COMP 0001 INTRODUCTORY PROGRAMMING (WSTC PREP)

Credit Points 10

Legacy Code 700204

Coordinator Zdenka Misanovic (https://directory.westernsydney.edu.au/search/name/Zdenka Misanovic/)

Description The subject introduces students to computer programming as an essential tool for problem-solving and data analysis in engineering and science. The focus is on using an algorithmic approach to problem solving. Students will learn how to analyse and solve problems by designing an algorithm and implementing it in a high-level programming language. This subject includes extensive practical work and problem-solving activities. It prepares students for the first year subject, Engineering Computing, in the Bachelor programs in Engineering. Students will also be able to use their acquired programming skills to perform calculations, analyse data and create graphs for their projects and reports in other subjects.

School Western Sydney The College

Discipline Programming

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 0 Preparatory subject

Equivalent Subjects COMP 0002 - Introductory Programming (UWSC)

Restrictions Students must be enrolled at Western Sydney University, The College.

Assumed Knowledge

The ability to create a mathematical expression for a given problem scenario. This would require knowledge of basic arithmetic, percentages and simple statistical measures.

Learning Outcomes

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

1. Apply basic programming control structures (sequence, selection, iteration)
2. Apply algorithmic approaches to design solutions to simple problems in engineering (using a flowchart or pseudocode)
3. Create simple computer programs based on student fs algorithmic solutions
4. Demonstrate skills in documenting, debugging and testing computer programs
5. Create structured programs and programs for analysis of large data sets

Subject Content

1.Introduction to programming (Weeks 1 & 2)
a.Introduction to problem solving
b.Introduction to programming design
c.Introduction to editing, building and testing.
2.Independent Programming (Weeks 3, 4 and 5)
a.Introduction to modularised algorithmic problem solving and robustness
b.Introduction to modularised algorithmic programming design
c.Intermediate editing, building and robustness testing
3.Engineering Data Analysis (Weeks 6, 7, 8 and 9)
a.Algorithms for acquiring and checking data
b.Algorithms for processing data
c.Algorithms for graphical and statistical analysis
d.Testing and verifying programs for data analysis
4.Advanced Programming design (Week 10 & 11)
a.Factorisation of code
1.Introduction to programming (Weeks 1 & 2)
a.Introduction to problem solving
b.Introduction to programming design
c.Introduction to editing, building and testing.
2.Independent Programming (Weeks 3, 4 and 5)
a.Introduction to modularised algorithmic problem solving and robustness
b.Introduction to modularised algorithmic programming design
c.Intermediate editing, building and robustness testing
3.Engineering Data Analysis (Weeks 6, 7, 8 and 9)
a.Algorithms for acquiring and checking data
b.Algorithms for processing data
c.Algorithms for graphical and statistical analysis
d.Testing and verifying programs for data analysis
4.Advanced Programming design (Week 10 & 11)
a.Factorisation of code

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
Practical	30 Minutes	5	N	Individual
Practical	30 Minutes	10	N	Individual
Practical	Approximately up to 100 lines of code	10	N	Group
Practical	30 Minutes	15	N	Individual
Applied Project	Approx. up to 300 lines of code	20	N	Individual
End-of-session Exam	2 hours	40	N	Individual

Prescribed Texts

- Allain A., 2012 Jumping into C ++, CProgramming.com, USA.

Teaching Periods

Term 1 (2024)

Penrith (Kingswood)

On-site

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View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=COMP0001_24-T1_KW_1#subjects)

Term 3 (2024)

Penrith (Kingswood)

On-site

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View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=COMP0001_24-T3_KW_1#subjects)