

2010 Faculty of Engineering & IT Handbook DRAFT
 Bachelor of Computer Science & Technology (Advanced) DRAFT Degree Table

Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
<p>Candidates for the degree of Bachelor of Computer Science and Technology (Advanced) (BCST(Adv)) are required to gain 144 credit points from the units of study set out below. The selection of units must satisfy the degree rules in the Resolutions of the Faculty. In particular, all core units must be completed, along with appropriate amount of elective units of study as recommended by the Faculty. Candidates for the BCST(Adv) degree must complete a stream in either Computer Science or Information Systems, or both, as described in the Tables below.</p> <p>Candidates in the BCST(Adv) degree must maintain a credit average in each year of enrolment. If this level of result is not achieved candidates will be transferred to the BCST degree program.</p> <p>Candidates in the BCST(Adv) degree must complete at least 12 credit points of 2000-level core and recommended units, and at least 12 credit points of 3000-level core and recommended units at advanced level.</p> <p>Enrolment is subject to the following constraint:</p> <p>1. At most 72 credit points accumulated from first year units (including core and recommended electives) can be counted for degree completion.</p> <p>Through this table, candidates may substitute an advanced equivalent for a non-advanced unit mentioned. They may also substitute an appropriate unit from an Advanced Engineering program of the Faculty of Engineering and IT, or the Talented Student Program of the Faculty of Science, if they are eligible to enrol in such units.</p>			
(i) Stream in Computer Science			
First year core units of study for CS stream			
ELEC1601 Foundations of Computer Systems	6	A HSC Mathematics extension 1 or 2 N COMP2001 Computer Systems, COMP2901 Computer Systems (Adv).	Semester 2
ENGG1805 Professional Engineering and IT	6		Semester 1
INFO1103 Introduction to Programming	6	A HSC Mathematics N SOFT (1001 or 1901) or COMP (1001 or 1901) or DECO2011	Semester 1 Semester 2
Note: INFO1903 Informatics (Adv) can be taken as an alternate core unit to INFO1103.			
INFO1105 Data Structures	6	A Programming, as for INFO1103 N INFO1905 or SOFT (1002 or 1902) or COMP (1002 or 1902 or 2160 or 2860 or 2111 or 2811 or 2002 or 2902)	Semester 2
Note: INFO1905 (advanced version) can be taken as an alternate core unit to INFO1105.			
<p>Maths/Statistics requirement: A total of 18 credit points (with at least 6 credit points of 2000-level or above) of MATH and/or STAT units of are required for completion of this degree All 1000-level and 2000-level units offered in the Science subject areas of Mathematics and Statistics can be taken to meet this requirement, however the School recommends students choose from the following units: MATH1001, MATH1002, MATH1003, MATH1004, MATH1005, MATH2069, MATH2063 and STAT2012. MATH and STAT units that are not taken as core units can be taken as other units.</p> <p>A full list of MATH and STAT units are available from Science Faculty handbook.</p>			
First year recommended elective units of study for CS stream.			
ELEC1103 Fundamentals of Elec and Electronic Eng	6	A HSC Physics, HSC Mathematics extension 1 or 2 N ELEC1102 Foundations of Electronic Circuits.	Semester 1
INFO1003 Foundations of Information Technology	6	N INFO1000 or INFS1000	Semester 1 Semester 2
INFO1903 Informatics (Advanced)	6	A HSC Mathematics P UAI (or ATAR equivalent) sufficient to enter BCST(Adv), BIT or BSc(Adv), or portfolio of work suitable for entry <i>Note: Department permission required for enrolment</i>	Semester 1
Second year core units of study for CS stream			
COMP2129 Operating Systems and Machine Principles	6	A Programming, as from INFO1103 N SOFT (2130 or 2830 or 2004 or 2904) or COMP (2004 or 2904)	Semester 1
COMP2907 Algorithms and Complexity (Advanced)	6	A INFO1905, MATH1904 P Distinction level result in INFO (1105 or 1905) or SOFT (1002 or 1902) N COMP (2007 or 3309 or 3609 or 3111 or 3811)	Semester 2
INFO2110 Systems Analysis and Modelling	6	A Experience with a data model as in INFO1003 or INFO1103 or INFS1000 N INFO (2810 or 2000 or 2900)	Semester 2
INFO2820 Database Systems 1 (Advanced)	6	P Distinction-level result in INFO (1003 or 1103 or 1903 or 1105 or 1905) or SOFT (1001 or 1901 or 1002 or 1902) N INFO (2120 or 2005 or 2905)	Semester 1
<p>Maths/Statistics requirement: A total of 18 credit points (with at least 6 credit points of 2000-level or above) of MATH and/or STAT units of are required for completion of this degree All 1000-level and 2000-level units offered in the Science subject areas of Mathematics and Statistics can be taken to meet this requirement, however the School recommends students choose from the following units: MATH1001, MATH1002, MATH1003, MATH1004, MATH1005, MATH2069, MATH2063 and STAT2012. MATH and STAT units that are not taken as core units can be taken as other units.</p> <p>A full list of MATH and STAT units are available from Science Faculty handbook.</p>			
Second year recommended elective units of study for CS stream			
INFO2315 Introduction to IT Security	6	A Computer literacy N NETS (3305 or 3605 or 3016 or 3916) or ELEC (5610 or 5616)	Semester 2

