exercise Science and communicate the results to the professional and academic communities. Students will present the research findings as a thesis with substantial chapters detailing research objectives, literature review, research methods and research outcomes. The project may be a laboratory or field based investigation with human subjects. The project is to be a significant innovative contribution to the Sport and Exercise Science body of knowledge.

400329.2 Sports Physiology

Credit Points 10 **Level** 3

Prerequisite

400326.1 Exercise Prescription for General Populations AND **400325.1** Bioenergetics of Exercise

Special Requirements

To undertake this unit, students must comply with the following special requirement: completion of a Prohibited Employment Declaration

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This unit will be replaced by 400889 - Advanced Sports Physiology from 2012. The advanced physiology of exercise and it's application to the physiological testing of athletes is covered in this unit. Including the scientific basis underlying athlete testing and prescription; Measurement focuses upon the selection of valid meaningful tests, effective evaluation procedures and Interpretation of the results. ; performance and interpretation results of advanced physiological tests used in talent identification and the assessment of high performance athletes; scientific base in which sports specific programs are developed and implemented . Also covered are the physiolog of ergogenic aids, physiological factors limiting performance, physiological responses to exercise in challenging environments and the physiology of overtraining.

300700.2 Statistical Decision Making

Credit Points 10 **Level** 1

Equivalent Units

200192 - Statistics for Science, 200032 - Statistics for Business

Incompatible Units

200052 - Introduction to Economic Modelling, 200182 - Quantitative Techniques, 200263 - Biometry

Special Requirements

Students enrolled in 2739 Bachelor of Business and Commerce, 2741 Bachelor of Business and Commerce (Advanced Business Leadership) or 3639 Bachelor of Information and Communications Technology must pass the Basic Math Skills Test.

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This Level 1 unit introduces students to various statistical techniques supporting the study of computing and science. Presentation of the content will emphasize the correct principles and procedures for collecting and analysing scientific data, using information and communication technologies. Topics include describing different sets of data, probability distributions, statistical inference, and simple linear regression and correlation.

700041.1 Statistical Decision Making (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

300700 - Statistical Decision Making

Incompatible Units

700007 - Statistics for Business (UWSC)

Special Requirements

Students must be enrolled at UWS College.

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The unit will cover the statistical topics required for later computing study, in particular probability and combinatorics, random variables and their distributions, parameter estimation and hypothesis testing and linear regression analysis.

101369.1 Statistical Knowledge and Social Power

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge of social research at an introductory level

Equivalent Units

63027 - Statistical Knowledge and Social Power

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This unit aims to make the study of statistics meaningful to students by presenting them in the context of a social issue. It provides students with a critical understanding of the theory and practice of statistical research without complex mathematics. The lectures will examine theoretical, philosophical and social power issues related to the production and usage of statistics. The workshops will allow the students to develop a basic capacity to produce, use and manipulate statistical data.

700045.1 Statistics for Academic Purposes (UWSCFS)

Credit Points 5 **Level** Z

Special Requirements

Students must be enrolled at UWS College.

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The unit Statistics for Academic Purposes is designed and written to prepare students for study in Statistics at first year university level. The unit develops those skills peculiar to the statistical requirements of further study in the areas of Arts, Business, Science and the Humanities.

200032.1 Statistics for Business

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Mathematics or equivalent.

Equivalent Units

C1022 - Introductory Statistics, J1737 - Statistics 1.1, J1762 - Fundamentals of Statistics, ST202A - Business Statistics, 61811 - Inferential Statistics

Incompatible Units

200192 - Statistics for Science, 200263 - Biometry, 200052 - Introduction to Economic Methods, 200182 - Quantitative Techniques

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This Level 1 unit introduces the basic concepts and techniques of statistics that are particularly relevant to problem solving in business. It also provides a sound base for more advanced study in statistics and forecasting in subsequent sessions. Topics include: presentation of data; descriptive statistics; the role of uncertainty in business decision making; hypothesis testing; and basic forecasting.

200032.2 Statistics for Business

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Mathematics / Mathematics Extension 1 is desirable.

Prerequisite

300589.1 Mathematics Toolbox OR **300691.1** Mathematical Reasoning

Equivalent Units

C1022 - Introductory Statistics, J1737 - Statistics 1.1, J1762 - Fundamentals of Statistics, ST202A - Business Statistics, 61811 - Inferential Statistics

Incompatible Units

200192 - Statistics for Science, 200052 - Introduction to Economic Methods, 200182 - Quantitative Techniques, 200263 - Biometry, 300700 - Statistical Decision Making

Special Requirements

Students must pass the Basic Math Skills Test or have passed the unit 300589 Mathematical Toolbox or 300691 Mathematical Reasoning prior to attempting this unit. Students must pass 70% or more in an online Basic Maths Skills Test prior to attempting this unit. To access this test, you will need your UWS student ID number, and have access to the Basic Maths Skills Test vUWS site.

