

# Bachelor of Computer Science

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## Program Notes

### Level I Mathematical Sciences Course

- Students must complete either *MATHS 1004 Mathematics for Data Science* or *MATHS 1012 Mathematics IB*, but may not present both towards their degree.
- To enrol in *MATHS 1012 Mathematics IB* students must first pass *MATHS 1011 Mathematics IA*, this is presented as a level I elective. Entry into *MATHS 1011 Mathematics IA* requires *SACE Stage 2 Specialist Mathematics*, or a pass in *MATHS 1013 Mathematics IM*.
- Students interested in the Artificial Intelligence or Data Science majors are strongly encouraged to take *MATHS 1012 Mathematics IB*.

### Programming Experience

- Students with prior programming experience do not need to complete *ENG 1002 Programming (Matlab and C)*, and can replace it with a level I Elective.
- If *ENG 1002 Programming (Matlab and C)* is replaced, the following courses must be completed in order, first *COMP SCI 1102*, then *COMP SCI 2103* and then *COMP SCI 2201*. However, these courses and *COMP SCI 2000* may be completed one semester earlier than in the study plans.

### General Electives

- General Electives must include **Broadening Electives** to the value of **9 units** that are not from the following subject areas: COMP SCI, MATHS, PURE MTH, APP MATH, STATS. *ENG 1002* does not count towards the Broadening electives requirement.
- Electives may be any University of Adelaide Undergraduate course for which the student meets the pre-requisites. Please check the availability, restriction and incompatible section on the course planner for elective choices.
- How to choose an elective course in your area of interest? Please refer to the steps via the link: <https://ecms.adelaide.edu.au/study-with-us/student-support/enrolment>

### Computer Science Internships

- Internships are available to students and allow students to build and apply skills to a relevant workplace setting.
- Students will need to apply for approved internships on [CareerHub](#), and if successful in gaining an internship will be enrolled by the faculty in either *COMP SCI 3700 ECMS Internship* (3 units) or *COMP SCI 3710 ECMS Internship* (6 units).
- Both *COMP SCI 3700 ECMS Internship* and *COMP SCI 3710 ECMS Internship* can be counted as a level III COMP SCI elective.
- For more information see: <https://ecms.adelaide.edu.au/study-with-us/student-support/internships/computer-mathematical-sciences>

### Links and Further Information

- [Course Planner](#) Information about University courses, including availability, class times, restrictions and prerequisites.
- [University Calendar](#) All academic program rules.
- **Contact Ask ECMS:** [askecms@adelaide.edu.au](mailto:askecms@adelaide.edu.au) • +61 8 8313 4148 • [www.ecms.adelaide.edu.au](http://www.ecms.adelaide.edu.au)

# Bachelor of Computer Science

## Computer Science Major

| Course        | Units  | Status |
|---------------|--|--------|
| <b>Year 1</b> |  |        |
| S1            | * ENG 1002 Programming (Matlab and C)              | 3      |
| S1            | ^ Level I General Elective                         | 3      |
| S1            | # Level I General Elective                         | 3      |
| S1            | # Level I General Elective                         | 3      |
| S2            | COMP SCI 1102 Object Oriented Programming          | 3      |
| S2            | COMP SCI 1106 Introduction to Software Engineering | 3      |
| S2            | # Level I/II/III General Elective                  | 3      |
| S2            | ^ Level I Mathematical Sciences Course             | 3      |
| <b>Year 2</b> |  |        |
| S1            | COMP SCI 2103 Algorithm Design & Data Structures   | 3      |
| S1            | COMP SCI 2207 Web & Database Computing             | 3      |
| S1            | # Level I/II/III General Elective                  | 3      |
| S1            | # Level II General Elective                        | 3      |
| S2            | COMP SCI 2000 Computer Systems                     | 3      |
| S2            | COMP SCI 2201 Algorithm & Data Structure Analysis  | 3      |
| S2            | # Level I/II/III General Elective                  | 3      |
| S2            | # Level II General Elective                        | 3      |
| <b>Year 3</b> |  |        |
| S1            | Level III Computer Science Elective                | 3      |
| S1            | Level III Computer Science Elective                | 3      |
| S1            | Level III Computer Science Elective                | 3      |
| S1            | Professional Elective                              | 3      |
| S2            | COMP SCI 3004 Operating Systems                    | 3      |
| S2            | # Level III General Elective                       | 3      |
| S2            | Level III Computer Science Elective                | 3      |
| S2            | Software Engineering and Project Elective          | 3      |

