Bachelor of Computer Science Advanced (Honours) (C3001) – 2022

Advanced computer science specialisation

Year 1 (48 credit points)

First Semester	**FIT1053** Algorithms and programming in python (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
FIT3077 Software engineering: architecture and design
FIT3080 Artificial intelligence
FIT3081 Image processing
FIT3088 Computer graphics
FIT3094 Artificial life, artificial intelligence and virtual environments
FIT3139 Computational modelling and simulation
FIT3142 Distributed computing
FIT3146 Maker lab
FIT3152 Data analytics
FIT3159 Computer architecture
FIT3165 Computer networks
FIT3173 Software security
FIT3175 Usability
FIT3181 Deep learning
FIT3182 Big data management and processing
FIT3183 Malicious AI and dark side security
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

Bachelor of Computer Science Advanced (Honours) (C3001) – 2022

Advanced computers science specialisation

Industry Based Learning placement

Year 1 (48 credit points)

First Semester	**FIT1053** Algorithms and programming in python (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.