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This Level 1 unit introduces the basic concepts and techniques of statistics that are particularly relevant to problem solving in business. It also provides a sound base for more advanced study in statistics and forecasting in subsequent sessions. Topics include: presentation of data; descriptive statistics; the role of uncertainty in business decision making; hypothesis testing; and basic forecasting.

700007.1 Statistics for Business (UWSC)

Credit Points 10 **Level** 1

Equivalent Units

200032 - Statistics for Business

Special Requirements

Students must be enrolled at UWS College.

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This unit introduces the basic concepts and techniques of statistics that are particularly relevant to problem solving in business. It also provides a sound base for more advanced study in statistics and forecasting in subsequent sessions. Topics include: presentation of data; descriptive statistics; the role of uncertainty in business decision making; hypothesis testing; and basic forecasting.

200192.1 Statistics for Science

Credit Points 10 **Level** 1

Assumed Knowledge

HSC Mathematics or equivalent.

Equivalent Units

14324 - Statistics 1, 14327 - Statistical Methods, 200032 - Statistics for Business, J1730 - Mathematics 1.2, ST003A - Statistics 1.2D, ST109A - Statistics 1.1, 200263 - Biometry, 300700 - Statistical Decision Making

.....

This Level 1 unit introduces the basic concepts and techniques of statistics that are particularly relevant to problem solving in science and technology. It also provides a sound base for more advanced study in statistics in subsequent sessions. Topics include: presentation of data; descriptive statistics; the role of uncertainty in decision making; hypothesis testing; and simple linear regression.

85014.3 Steel Structures (UG)

Credit Points 10 **Level** 3

Prerequisite

85006.2 Introduction to Structural Engineering

Equivalent Units

300730 - Steel Structures

Special Requirements

Co-requisite unit 85010.1 - Structural Analysis

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This unit covers the basic behaviour of steel members and structures, the appropriate methods to analyse them and the design criteria and methods used to proportion them.

85010.1 Structural Analysis

Credit Points 10 **Level** 3

Prerequisite

85006.2 Introduction to Structural Engineering

Equivalent Units

300732 - Structural Analysis

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This unit introduces students to aspects of structural analysis of trusses, beams and frames. It covers the first-order elastic analysis of statically determinate and indeterminate structures. It aims to teach students to master basic skills in structural analysis as well as skills in using computer software to analyse complex structures.

400187.1 Supervision in Clinical Practice

Credit Points 10 **Level** 3

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This unit will provide an introduction to supervision of students in clinical practice settings. Students will have an opportunity to consider clinical education from a supervision perspective. This will provide them with beginning supervisory skills that can be utilised clinical settings in the early stages of their professional career.

85003.1 Surveying for Engineers

Credit Points 10 **Level** 1

Equivalent Units

300738 - Surveying for Engineers

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This unit provides: basic surveying principles; surveying practice for levelling, traversing and feature surveys, and the principles for setting out horizontal and vertical curves and buildings; an introduction to maps and map projections; and an introduction to modern surveying hardware and software.

200039.1 Surveys and Multivariate Analysis

Credit Points 10 **Level** 3

Assumed Knowledge

200192 - Statistics for Business, 200032 - Statistics for Science

Equivalent Units

J3693 - Sample Survey Techniques, J3692 - Regression and Multivariate Analysis

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In the first half of this unit students gain an appreciation of survey methodology, including questionnaire design, as well the application of sampling techniques. These include simple random sampling, stratification, supplementary information and cluster sampling. The second half of the unit covers the principal methods of multivariate data analysis, principal components, factor analysis, discriminant analysis, and cluster analysis.

300309.2 Sustainable Design: Life Cycle Analysis

Credit Points 10 **Level** 2

Assumed Knowledge

Knowledge related to the successful completion of Year 1 would be of advantage and is assumed.

Equivalent Units

J2806 - Manufacturing Technology and Design, 10910 - Environmental Planning 1

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Designers prescribe the use of our limited materials resources with every product that transpires from their work. With an informed approach to design, based on a sound knowledge of materials from their origins to their disposal as well how those materials are utilised in existing contexts of use, a designer can maximise the positive impact of their designing on local and global communities. In this unit students will develop an understanding of the central importance of design in developing a more sustainable world on both production and consumption sides. They will reflect critically on their role as both designers and end-users and will exercise their creative intuition to confidently generate and present designs for sustainability. The aim of the unit is to enhance students' ecological literacy and perception of sustainability as a creative opportunity.

