2022 Study Plan – Semester 1 Start

Bachelor of Computer Science (Advanced)

Contents

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Bachelor of Computer Science (Advanced)
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 • +61 8 8313 4148 • www.ecms.adelaide.edu.au

2022 Study Plan – Semester 1 Start

Bachelor of Computer Science (Advanced)
Computer Science Major

	Course	Units	Status
Year 1			
S1	* ENG 1002 Programming (Matlab and C)	3	
S1	^ Level I General Elective	3	
S1	# Level I General Elective	3	
S1	# Level I/II/III General Elective	3	
S2	COMP SCI 1102 Object Oriented Programming	3	
S2	COMP SCI 1104 Grand Challenges in Computer Science	3	
S2	COMP SCI 1106 Introduction to Software Engineering	3	
S2	^ Level I Mathematical Sciences Course	3	
Year 2			
S1	COMP SCI 2000 Computer Systems	3	
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	
S2	COMP SCI 2008 Topics in Computer Science	6	
S2	COMP SCI 2201 Algorithm & Data Structure Analysis	3	
S2	# Level I/II/III General Elective	3	
Year 3			
S1	COMP SCI 3020 Advanced Topics in Computer Science	6	
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 Course	3	

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

Software Engineering and Project Course 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.

2022 Study Plan – Semester 1 Start

Bachelor of Computer Science (Advanced)
Artificial Intelligence Major

	Course	Units	Status
Year 1			
S1	* ENG 1002 Programming (Matlab and C)	3	
S1	^ Level I General Elective	3	
S1	** Level I General Elective	3	
S1	# Level I/II/III General Elective	3	
S2	COMP SCI 1102 Object Oriented Programming	3	
S2	COMP SCI 1104 Grand Challenges in Computer Science	3	
S2	COMP SCI 1106 Introduction to Software Engineering	3	
S2	^ Level I Mathematical Sciences Course	3	
Year 2			
S1	COMP SCI 2000 Computer Systems	3	
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	
S2	COMP SCI 2008 Topics in Computer Science	6	
S2	COMP SCI 2201 Algorithm & Data Structure Analysis	3	
S2	** Level I/II/III General Elective	3	
Year 3			
S1	COMP SCI 3020 Advanced Topics in Computer Science	6	
S1	Professional Elective	3	
S1	COMP SCI 3007 Artificial Intelligence	3	
S2	COMP SCI 3004 Operating Systems	3	
S2	Artificial Intelligence 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.

2022 Study Plan – Semester 1 Start

Bachelor of Computer Science (Advanced)
Cybersecurity Major

	Course	Units	Status
Year 1			
S1	* ENG 1002 Programming (Matlab and C)	3	
S1	^ Level I General Elective	3	
S1	# Level I General Elective	3	
S1	# Level I/II/III General Elective	3	
S2	COMP SCI 1102 Object Oriented Programming	3	
S2	COMP SCI 1104 Grand Challenges in Computer Science	3	
S2	COMP SCI 1106 Introduction to Software Engineering	3	
S2	^ Level I Mathematical Sciences Course	3	
Year 2			
S1	COMP SCI 2000 Computer Systems	3	
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	
S2	COMP SCI 2008 Topics in Computer Science	6	
S2	COMP SCI 2201 Algorithm & Data Structure Analysis	3	
S2	# Level I/II/III General Elective	3	
Year 3			
S1	COMP SCI 3020 Advanced Topics in Computer Science	6	
S1	Professional Elective	3	
S1	COMP SCI 3308 Cybersecurity Fundamentals	3	
S2	COMP SCI 3004 Operating Systems	3	
S2	Cybersecurity 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.

2022 Study Plan – Semester 1 Start

Bachelor of Computer Science (Advanced)
Data Science Major

	Course	Units	Status
Year 1			
S1	* ENG 1002 Programming (Matlab and C)	3	
S1	^ Level I General Elective	3	
S1	** Level I General Elective	3	
S1	# Level I/II/III General Elective	3	
S2	COMP SCI 1102 Object Oriented Programming	3	
S2	COMP SCI 1104 Grand Challenges in Computer Science	3	
S2	COMP SCI 1106 Introduction to Software Engineering	3	
S2	^ Level I Mathematical Sciences Course	3	
Year 2			
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	Professional Elective	3	
S2	COMP SCI 2000 Computer Systems	3	
S2	COMP SCI 2008 Topics in Computer Science	6	
S2	COMP SCI 2201 Algorithm & Data Structure Analysis	3	
Year 3			
S1	COMP SCI 3020 Advanced Topics in Computer Science	6	
S1	Data Science Elective	3	
S1	COMP SCI 3306 Mining Big Data	3	
S2	COMP SCI 3004 Operating Systems	3	
S2	** Level I/II/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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2022 Study Plan – Semester 1 Start

Bachelor of Computer Science (Advanced)
Distributed Systems and Networking Major

	Course	Units	Status
Year 1			
S1	* ENG 1002 Programming (Matlab and C)	3	
S1	^ Level I General Elective	3	
S1	# Level I General Elective	3	
S1	# Level I/II/III General Elective	3	
S2	COMP SCI 1102 Object Oriented Programming	3	
S2	COMP SCI 1104 Grand Challenges in Computer Science	3	
S2	COMP SCI 1106 Introduction to Software Engineering	3	
S2	^ Level I Mathematical Sciences Course	3	
Year 2			
S1	COMP SCI 2000 Computer Systems	3	
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	
S2	COMP SCI 2008 Topics in Computer Science	6	
S2	COMP SCI 2201 Algorithm & Data Structure Analysis	3	
S2	# Level I/II/III General Elective	3	
Year 3			
S1	COMP SCI 3020 Advanced Topics in Computer Science	6	
S1	Professional Elective	3	
S1	COMP SCI 3001 Computer Networks & Applications	3	
S2	COMP SCI 3004 Operating Systems	3	
S2	# Level III General Elective	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.

Bachelor of Computer Science (Advanced)
Elective Tables

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