

# SYSTEMS PROGRAMMING, MAJOR (0064)

Western Sydney University Major Code: 0064

Previous Code: M3114.1

**Available to students in other Western Sydney University programs?**  
No

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 subjects 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 the Unix environment. 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.

## Location

| Campus                            | Mode     | Advice   |
|-----------------------------------|----------|--|
| Parramatta Campus - Victoria Road | Internal | A/Prof Yun Bai ( <a href="https://directory.westernsydney.edu.au/search/email/y.bai@westernsydney.edu.au">https://directory.westernsydney.edu.au/search/email/y.bai@westernsydney.edu.au</a> ) |
| Penrith Campus                    | Internal | A/Prof Yun Bai ( <a href="https://directory.westernsydney.edu.au/search/email/y.bai@westernsydney.edu.au">https://directory.westernsydney.edu.au/search/email/y.bai@westernsydney.edu.au</a> ) |

## Major Structure 2022 - 2023

If you commenced in 2024 or later please refer to the Structure 2024 tab for details.

This major is only available to students in Bachelor of Computer Science or Bachelor of Computer Science (Advanced).

Students must complete 80 credit points as follows.

| Subject                      | Title                                   | Credit Points |
|------------------------------|---|---------------|
| COMP 2009                    | Data Structures and Algorithms          | 10            |
| COMP 3013                    | Mobile Applications Development         | 10            |
| COMP 3015                    | Operating Systems Programming           | 10            |
| COMP 3027                    | Robotic Programming                     | 10            |
| COMP 2019                    | Systems Programming 1                   | 10            |
| INFS 3017                    | Web Systems Development                 | 10            |
| Select two of the following: |   | 20            |
| COMP 3006                    | Computer Graphics                       |               |
| INFO 3002                    | Ethical Hacking Principles and Practice |               |
| COMP 2025                    | Introduction to Data Science            |               |
| COMP 3032                    | Machine Learning                        |               |
| COMP 3020                    | Social Web Analytics                    |               |
| <b>Total Credit Points</b>   |   | <b>80</b>     |

## Equivalent Subjects

The subjects listed below count towards completion of this program for students who passed these subjects in 2021 or earlier.

MATH 2009 Introduction to Data Science, replaced by COMP 2025 Introduction to Data Science

## Major Structure 2024

This major structure applies to students who commenced in 2024 or later. If you commenced prior to 2024 please refer to the Structure 2022-23 tab for details.

This major is only available to students in Bachelor of Computer Science or Bachelor of Computer Science (Advanced).

Students must complete 80 credit points as follows.

| Subject                        | Title                                     | Credit Points |
|--------------------------------|---|---------------|
| COMP 3013                      | Mobile Applications Development           | 10            |
| COMP 3015                      | Operating Systems Programming             | 10            |
| COMP 3027                      | Robotic Programming                       | 10            |
| COMP 2019                      | Systems Programming 1                     | 10            |
| Select three of the following: |   | 30            |
| COMP 3006                      | Computer Graphics                         |               |
| INFO 3002                      | Ethical Hacking Principles and Practice   |               |
| COMP 2025                      | Introduction to Data Science              |               |
| COMP 3032                      | Machine Learning                          |               |
| COMP 3020                      | Social Web Analytics                      |               |
| COMP 2021                      | Software Engineering Fundamentals         |               |
| COMP 3028                      | Software Construction                     |               |
| COMP 3033                      | Quantum Computing and Communication       |               |
| Select one of the following:   |   | 10            |
| COMP 2009                      | Data Structures and Algorithms            |               |
| COMP 2030                      | Data Structures and Algorithms (Advanced) |               |
| <b>Total Credit Points</b>     |   | <b>80</b>     |

## Related Programs

Bachelor of Computer Science (3506) (<https://hbook.westernsydney.edu.au/archives/2023-2024/programs/bachelor-computer-science/>)

Bachelor of Computer Science (Advanced) (3634) (<https://hbook.westernsydney.edu.au/archives/2023-2024/programs/bachelor-computer-science-advanced/>)