300304.2 Sustainable Design: Materials Technology

Credit Points 10 **Level** 1

Equivalent Units

300304 - Sustainable Design 1: Materials Technology, J1758 - Engineering Design, J2807 - Materials Technology, J2817 - Manufacturing Processes and Materials

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In this unit we explore materials from a design perspective - their properties, qualities, typical applications, their cost and the environmental impact associated with their extraction, use and disposal. We also look at how they can be formed using contemporary and emerging processing techniques - from sand casting to rapid prototyping. Lectures are supplemented with live demonstrations of materials processing techniques and students undertake materials research and a design for manufacture project.

300306.2 Sustainable Design: Sustainable Futures

Credit Points 10 **Level** 2

Assumed Knowledge

300309 - Sustainable Design: Life Cycle Analysis

Equivalent Units

10913 - Environmental Planning 2

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If science and planning march under the banner of "everything is possible", design culture must know how to point out a path for these potential possibilities, a path that can be completely opposed to that which technological – scientific development has followed up to now. This unit explores the challenges facing design culture in which the designer must now provide scenarios that visualise some aspects of how the world could be and, at the same, time, present it with such characteristics that can be supported by complex ecological equilibria, which are acceptable socially and attractive culturally.

700013.1 System Analysis and Design (UWSC)

Credit Points 10 **Level** 1

Assumed Knowledge

Students should have knowledge of the fundamentals of information systems, computer systems, computer applications and information processing

Equivalent Units

300131 - Introduction to Analysis and Design, 300585 - System Analysis and Design

Special Requirements

Students must be enrolled at UWS College.

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This unit provides an introduction to systems analysis and design. Incorporating systems concepts, theories and methodologies, this unit provides students with elementary problem solving experience in computerised information

systems. Students will gain the ability to derive systems requirements from problem definitions and to produce system models using process, data, object and network modelling. Design and implementation issues include, (but may not be limited to), elementary database design, input, output and user interface design and prototyping. Students are also introduced to roles and responsibilities in information systems development, selection of packaged solutions and the principles of software quality.

300165.1 Systems Administration Programming

Credit Points 10 **Level** 3

Prerequisite

300167.1 Systems Programming 1

Corequisite

300149.1 Operating Systems

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This unit covers programming techniques and tools used to administer standalone and networked computer systems. The unit focuses on the use of high level interpretive scripting languages to automate everyday administrative tasks, and to monitor and control running systems. Techniques to extend scripting language capabilities by dynamic linking to compiled code are examined, particularly in terms of access to operating system level functions. The unit also examines the use of administrative programs and tools to monitor and adjust system performance and capacity.

300585.1 Systems Analysis and Design

Credit Points 10 **Level** 1

Assumed Knowledge

Students should have knowledge of the fundamentals of information systems, computer systems, computer applications and information processing

.....

This unit provides an introduction to systems analysis and design. Incorporating systems concepts, theories and methodologies, this unit provides students with elementary problem solving experience in computerised information systems. Students will gain the ability to derive systems requirements from problem definitions and to produce system models using process, data, object and network modelling. Design and implementation issues include, (but may not be limited to), elementary database design, input, output and user interface design and prototyping. Students are also introduced to roles and responsibilities in information systems development, selection of packaged solutions and the principles of software quality.

300166.1 Systems and Network Management

Credit Points 10 **Level** 3

Assumed Knowledge

Students should be familiar with the fundamentals of computer networking and data communications.

Prerequisite

300095.1 Computer Networks and Internets

Equivalent Units

14979 - Network and Systems Management

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The rapid progress in technology, the increasing demand for IT services, and the strong expansion of the Internet have resulted in heterogeneous interconnected networks with many distributed systems that run on them. To ensure access and efficient utilization of network resources, subject to organisational policy restrictions, networked systems must be managed properly. This unit addresses the issues relevant to such management. It covers the principles and current practices pertinent to integrated management of networks, systems, services, and applications. The unit helps the student to understand management functions and architectures as well as current standards and relevant protocols.

300167.1 Systems Programming 1

Credit Points 10 **Level** 2

Prerequisite

300125.1 Fundamentals of Computer Science AND **300405.1** Fundamentals of Programming OR **300155.1** Programming Principles 1 AND **300156.1** Programming Principles 2 OR **300018.1** Digital Systems 1 AND **300027.1** Engineering Computing

Equivalent Units

14943 - Systems Programming 1, J2822 - Unix System Programming 1

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This unit provides an introduction to the knowledge and skills required for the design, writing and support of technical software and other such functions normally falling within the role of the systems programmer. It provides for detailed study of a systems programming environment and its application to systems programming tasks.

300167.2 Systems Programming 1

Credit Points 10 **Level** 2

Assumed Knowledge

This unit requires a knowledge base of at least the level of a completed first year in a professional Computing degree. Ability to apply fundamental concepts in data structures, algorithms, programming principles will be assumed.

