NATS 2002 ADVANCED SCIENCE PROJECT B

Credit Points 10

Legacy Code 300938

Coordinator Sabine Piller (https://directory.westernsydney.edu.au/search/name/Sabine Piller/)

Description This subject continues the students' training in thinking as a research scientist whilst developing analytical and critiquing skills in a range of science disciplines. In this subject, students gain theoretical knowledge of common methods and techniques and choose to gain hands-on experience in interdisciplinary laboratory sessions, focusing on current techniques and methods in a range of science disciplines including but not limited to cell and molecular biology, chemistry, physics, biomedical science, microbiology, anatomy and physiology, and nutrition. Students will develop a strong foundation in understanding the relationship between practical techniques and data quality and reliability, which is crucial for validating research outcomes. Training in laboratory notebook best practices will be provided, emphasising the importance of accurate record-keeping in both academic and industrial research settings. Students will prepare summaries of research findings, project proposals, and progress reports from their chosen laboratory sessions using discipline-specific formats and notation. By engaging in discussions, feedback, and data analysis, students will enhance their scientific communication, presentation, and collaborative decision-making skills.

School Science

Discipline Natural and Physical Sciences, Not Elsewhere Classified.

Student Contribution Band HECS Band 2 10cp

Check your fees via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Undergraduate Level 2 subject

Pre-requisite(s) NATS 2001

Restrictions

Students must be enrolled in 3757 Bachelor of Advanced Science or 3758 Bachelor of Advanced Medical Science or 3562 Bachelor of Science (Advanced Science) or 3682 Bachelor of Medical Science (Advanced Science) or 3683 Bachelor of Natural Science (Advanced Science) and have successfully completed 60 credit points.

Learning Outcomes

On successful completion of this subject, students should be able to:

1. Articulate current practices of experimental design and methodology in a chosen discipline
2. Work safely in a laboratory setting and maintain accurate and complete records
3. Collect, analyse, interpret and present data in a discipline appropriate format
4. Apply skills in testing conflicting ideas through evidence-based discussions within a collaborative group setting
5. Reflect on the development of skills in experimental design and analysis and collaboration in the context of professional competencies

Subject Content

1. Design and execution of experimental methods in a variety of science disciplines
2. Safety protocols and procedures and accurate record keeping in a laboratory environment
3. Collection, analysis and presentation of research findings
4. Communication and skills development through collaborative, evidence-based discussion in laboratory research group settings
5. Designing experiments by applying accepted discipline-specific practice, sustainability, critical thinking, and problem-solving

Special Requirements

Essential equipment

Access to a computer and the internet. This subject involves laboratory-based learning activities in which laboratory PPE including an approved lab coat, enclosed footwear, safety goggles and hair ties for beyond-shoulder-length hair are required

Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Type	Length	Percent	Threshold	Individual/ Group Task	Mandatory
Practical	Practical 8 weeks prac rotations and report	30	N	Group/ Individual	N
Presentatio	Oral presentatio	40	N	Individual	N
Portfolio	Proposal of next experimental steps and reflection	30	N	Individual	N

Prescribed Texts

- NULL
- There are no textbooks for this subject; students will use a variety of books and journals based on the topic chosen

Teaching Periods

Spring (2025)

Campbelltown

Hybrid

Subject Contact Sabine Piller (https://directory.westernsydney.edu.au/search/name/Sabine Piller/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=NATS2002_25-SPR_CA_3#subjects)

Hawkesbury

Hybrid

Subject Contact Sabine Piller (https://directory.westernsydney.edu.au/search/name/Sabine Piller/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=NATS2002_25-SPR_HW_3#subjects)

Parramatta - Victoria Rd

Hybrid

Subject Contact Sabine Piller (https://directory.westernsydney.edu.au/search/name/Sabine Piller/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=NATS2002_25-SPR_PS_3#subjects)