|                |                     |                                       |                           |
|----------------|---------------------|---------------------------------------|---------------------------|
| Core Course    |                     | Elective Course (see elective tables) |                           |
| CM = Completed | CR = Credit Awarded | EN = Currently Enrolled               | ENROL = Add to Enrolments |

| Software Engineering and Project Elective Table |   |   |  |
|---|---|---|--|
| S2  | COMP SCI 3006 Software Engineering & Project                                    | 3 |  |
| S2  | COMP SCI 3310 Software Engineering & Project (Artificial Intelligence)          | 3 |  |
| S2  | COMP SCI 3311 Software Engineering & Project (Data Science)                     | 3 |  |
| S2  | COMP SCI 3312 Software Engineering & Project (Cybersecurity)                    | 3 |  |
| S2  | COMP SCI 3313 Software Engineering & Project (Distributed Systems & Networking) | 3 |  |

Remaining Elective Tables found on [Elective Tables](#) page.

### Degree Notes

^ **Level I Mathematical Sciences Course:** Please refer to Level I Mathematical Sciences Course notes on [Program Notes](#) page.

\* **ENG 1002 Programming (Matlab and C):** Please refer to Programming Experience notes on [Program Notes](#) page.

# **General Electives:** Please refer to [Program Notes](#) page for information on general elective requirements.

# Bachelor of Computer Science

## Artificial Intelligence Major

| Course        | Units  | Status |
|---------------|--|--------|
| <b>Year 1</b> |  |        |
| S1            | * ENG 1002 Programming (Matlab and C)                                  | 3      |
| S1            | ^ Level I General Elective   | 3      |
| S1            | # Level I General Elective   | 3      |
| S1            | # Level I General Elective   | 3      |
| S2            | COMP SCI 1102 Object Oriented Programming                              | 3      |
| S2            | COMP SCI 1106 Introduction to Software Engineering                     | 3      |
| S2            | ** Level I/II/III General Elective                                     | 3      |
| S2            | ^ Level I Mathematical Sciences Course                                 | 3      |
| <b>Year 2</b> |  |        |
| S1            | COMP SCI 2103 Algorithm Design & Data Structures                       | 3      |
| S1            | COMP SCI 2207 Web & Database Computing                                 | 3      |
| S1            | # Level I/II/III General Elective                                      | 3      |
| S1            | # Level II General Elective  | 3      |
| S2            | COMP SCI 2000 Computer Systems   | 3      |
| S2            | COMP SCI 2201 Algorithm & Data Structure Analysis                      | 3      |
| S2            | # Level I/II/III General Elective                                      | 3      |
| S2            | ** Level II General Elective   | 3      |
| <b>Year 3</b> |  |        |
| S1            | Artificial Intelligence Elective                                       | 3      |
| S1            | Level III Computer Science Elective                                    | 3      |
| S1            | Professional Elective  | 3      |
| S1            | COMP SCI 3007 Artificial Intelligence                                  | 3      |
| S2            | COMP SCI 3004 Operating Systems  | 3      |
| S2            | # Level III General Elective   | 3      |
| S2            | Artificial Intelligence Elective                                       | 3      |
| S2            | COMP SCI 3310 Software Engineering & Project (Artificial Intelligence) | 3      |

|                |                                       |  |
|----------------|---------------------------------------|--|
| Core Course    | Elective Course (see elective tables) | Major Course/ Major Elective (see table) |
| CM = Completed | CR = Credit Awarded                   | EN = Currently Enrolled                  |
|                |                                       | ENROL = Add to Enrolments                |

\*\* Recommended electives:

- STATS 1000 Statistical Practice I or STATS 1005 Statistical Analysis and Modelling I
- STATS 2107 Statistical Modelling and Inference II

| Artificial Intelligence Elective Table |  |   |
|--|--|---|
| S1                                     | COMP SCI 3315 Computer Vision                              | 3 |
| S2                                     | COMP SCI 3314 Introduction to Statistical Machine Learning | 3 |
| S2                                     | COMP SCI 3316 Evolutionary Computation                     | 3 |

Remaining Elective Tables found on [Elective Tables](#) page.