Prerequisite

300580.1 Programming Fundamentals OR **300027.1** Engineering Computing AND **300018.1** Digital Systems 1

Equivalent Units

14943 - Systems Programming 1, J2822 - Unix System Programming 1

Special Requirements

For course 3621 B Eng, before students can enrol in 300167 they must be enrolled in one of the key programs attached to the course, currently KP3621CIVI, KP3621COMP, KP3621ELEC, KP3621ENVI, KP3621R&M, KP3621TELE.

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This unit provides an introduction to the knowledge and skills required for the design, writing and support of technical software and other such functions normally falling within the role of the systems programmer. It provides for detailed study of a systems programming environment and its application to systems programming tasks.

300168.1 Systems Programming 2

Credit Points 10 **Level** 3

Prerequisite

300167.1 Systems Programming 1

Corequisite

300149.1 Operating Systems

Equivalent Units

14963 - Systems

.....

This unit complements and extends the work already done in Systems Programming 1. It covers advanced topics in programming that are directly relevant to systems level application design and implementation. As such it addresses the main concepts, principles, and techniques for system level programs that utilise virtual memory, dynamic link libraries, asynchronous I/O, and multi-threading that can support high levels of concurrency. The unit also emphasises and builds a sound understanding of kernel level objects, as well as error and exception handling techniques, and focuses primarily on using the low-level functionality exposed by the operating system's C/C++ language API.

300582.1 Technologies for Web Applications

Credit Points 10 **Level** 2

Assumed Knowledge

Basic programming principles and program control structures equivalent to that covered in Programming Fundamentals. Basic file management and PC operation including how to access and search the World Wide Web.

Prerequisite

300580.1 Programming Fundamentals

Equivalent Units

300129 - Interactive Web Site Development, J2826 - Internet and Web Communications, D2826 Internet and Web Communications

Incompatible Units

300101 - Creating and Managing Web Sites, CP108A - Principles of the Internet, 101180 - Web and Time Based Design

.....

Building on material covered in Programming Fundamentals this unit introduces students to the basics of developing interactive and dynamic web applications from both the client and server perspective. The unit covers web site design, web site development, web page accessibility and usability, XHTML, CSS, client side and server side scripting, database interaction, web site promotion (SEO), legal issues and web security.

101279.1 Technology, Equity and Education: Local and Global

Credit Points 10 **Level** 3

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This unit examines contemporary issues relating to innovation and change in the use of Information Communication Technologies. As knowledge becomes increasingly globalised, contested, and rapidly changes, the role of knowledge workers changes. Students will examine and reflect on the implications for individuals, students, teachers, employment teams and employers. Contemporary pedagogies and tools that maximise the potential of ICT's are introduced and applied and examined using an ethical perspective. Ethics and equity issues relating to ICT availability and use are critically examined.

EY101A.1 Terrestrial Environment Management

Credit Points 10 **Level** 1

Equivalent Units

300663 - Resource Sustainability

.....

This unit includes lectures, seminars, group discussions and field activities pertinent to catchment management, landuse and environmental impacts. Content covers mapping spatial data management, impact assessment, State of the Environment reporting, rapid appraisal techniques, Ecologically Sustainable Development, using science as a tool, teamwork, analysis and critical reflection. It also involves the integration of the biophysical environment with the investigation of the impacts of man and implications of the socio-political interface.

300755.1 The Appendicular Skeleton

Credit Points 10 **Level** 2

Equivalent Units

E2311 - Human Biological Sciences III, 300325 - The Appendicular Skeleton

.....

This unit provides a thorough understanding of the topographic anatomy of the human upper and lower limbs, including their respective girdles. It undertakes this by utilising a regional approach (as against a systems approach), emphasising the interplay of the different body systems within the appendicular. The relationship between form and function at a topographic level, will underpin all teaching of this unit.

400254.1 Therapeutic Recreation Professional Project

Credit Points 10 **Level** 3

Prerequisite

400137.1 Introduction to Research for Health Sciences AND **400247.1** Programming Therapeutic Recreation

.....

The aim of this unit is for students to apply their knowledge of professional theory, practice, research and evaluation skills to the investigation of a therapeutic recreation professional issue. Emphasis in the unit is on the development of a research/evaluation proposal through literature review and research design outline of a program with a proposed method of evaluation suitable for use in a community setting.

85015.2 Timber Structures (UG)

Credit Points 10 **Level** 1

Prerequisite

85006.2 Introduction to Structural Engineering

Corequisite

85010.1 Structural Analysis

Equivalent Units

300739 - Timber Structures (UG)

.....

Timber is introduced as a construction material. Engineering properties and methods of assessment are examined with an eye toward practical usage of timber. Design methods based on sound structural mechanics are covered including the design of members and connections.

