

COMP 7024 PROGRAMMING FOR DATA SCIENCE

Credit Points 10

Legacy Code 301493

Coordinator Franco Ubaudi ([https://directory.westernsydney.edu.au/search/name/Franco Ubaudi/](https://directory.westernsydney.edu.au/search/name/Franco%20Ubaudi/))

Description The use of computers and computer programming for Data Science is fundamental to the discipline. This introductory subject will briefly cover the use of spreadsheet systems and then will consider programming in the statistical system "R" in detail. Other special purpose languages will also be touched on briefly including SQL (Structured Query Language).

School Computer, Data & Math Sciences

Discipline Computer Science

Student Contribution Band HECS Band 2 10cp

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

Level Postgraduate Coursework Level 7 subject

Learning Outcomes

1. Use Excel to manage and manipulate data.
2. Extract, transform and load data using R and R-Studio; including reading and writing data files.
3. Create complex R programs to conduct Data Science tasks.
4. Use basic SQL to access databases.
5. Apply simulation techniques to Data Science tasks.
6. Create reports using Markdown and R-Markdown.

Subject Content

1. Introduction to R and R-Studio
2. Data Types, Variables, Expressions, and Data Structures
3. Input and Output
4. Control Structures: Loops, Conditional Expressions, and Functions
5. Simulation techniques
6. Object-oriented programming in R
7. Introduction to SQL
8. Using Markdown for reporting

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
Quiz	5 x 30 minutes	20	N	Individual
Final Exam	Lab based 1 hour practical	40	Y	Individual
Applied Project	3,000 words	40	N	Individual

Teaching Periods

Quarter 1 (2024)

Parramatta City - Macquarie St

On-site

Subject Contact Franco Ubaudi ([https://directory.westernsydney.edu.au/search/name/Franco Ubaudi/](https://directory.westernsydney.edu.au/search/name/Franco%20Ubaudi/))

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=COMP7024_24-Q1_PC_1#subjects)

Autumn (2024)

Melbourne

On-site

Subject Contact Franco Ubaudi ([https://directory.westernsydney.edu.au/search/name/Franco Ubaudi/](https://directory.westernsydney.edu.au/search/name/Franco%20Ubaudi/))

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=COMP7024_24-AUT_MB_1#subjects)

Parramatta - Victoria Rd

On-site

Subject Contact Rosalind Wang ([https://directory.westernsydney.edu.au/search/name/Rosalind Wang/](https://directory.westernsydney.edu.au/search/name/Rosalind%20Wang/))

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=COMP7024_24-AUT_PS_1#subjects)

Spring (2024)

Parramatta - Victoria Rd

On-site

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View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=COMP7024_24-SPR_PS_1#subjects)