### Degree Notes

^ **Level I Mathematical Sciences Course:** Please refer to Level I Mathematical Sciences Course notes on [Program Notes](#) page.

\* **ENG 1002 Programming (Matlab and C):** Please refer to Programming Experience notes on [Program Notes](#) page.

# **General Electives:** Please refer to [Program Notes](#) page for information on general elective requirements.

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## Cybersecurity Major

| Course        | Units  | Status |
|---------------|--|--------|
| <b>Year 1</b> |  |        |
| S1            | * ENG 1002 Programming (Matlab and C)                        | 3      |
| S1            | ^ Level I General Elective                                   | 3      |
| S1            | # Level I General Elective                                   | 3      |
| S1            | # Level I General Elective                                   | 3      |
| S2            | COMP SCI 1102 Object Oriented Programming                    | 3      |
| S2            | COMP SCI 1106 Introduction to Software Engineering           | 3      |
| S2            | # Level I/II/III General Elective                            | 3      |
| S2            | ^ Level I Mathematical Sciences Course                       | 3      |
| <b>Year 2</b> |  |        |
| S1            | COMP SCI 2103 Algorithm Design & Data Structures             | 3      |
| S1            | COMP SCI 2207 Web & Database Computing                       | 3      |
| S1            | # Level I/II/III General Elective                            | 3      |
| S1            | ** Level II General Elective                                 | 3      |
| S2            | COMP SCI 2000 Computer Systems                               | 3      |
| S2            | COMP SCI 2201 Algorithm & Data Structure Analysis            | 3      |
| S2            | # Level I/II/III General Elective                            | 3      |
| S2            | # Level II General Elective                                  | 3      |
| <b>Year 3</b> |  |        |
| S1            | Cybersecurity Elective                                       | 3      |
| S1            | Level III Computer Science Elective                          | 3      |
| S1            | Professional Elective  | 3      |
| S1            | COMP SCI 3308 Cybersecurity Fundamentals                     | 3      |
| S2            | COMP SCI 3004 Operating Systems                              | 3      |
| S2            | # Level III General Elective                                 | 3      |
| S2            | COMP SCI 3307 Secure Programming                             | 3      |
| S2            | COMP SCI 3312 Software Engineering & Project (Cybersecurity) | 3      |

|                |                                       |  |
|----------------|---------------------------------------|--|
| Core Course    | Elective Course (see elective tables) | Major Course/ Major Elective (see table) |
| CM = Completed | CR = Credit Awarded                   | EN = Currently Enrolled                  |
|                |                                       | ENROL = Add to Enrolments                |

\*\* Recommended electives:

- COMP SCI 2005 Systems Programming

| Cybersecurity Elective Table |   |   |
|------------------------------|---|---|
| N/A                          | COMP SCI 3309 Cybersecurity A Practical Application | 3 |
| S1                           | COMP SCI 3001 Computer Networks & Applications      | 3 |
| S2                           | MATHS 3026 Cryptography III                         | 3 |

Remaining Elective Tables found on [Elective Tables](#) page.

### Degree Notes

^ **Level I Mathematical Sciences Course:** Please refer to Level I Mathematical Sciences Course notes on [Program Notes](#) page.

\* **ENG 1002 Programming (Matlab and C):** Please refer to Programming Experience notes on [Program Notes](#) page.