200038.1 Time Series and Forecasting

Credit Points 10 **Level** 3

Assumed Knowledge

200192 - Statistics for Science, 200032 - Statistics for Business, 200263 - Biometry

Equivalent Units

J3697 - Time Series and Forcasting, 14372 - Time Series

Incompatible Units

200041 - Applied Regression Analysis and Forecasting

.....

This Level 3 unit presents the basic techniques of time series analysis with emphasis on model identification, parameter estimation and diagnostic checking. The use of time series models for the process of forecasting future behaviour is discussed. In addition, alternative forecasting approaches, in particular econometic methods, are introduced and some guidelines for choosing an appropriate forecasting method are outlined.

300756.1 Topics in Physiology

Credit Points 10 **Level** 3

Assumed Knowledge

300320 - Introduction to Human Physiology or equivalent unit.

Prerequisite

300320.1 Introduction to Human Physiology OR **BC206A.1** Human Physiology 2.2

Equivalent Units

BC306A - Human Physiology 3.1, 300326 - Topics in Physiology

.....

This unit is an extension of 'Human Physiology 1: Introduction to Human Physiology'. It provides greater depth and breadth of understanding of aspects of whole-body physiology. Topics may include, but are not limited to, locomotion, sleep, reproductive technology, psychoneuroimmunology, interactions with others or the environment, the life cycle.

300627.1 Toxicology

Credit Points 10 **Level** 2

Equivalent Units

EH217A - Toxicology

.....

Toxicology is the study of toxicants or poisonous substances: their nature, effects on the human body, and on human, animal and plant populations. Poisonous substances have been used by humans from antiquity for both beneficial and malevolent purposes and today a vast array of toxic industrial chemicals are produced. Both accidental (workplace and environmental) and intentional (forensic) exposure are covered, in terms of group properties, toxicity, exposure potential, health impact and intervention. Forensic case studies are also addressed. Students ultimately carry out a toxicological audit of an operation or premises of their choice, meeting a range of disciplinary interests and needs.

400346.1 Traditional Chinese Medicine 1

Credit Points 10 **Level** 1

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This unit provides a comprehensive introduction to traditional Chinese medicine (TCM). Students are introduced to basic TCM theory, and the physiological principles of the diagnostic system that forms the basis of TCM practice. The history and philosophy of Chinese medicine is introduced and discussed in the light of contemporary clinical practice.

400348.1 Traditional Chinese Medicine 2

Credit Points 10 **Level** 1

Assumed Knowledge

Prior knowledge equivalent to Traditional Chinese Medicine 1.

.....

This unit provides learning experiences that enable students to expand upon their understanding of TCM philosophy and principles, with particular reference to developing diagnostic skills in TCM. Students acquire basic skills in case history taking, interpretation of relevant signs and symptoms, arriving at a TCM diagnosis, and devising suitable treatment strategies.

400352.1 Traditional Chinese Medicine 3

Credit Points 10 **Level** 2

.....

This unit enables students to develop a sound understanding of causes of disease in TCM with a particular focus on disease pattern differentiation. This is complemented by the reinforcement of skills in case history taking and TCM diagnostics.

400354.1 Traditional Chinese Medicine Practice 1

Credit Points 10 **Level** 3

Assumed Knowledge

Assumed knowledge equivalent to Traditional Chinese Medicine 3, and Acupuncture 2, and Chinese Herbal Medicine 2.

Special Requirements

To undertake this unit, students must comply with the following special requirements: Completion of a Prohibited Persons Declaration; Criminal Record Check Clearance; Students must possess a current, Workcover Authority approved First Aid Certificate;

.....

This unit is focused on introductory clinical practice in a clinical setting. It enables the student to link theory with practice. It expands the students' knowledge base of acupuncture and Chinese herbal medicine, as well as TCM theory and diagnostics. Students assist with clinical practice and may perform basic acupuncture related techniques.

400356.1 Traditional Chinese Medicine Practice 2

Credit Points 10 **Level** 3

Assumed Knowledge

Assumed knowledge and experience equivalent to Traditional Chinese Medicine Practice 1.

Special Requirements

To undertake this unit, students must comply with the following special requirements: Completion of a ProhibitedEmployment Declaration; Criminal Record Check Clearance; Students must possess a current, Workcover Authority approved First Aid Certificate;

.....

This unit is focused on clinical practice in a clinical setting. It enables the student to link theory with practice. It expands the students' knowledge base of acupuncture and Chinese herbal medicine, as well as TCM theory and diagnostics. Students facilitate clinical practice and perform a wide range of acupuncture and related techniques, in addition to basic herbal prescribing.

400359.1 Traditional Chinese Medicine Practice 3 (Research Project)

Credit Points 10 **Level** 4

Assumed Knowledge

Assumed knowledge equivalent to Introduction to Research for Health Sciences, and TCM Practice 2.

