BACHELOR OF COMPUTER SCIENCE ADVANCED (HONOURS) (C3001) – 2021
Data 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	**FIT1043** Introduction to data science

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]	**FIT2094** Databases [One of FIT1045, FIT1048, FIT1051, ENG1003]	**Elective**
Second Semester	**FIT2014** Theory of computation [FIT1045 or FIT1053 and MAT1830]	**FIT2086** Modelling for data science [FIT1045 & MAT1830 & one of MAT1841, MAT2003, MTH1030 or MTH1035]	**FIT2082** Computer science research project [FIT2083]	**Elective**

Year 3 (48 credit points)

First Semester	**FIT3144** Advanced computer science project (12 points) [FIT2004 & FIT2083]	**Level 3** Data Science Approved Elective*	**Elective**	**Elective**
Second Semester		**Level 3** Data Science Approved Elective*	**FIT3179** Data visualisation [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 Approved Data Science Electives:
FIT3003 Business intelligence and data warehousing
FIT3139 Computational modelling and simulation
FIT3152 Data analytics
FIT3154 Advanced data analysis
FIT3181 Deep learning
FIT3182 Big data management and processing
FIT3183 Malicious AI and dark side security
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) – 2021
Data Science Specialisation
(Industry Based Learning/Research 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	FIT1043 Introduction to data science

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]	FIT2094 Databases [One of FIT1045, FIT1048, FIT1051, ENG1003]	Elective
Second Semester	FIT2014 Theory of computation [FIT1045 or FIT1053 and MAT1830]	FIT2086 Modelling for data science [FIT1045 & MAT1830 & one of MAT1841, MAT2003, MTH1030 or MTH1035]	FIT2082 Computer science research project [FIT2083]	Elective

Year 3 (42 credit points)

First Semester	FIT3153 Research-based learning (18 points) OR FIT3045 Industry-based learning (18 points)			
Second Semester	Level 3 Data Science Approved Elective*	FIT3179 Data visualisation [FIT2004]	Elective	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 Approved Data Science Electives:

FIT3003 Business intelligence and data warehousing

FIT3139 Computational modelling and simulation

FIT3152 Data analytics

FIT3154 Advanced data analysis

FIT3181 Deep learning

FIT3182 Big data management and processing

FIT3183 Malicious AI and dark side security

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

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.