# **General Electives:** Please refer to [Program Notes](#) page for information on general elective requirements.

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## Data Science Major

| Course        | Units   | Status |
|---------------|---|--------|
| <b>Year 1</b> |   |        |
| S1            | * ENG 1002 Programming (Matlab and C)                       | 3      |
| S1            | ^ Level I General Elective                                  | 3      |
| S1            | # Level I General Elective                                  | 3      |
| S1            | # Level I General Elective                                  | 3      |
| S2            | COMP SCI 1102 Object Oriented Programming                   | 3      |
| S2            | COMP SCI 1106 Introduction to Software Engineering          | 3      |
| S2            | ** Level I/II/III General Elective                          | 3      |
| S2            | ^ Level I Mathematical Sciences Course                      | 3      |
| <b>Year 2</b> |   |        |
| S1            | COMP SCI 2103 Algorithm Design & Data Structures            | 3      |
| S1            | COMP SCI 2207 Web & Database Computing                      | 3      |
| S1            | # Level I/II/III General Elective                           | 3      |
| S1            | # Level II General Elective                                 | 3      |
| S2            | COMP SCI 2000 Computer Systems                              | 3      |
| S2            | COMP SCI 2201 Algorithm & Data Structure Analysis           | 3      |
| S2            | # Level I/II/III General Elective                           | 3      |
| S2            | ** Level II General Elective                                | 3      |
| <b>Year 3</b> |   |        |
| S1            | Data Science Elective                                       | 3      |
| S1            | Level III Computer Science Elective                         | 3      |
| S1            | Professional Elective                                       | 3      |
| S1            | COMP SCI 3306 Mining Big Data                               | 3      |
| S2            | COMP SCI 3004 Operating Systems                             | 3      |
| S2            | # Level III General Elective                                | 3      |
| S2            | COMP SCI 3311 Software Engineering & Project (Data Science) | 3      |
| S2            | COMP SCI 3314 Introduction to Statistical Machine Learning  | 3      |

|                |                                       |  |
|----------------|---------------------------------------|--|
| Core Course    | Elective Course (see elective tables) | Major Course/ Major Elective (see table) |
| CM = Completed | CR = Credit Awarded                   | EN = Currently Enrolled                  |
|                |                                       | ENROL = Add to Enrolments                |

\*\* Recommended electives:

- STATS 1000 Statistical Practice I or STATS 1005 Statistical Analysis and Modelling I
- STATS 2107 Statistical Modelling and Inference II

| Data Science Elective Table |  |   |
|-----------------------------|--|---|
| S1                          | COMP SCI 3305 Parallel and Distributed Computing | 3 |
| S1                          | STATS 3001 Statistical Modelling III             | 3 |
| S1                          | STATS 3006 Mathematical Statistics               | 3 |

Remaining Elective Tables found on [Elective Tables](#) page.

### Degree Notes

^ Level I Mathematical Sciences Course: Please refer to Level I Mathematical Sciences Course notes on [Program Notes](#) page.

\* ENG 1002 Programming (Matlab and C): Please refer to Programming Experience notes on [Program Notes](#) page.

# General Electives: Please refer to [Program Notes](#) page for information on general elective requirements.

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## Distributed Systems and Networking Major

| Course        | Units   | Status |
|---------------|---|--------|
| <b>Year 1</b> |   |        |
| S1            | * ENG 1002 Programming (Matlab and C)   | 3      |
| S1            | ^ Level I General Elective  | 3      |
| S1            | # Level I General Elective  | 3      |
| S1            | # Level I General Elective  | 3      |
| S2            | COMP SCI 1102 Object Oriented Programming                                       | 3      |
| S2            | COMP SCI 1106 Introduction to Software Engineering                              | 3      |
| S2            | # Level I/II/III General Elective   | 3      |
| S2            | ^ Level I Mathematical Sciences Course  | 3      |
| <b>Year 2</b> |   |        |
| S1            | COMP SCI 2103 Algorithm Design & Data Structures                                | 3      |
| S1            | COMP SCI 2207 Web & Database Computing  | 3      |
| S1            | # Level I/II/III General Elective   | 3      |
| S1            | ** Level II General Elective  | 3      |
| S2            | COMP SCI 2000 Computer Systems  | 3      |
| S2            | COMP SCI 2201 Algorithm & Data Structure Analysis                               | 3      |
| S2            | # Level I/II/III General Elective   | 3      |
| S2            | # Level II General Elective   | 3      |
| <b>Year 3</b> |   |        |
| S1            | Level III Computer Science Elective   | 3      |
| S1            | Level III Computer Science Elective   | 3      |
| S1            | Professional Elective   | 3      |
| S1            | COMP SCI 3001 Computer Networks & Applications                                  | 3      |
| S2            | # Level III General Elective  | 3      |
| S2            | COMP SCI 3004 Operating Systems   | 3      |
| S2            | COMP SCI 3012 Distributed Systems   | 3      |
| S2            | COMP SCI 3313 Software Engineering & Project (Distributed Systems & Networking) | 3      |