Special Requirements

To undertake this unit, students must comply with the following special requirements: Completion of a Prohibited Employment Declaration; Criminal Record Check Clearance; Students must possess a current, Workcover Authority approved First Aid Certificate;

.....

This unit represents a continuation of the clinical practicum and development of clinical skills. Students will also be able to apply their knowledge of professional theory, practice, research and evaluation skills to the investigation of TCM problems. In addition to clinical practice, emphasis here will be on the development of a literature review, and the formulation of a research or evaluation proposal. Students will be expected to demonstrate competence in handling patients in a clinical context, prepare and present a research proposal at a professional level, critically examine issues in acupuncture and Chinese herbal medicine research.

400362.1 Traditional Chinese Medicine Practice 4

Credit Points 10 **Level** 4

Assumed Knowledge

Assumed knowledge and skills equivalent to TCM Practice 3.

Special Requirements

To undertake this unit, students must comply with the following special requirements: Completion of a Prohibited Employment Declaration; Criminal Record Check Clearance; Students must possess a current, Workcover Authority approved First Aid Certificate;

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This unit represents a continuation of the clinical practicum and development of clinical skills. Students will be able to integrate their theoretical knowledge, practice skills and research base to the investigation, diagnosis and supervised treatment of patients in a clinical context. Students will be able to synthesise knowledge and competency in the practice of clinical areas of focus taught in Chinese Medicine I and II, and Specialties in TCM I and II. Students will be expected to demonstrate competence in handling patients in a clinical context, and manage their integrated care using TCM.

400764.2 Transition to Graduate Practice

Credit Points 10 **Level** 3

Assumed Knowledge

All other units in Bachelor of Nursing offered in Year 1, 2 and Autumn Year 3

Prerequisite

400745.1 Nursing for Health and Wellbeing AND **400749.1** Nursing and Health Breakdown AND **400753.1** Medical-Surgical Nursing 1 AND **400757.1** Medical-Surgical Nursing 2 AND **400759.1** Mental Health Nursing 1

Corequisite

400762.1 Mental Health Nursing 2 AND **400761.1** Family Health Care: High Acuity Nursing

Equivalent Units

400064 - Nursing Context 7

Special Requirements

Special Requirements are those stipulated by the NSW Health and UWS. At present these include: Prohibited Employment Declaration (PED); Criminal Record Check (CRC); Adult Health Immunisation and Workcover accredited Senior First Aid Certificate.

.....

This unit explores the transition to graduate practice from undergraduate nursing student to graduate professional registered nurse focusing on the role, responsibilities, accountabilities and options for the registered nurse.

400746.2 Understanding Good Health

Credit Points 10 **Level** 1

Assumed Knowledge

Knowledge of basic chemistry, phsyics and bioscience.

Equivalent Units

400047 - Nursing Science 2

.....

This unit introduces the student to concepts and mechanisms involved in normal body functions and the maintenance of normal activities of living that inform professional nursing practice.

300642.1 Understanding Landscape

Credit Points 10 **Level** 1

Equivalent Units

HT103A - Understanding Landscape

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A holistic, systemic understanding of the nature of landscape is fundamental to the land and water management professions. Drawing upon examples from the Sydney Basin, this unit will introduce students to the complex interrelationships between biophysical, social and cultural factors which determine the ever changing character of the landscapes we experience around us. Through a series of urban and rural field studies, students will be encouraged to develop an understanding of the formative factors of landscape and their interaction, a sensitivity toward diverse and often conflicting landscape values, and a capacity for landscape description emphasising spatial interpretation.

400183.1 Upper Limb Rehabilitation Following Stroke

Credit Points 10 **Level** 3

Prerequisite

400171.1 Occupation and Neurology

.....

People with neurological conditions commonly lose the ability to use their hand and arm. The impairments and resulting disability can impact on a person's occupational performance, and their participation in chosen activities and life roles. In this unit, students will learn how to analyse and retrain components of upper limb performance, particularly reach, grasp and in-hand manipulation. A movement science approach will be used, requiring students to read and critique motor control, motor learning, and muscle biology literature, as well as current best evidence in rehabilitation.

300471.1 Urban Development Systems

Credit Points 10 **Level** 3

Equivalent Units

BG202A.1 Urban Development Systems

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This unit will explore the relationships between community, the natural environment and government within an urban context. Students will examine means of investigating communities and establishing their needs. They will look at ways that this information can be mapped and translated into a graphic representation, including the use of GIS. Urban Development Systems will explore the principles of sustainability and then look at ways that community needs are provided for within an urban environment while seeking to meet sustainability objectives. The unit will examine infrastructure and service needs to support human settlements as well as government assessment systems and legislation. Students will investigate community power, political systems and how this can influence government to deliver beneficial outcomes.

