

# BACHELOR OF COMPUTER SCIENCE (C2001) – 2020

## Advanced Computer Science Specialisation

### Year 1 (48 credit points)

<b>First Semester</b>	<b>FIT1045</b> Algorithms and programming fundamentals in python	<b>FIT1047</b> Introduction to computer systems, networks and security	<b>MAT1830</b> Discrete mathematics for computer science	<b>Elective</b>
<b>Second Semester</b>	<b>FIT1008</b> Introduction to computer science [FIT1045]	<b>FIT1055</b> IT professional practice and ethics [12 pts FIT study]	<b>MAT1841</b> Continuous mathematics for computer science	<b>Elective</b>

### Year 2 (48 credit points)

<b>First Semester</b>	<b>FIT2004</b> Algorithms and data structures [FIT1008]	<b>FIT2099</b> Object-oriented design and implementation [One of FIT1045 or FIT1048, FIT1051, FIT1008]	<b>Elective</b>	<b>Elective</b>
<b>Second Semester</b>	<b>FIT2014</b> Theory of computation [FIT1045 & MAT1830]	<b>FIT2102</b> Programming paradigms [FIT1008]	<b>FIT3171</b> Databases [One of FIT1045, FIT1048, FIT1051 or ENG1003]	<b>Elective</b>

### Year 3 (48 credit points)

<b>First Semester</b>	<b>FIT3045</b> Industry-based learning (18 points) (ONE Level 3 CS Approved Elective + TWO Level 3 Electives)			
<b>Second Semester</b>	<b>FIT3161</b> Computer science project 1 [FIT2004]	<b>FIT3143</b> Parallel computing [FIT2004]	<b>FIT3155</b> Advanced data structures and algorithms [FIT2004]	<b>Elective</b>
<b>Summer Semester</b>	<b>FIT3162</b> Computer science project 2 [FIT3161]			

#### \* Approved Computer Science Electives:

FIT3031 Network security	FIT3152 Data analytics
FIT3077 Software engineering: architecture and design	FIT3159 Computer architecture
FIT3080 Intelligent systems	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

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

#### NOTE :

<b>Credit points</b>	Unless specified, all units are worth 6 credit points Bachelor of Computer Science 24 units x 6 credit points = Total of 144 credit points
<b>Year Level Requirements</b>	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.
<b>Unit requisites</b>	All pre-requisite and co-requisite requirements must be undertaken in order to be able to enrol into a specific unit
<b>Duration of degree</b>	3 years full-time, 6 years part-time
<b>Time limit</b>	Time limit - 8 years. Students have eight years in which to complete this award from the time they commence first year. Periods of intermission are counted as part of the eight years.
<b>Monash University handbook</b>	Students should follow the course requirements for the year the course was commenced <a href="https://handbook.monash.edu/2020/courses/C2001">https://handbook.monash.edu/2020/courses/C2001</a>