| Core Course    | Elective Course (see elective tables) | Major Course              |
|----------------|---------------------------------------|---------------------------|
| CM = Completed | CR = Credit Awarded                   | EN = Currently Enrolled   |
|                |                                       | ENROL = Add to Enrolments |

\*\* Recommended electives:

- COMP SCI 2005 Systems Programming

### Degree Notes

^ **Level I Mathematical Sciences Course:** Please refer to Level I Mathematical Sciences Course notes on [Program Notes](#) page.

\* **ENG 1002 Programming (Matlab and C):** Please refer to Programming Experience notes on [Program Notes](#) page.

# **General Electives:** Please refer to [Program Notes](#) page for information on general elective requirements.

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## Elective Tables

| Course  |   | Units | Status |
|---|---|-------|--------|
| <b>Level I Mathematical Sciences Course Table</b> |   |       |        |
| S2  | <a href="#">MATHS 1004 Mathematics for Data Science I</a>                         | 3     |        |
| SS S1 S2  | <a href="#">MATHS 1012 Mathematics IB</a>   | 3     |        |
| <b>Professional Elective Table</b>                |   |       |        |
| S1  | <a href="#">ENTREP 3901 Tech eChallenge</a>                                       | 3     |        |
| S1  | <a href="#">MATHS 3025 Professional Practice III</a>                              | 3     |        |
| <b>Computer Science Elective Table</b>            |   |       |        |
| Not Available                                     | <a href="#">COMP SCI 2204 Advanced Programming Paradigms</a>                      | 3     |        |
| Not Available                                     | <a href="#">COMP SCI 3005 Computer Architecture</a>                               | 3     |        |
| Not Available                                     | <a href="#">COMP SCI 3309 Cybersecurity A Practical Application</a>               | 3     |        |
| S1  | <a href="#">COMP SCI 1010 Puzzle Based Learning</a>                               | 3     |        |
| S1  | <a href="#">COMP SCI 2005 Systems Programming</a>                                 | 3     |        |
| S1  | <a href="#">COMP SCI 3001 Computer Networks &amp; Applications</a>                | 3     |        |
| S1  | <a href="#">COMP SCI 3007 Artificial Intelligence</a>                             | 3     |        |
| S1  | <a href="#">COMP SCI 3305 Parallel and Distributed Computing</a>                  | 3     |        |
| S1  | <a href="#">COMP SCI 3306 Mining Big Data</a>                                     | 3     |        |
| S1  | <a href="#">COMP SCI 3308 Cybersecurity Fundamentals</a>                          | 3     |        |
| S1  | <a href="#">COMP SCI 3315 Computer Vision</a>                                     | 3     |        |
| S2  | <a href="#">COMP SCI 2203 Problem Solving &amp; Software Development</a>          | 3     |        |
| S2  | <a href="#">COMP SCI 3012 Distributed Systems</a>                                 | 3     |        |
| S2  | <a href="#">COMP SCI 3307 Secure Programming</a>                                  | 3     |        |
| S2  | <a href="#">COMP SCI 3314 Introduction to Statistical Machine Learning</a>        | 3     |        |
| S2  | <a href="#">COMP SCI 3316 Evolutionary Computation</a>                            | 3     |        |
| SS S1 S2  | <a href="#">COMP SCI 3700 ECMS Internship (see <a href="#">Program Notes</a>)</a> | 3     |        |
| SS S1 S2  | <a href="#">COMP SCI 3710 ECMS Internship (see <a href="#">Program Notes</a>)</a> | 6     |        |