300470.1 Vertebrate Biodiversity

Credit Points 10 **Level** 3

Assumed Knowledge

Satisfactory completion of first-year degree level Biology.

Equivalent Units

300217 - Animal Form and Function

.....

This unit will begin with an introduction to the evolutionary placement of the vertebrates and the relative age and importance of the different groups. The focus will then shift to an investigation of the comparative anatomy, function and behaviour from an evolutionary perspective. There will be a particular emphasis on environmental adaptations.

MG309A.1 Water and Waste Management

Credit Points 10 **Level** 3

Assumed Knowledge

This unit will build upon knowledge and skills gained in Year 1 and Year 2 Microbiology and Chemistry units

.....

Water is arguably the most important natural resource in the world, since without it life cannot exist and industry cannot operate. Unfortunately, the liquid and solid wastes from anthropogenic activities continually jeopardise water quality and the environment. This unit will develop and integrate physical, chemical and biological process understanding of water pollution and waste management. The biotechnology of nutrient transformation in waste

treatment, waste minimisation and value-added opportunities will be emphasised.

85009.2 Water Engineering

Credit Points 10 **Level** 2

Prerequisite

200237.1 Mathematics for Engineers 1 AND **300464.1** Physics and Materials

Equivalent Units

300740 - Water Engineering.

.....

The unit provides a working knowledge of the basic principles of fluid flow. It covers the general principles of engineering hydraulics. The theories learned in classes are reinforced in laboratory sessions.

300635.1 Water Quality Assessment and Management

Credit Points 10 **Level** 2

Assumed Knowledge

Undergraduate level 1 biological science.

Equivalent Units

EY211A - Water Quality Assessment and Management, EY205A - Principles of Soil and Water Management, EN302A - Water and Wastewater, 300528 - Water in the Landscape

Special Requirements

EY104A - Management of Aquatic Environments OR EY813A - Management of Aquatic Environments OR 300633 - Management of Aquatic Environments

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This unit introduces students to a range of concepts from the protection of aquatic environments in terms of the need to monitor and maintain water quality to the application of biological, chemical and physical methods of maintaining the suitability of water quality to meet its use criteria. The unit covers the healthy aquatic environment, pollutants and their sources, health and ecological impacts of water quality degradation, the use of legislation, regulation, policy, guidelines and standards. The concept of water in catchments and catchment management principles are introduced. The fundamental objective in the unit is to broadly address integrated urban water cycle management and explore several case studies through field visits. The unit seeks to develop graduate competencies in water monitoring, regulation, treatment and management. The unit is particularly applicable to those students who are interested in achieving the status of authorised officers with the regulatory authorities.

85020.2 Water Resources Engineering (UG)

Credit Points 10 **Level** 4

Prerequisite

85009.2 Water Engineering

Equivalent Units

300734 - Water Resources Engineering (UG)

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This unit introduces the aspects of water engineering that relate to water as a resource. It builds on the work in 85009 - Water Engineering and 85017 - Foundations and Drainage.

101180.1 Web and Time Based Design

Credit Points 10 **Level** 2

Assumed Knowledge

Introductory level understanding of and skills in design principles particularly basic layout, colour and typographic knowledge. Digital basics including working in a networked environment on a Macintosh computer. Ability to manage, transport and store digital information.

Equivalent Units

100605 - Web and Time Based Production Technology

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Through lectures students develop an understanding of fundamental concepts and processes inherent in designing for on online environment. Students also develop fundamental computer software skills and design understandings appropriate to that medium using the major web software packages and develop a working understanding of production literacies for online design. Students will engage in practical studies of web authoring using HTML, Dreamweaver, image optimisation using Fireworks or Imageready. Emphasis will be placed on understanding the roles, functions and features of each software package in the design production context of online delivery, integrated use, and a working understanding of the responsibilities inherent in the digital production process.

300583.1 Web Systems Development

Credit Points 10 **Level** 3

Assumed Knowledge

- Systems Analysis and Design (or equivalent) - Ability to develop a dynamic web page using data retrieved from a database and save data entered on to a Web based form in to a database.

Prerequisite

300582.1 Technologies for Web Applications

Equivalent Units

300085 - Advanced Web Site Development

.....

In this unit students will learn how to build a Web based information systems using programming, database, networking and web technologies that they have learned in other units. Students will learn about various web system architectures and development methodologies that can be used when developing web based information systems. Students will also learn about how to model, design and implement different aspects of Web based information systems.

300665.1 Wildlife 2

Credit Points 10 **Level** 2

Equivalent Units

300561 - Animal Research

Special Requirements

Students must be enrolled in course 3640 Bachelor of Science and Key Program KT3016 Animal Science or former equivalent course. All activities in the unit involving live animals must be approved by the UWS Animal Care and Ethics Committee. All activities in the unit involving the use of animal specimens must be approved by the UWS Institutional Biosafety and Radiation Safety Committee.

