

Bachelor of Computer Science Advanced (Honours) (C3001) – 2023

Advanced computer science specialisation

Year 1 (48 credit points)

First Semester	FIT1053 Introduction to programming (advanced)	FIT1047 Introduction to computer systems, networks and security	MAT1830 Discrete mathematics for computer science	Elective
Second Semester	FIT1054 Computer science (advanced) [FIT1053]	FIT1049 IT professional practice [12 points FIT units]	MAT1841 Continuous mathematics for computer science	Elective

Year 2 (48 credit points)

First Semester	FIT2004 Algorithms and data structures [FIT1008 or FIT1054 & 6 pts L1 Maths]]	FIT2083 Innovation and research in computer science [MAT1841 or MTH1030]	FIT2099 Object oriented design and implementation [One of FIT1045, FIT1048, FIT1051, FIT1008]	Elective
Second Semester	FIT2014 Theory of computation [FIT1045 or FIT1053 and MAT1830]	FIT2102 Programming paradigms [FIT1008 or FIT1054]	FIT2082 Computer science research project [FIT2083]	Elective

Year 3 (48 credit points)

First Semester	FIT3144 Advanced computer science project (12 points) [FIT2004 & FIT2083]	FIT3171 Databases [One of FIT1045, FIT1048, FIT1051, FIT1053 or ENG1003]	Level 3 Computer Science Approved Elective*	Elective
Second Semester		FIT3155 Advanced data structures and algorithms [FIT2004]	FIT3143 Parallel computing [FIT2004]	Elective

Year 4 (48 credit points)

First Semester	FIT4441 Honours thesis – part 1	FIT4442 Honours thesis – part 2	Level 4/5 Computer science approved elective	Elective
Second Semester	FIT4443 Honours thesis – part 3	FIT4444 Honours thesis – final	Level 4/5 Computer science approved elective	Elective

* Level 3 Computer science approved electives:

FIT3031 Network security	FIT3152 Data analytics
FIT3077 Software engineering: architecture and design	FIT3159 Computer architecture
FIT3080 Artificial intelligence	FIT3165 Computer networks
FIT3081 Image processing	FIT3173 Software security
FIT3088 Computer graphics	FIT3175 Usability
FIT3094 Artificial life, artificial intelligence and virtual environments	FIT3181 Deep learning
FIT3139 Computational modelling and simulation	FIT3182 Big data management and processing
FIT3142 Distributed computing	FIT3183 Malicious AI and dark side security
FIT3146 Maker lab	MTH3170 Network mathematics
	MTH3175 Network mathematics (Advanced)

Note that not all units will be taught in every year and some will be offered only in alternate years

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Industry Based Learning placement

Year 1 (48 credit points)

First Semester	FIT1053 Introduction to programming (advanced)	FIT1047 Introduction to computer systems, networks and security	MAT1830 Discrete mathematics for computer science	Elective
Second Semester	FIT1054 Computer science (advanced) [FIT1053]	FIT1049 IT professional practice [12 points FIT units]	MAT1841 Continuous mathematics for computer science	Elective

Year 2 (54 credit points)

Summer Semester	Elective			
First Semester	FIT2004 Algorithms and data structures [FIT1008 or FIT1054 & 6 pts L1 Maths]]	FIT2083 Innovation and research in computer science [MAT1841 or MTH1030]	FIT2099 Object oriented design and implementation [One of FIT1045, FIT1048, FIT1051, FIT1008]	Elective
Second Semester	FIT2014 Theory of computation [FIT1045 or FIT1053 and MAT1830]	FIT2102 Programming paradigms [FIT1008 or FIT1054]	FIT2082 Computer science research project [FIT2083]	Elective

Year 3 (42 credit points)

First Semester	FIT3045 Industry-based learning (18 points)			
Second Semester	FIT3155 Advanced data structures and algorithms [FIT2004]	FIT3143 Parallel computing [FIT2004]	FIT3171 Databases [One of FIT1045, FIT1048, FIT1051, FIT1053 or ENG1003]	Elective

Year 4 (48 credit points)

First Semester	FIT4441 Honours thesis – part 1	FIT4442 Honours thesis – part 2	Level 4/5 Computer science approved elective	Elective
Second Semester	FIT4443 Honours thesis – part 3	FIT4444 Honours thesis – final	Level 4/5 Computer science approved elective	Elective

Notes

Credit points	Unless specified, all units are worth 6 credit points Bachelor of Computer Science Advanced (Honours) 32 units x 6 credit points = Total of 192 credit points
Year Level Requirements	1) Normally 48 points, and a maximum of 60 points, of first year level units will be counted; 2) At least 36 points must be completed at third year level.
Unit requisites	All pre-requisite and co-requisite requirements must be undertaken in order to be able to enrol into a specific unit
Duration of degree	4 years full-time, 8 years part-time
Time limit	Time limit = 10 years. Students have ten years in which to complete this award from the time they commence first year. Periods of intermission are counted as part of the ten years.