.....

This unit will introduce and immerse students in areas of wildlife management and research. From developing report protocols to result analysis and documentation, groups of students will manage projects in collaboration with UWS and external agencies with a variety of wildlife species.

300342.1 Wines and their Appreciation

Credit Points 10 **Level** 1

.....

This unit is a general introduction to wines, their history, basic production techniques and place in society and health. Students will develop a knowledge and understanding of wine regions, types and styles from around the world with a focus on the wines of Australia. The unit is taught online with attendance required at one wine appreciation workshop where students will learn how to taste and evaluate wines.

300065.1 Wireless Communications

Credit Points 10 **Level** 3

Assumed Knowledge

The students should have a good understanding of signals and systems, probability and random processes and fundamentals of communication systems.

Prerequisite

300057.1 Signals and Systems AND **300007.1** Communication Systems OR **300010.1** Data Networks

Equivalent Units

84449.1 Advanced Communications Systems or 300017.1 Digital Communication Engineering

.....

The unit covers the analysis, design and operation of modern wireless communication systems. The primary focus is on the physical layer and hardware, emphasizing the fundamentals of coding and modulation, spread spectrum and multiple access techniques. Current wireless architectures and mobile communication systems are also covered.

300065.2 Wireless Communications

Credit Points 10 **Level** 3

Assumed Knowledge

The students should have a good understanding of signals and systems, probability and random processes and fundamentals of communication systems.

Prerequisite

200242.1 Mathematics for Engineers 3 AND **300007.1** Communication Systems OR **300010.1** Data Networks

Equivalent Units

300017 - Digital Communication Engineering

.....

The unit covers the analysis, design and operation of modern wireless communication systems. The primary focus is on the physical layer and hardware, emphasizing the fundamentals of coding and modulation, spread spectrum and multiple access techniques. Current wireless architectures and mobile communication systems are also covered.

HC318A.1 Women's Health

Credit Points 10 **Level** 3

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This unit provides students with a forum to examine issues of women's health from a Primary Health Care perspective.

101326.1 Work-based Learning Project: Humanitarian, Peace and Health Studies

Credit Points 20 **Level** 3

Equivalent Units

101571 - Peace & Development Project

Incompatible Units

400281 - Workbased Learning Project: Humanitarian and Health Studies

Special Requirements

Students must be enrolled in either course 1634 Bachelor of Social Science, 4548 Bachelor of Health Studies (Social Health Studies) or 4545 Bachelor of Health Science to be eligible to enrol in this unit. Students enrolled in 1634 Bachelor of Social Science (Humanitiarian and Peace Studies major only) the following pre-requisites apply: 400673 - Inequality and Human Rights, 101338 - Peace, Sustainability and World Futures Students enrolled in 4545 Bachelor of Health Science (Social Health Studies) the following pre-requisites apply: 400088 - Critical Qualitative Research, 101369 - Statistical Knowledge and Social Power including 140 credit points Depending on the professional placement some students may be required to undergo police checks.

.....

The Humanitarian and Peace Studies Specialisation focuses upon the inequities of power, wealth and opportunity, and the results of conflicts both local and international. These inequities and conflicts result in marginalization and suffering of minority groups. This unit is

the Capstone Unit in this major and considers the nature of inequalities as they manifest in both social and work environments. The focus is upon developing programs of redress for these inequalities and strategies for peaceful resolutions.

400246.2 Workplace Learning 1 (Therapeutic Recreation)

Credit Points 10 **Level** 2

Prerequisite

400783.1 Professional Pathways in Health Science

Special Requirements

Students will need to have submitted a Criminal Record Check. This unit is restricted to Therapeutic Recreation students only.

.....

This unit provides students with the opportunity to apply theoretical and practical knowledge and skills gained in the course to develop their practice and professional behaviours in a therapeutic recreation workplace setting.

400252.1 Workplace Learning 2 (Community Placement)

Credit Points 10 **Level** 3

Assumed Knowledge

Workplace Learning 1

Prerequisite

400246.1 Workplace Learning 1 (Therapeutic Recreation)

Special Requirements

This unit is only available to Therapeutic Recreation students.

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This unit provides students with the opportunity to experience the practice of therapeutic recreation/ diversional therapy through supervised needs assessment, problem identification, program planning, implementation and evaluation in a range of distinct therapeutic service setting. Identify and provide services for people from special populations such as culturally and linguistically diverse (CALD), refugees and trauma victims, indigenous people, older people, people with learning problems and high risk populations. Students are to explore the advocacy and support needs of the clients receiving services. Students will explore issues related to quality supervision and their own learning styles as they develop learning contracts to be used in the workplace learning setting.

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