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ISYS2140 Information Systems	6	A INFO1003 or INFS1000 N ISYS (2006 or 2007)	Semester 1
All 2000-level ELEC units of study are recommended.			
Third year core units of study for CS stream			
Students are required to complete at least 36 credit points of 3000-level from the core, selected core and recommended elective units of study listed here for the CS stream.			
INFO3402 Management of IT Projects and Systems	6	A INFO (2000 or 2110 or 2810 or 2900) N ISYS (3000 or 3012) or ELEC3606	Semester 1
INFO3600 Major Development Project (Advanced)	12	P INFO3402 N COMP3615 or ISYS3400 or SOFT (3300 or 3600 or 3200 or 3700) <i>Only available to students in BIT, BCST(Adv) or BSc(Adv)</i>	Semester 2
CS & IS double stream: Students enrolled in the double stream must also complete ISYS3401 Analytical Methods and Information Systems as a core unit of study from the CS stream.			
Third year selected core units of study for CS stream			
Students must complete at least 12 credit points from the list below.			
COMP3109 Programming Languages and Paradigms	6	A COMP2007	Semester 2
COMP3308 Introduction to Artificial Intelligence	6	A COMP2007 N COMP (3608 or 3002 or 3902)	Semester 1
COMP3608 Intro. to Artificial Intelligence (Adv)	6	P Distinction-level results in some 2nd year COMP or MATH or SOFT units. N COMP (3308 or 3002 or 3902)	Semester 1
COMP3419 Graphics and Multimedia	6	A COMP2007, MATH1002 N MULT (3306 or 3606 or 3019 or 3919 or 3004 or 3904) or COMP(3004 or 3904)	Semester 1
COMP3456 Computational Methods for Life Sciences	6	P INFO1105 and (COMP2007 or INFO2120) and 6 credit points from BIOL or MBLG	Semester 2
COMP3520 Operating Systems Internals	6	A COMP2129, INFO1105 N NETS (3304 or 3604 or 3009 or 3909) or COMP (3009 or 3909)	Semester 1
ELEC3506 Data Communications and the Internet	6	N NETS2150 Fundamentals of Networking, NETS2009 Network Organisation, NETS2909 Network Organisation (Adv), NETS3007 Network Protocols, NETS3907 Network Protocols (Advanced), ELEC3504 Data Communications and the Internet, ELEC4501 Data Communication Networks.	Semester 2
ELEC3609 Internet Software Platforms	6	P INFO1103, INFO2110, INFO2120 N EBUS4001 E-Business Engineering	Semester 2
INFO3220 Object Oriented Design	6	A INFO2110, INFO1105 N SOFT (3301 or 3601 or 3101 or 3801) or COMP (3008 or 3908)	Semester 1
INFO3315 Human-Computer Interaction	6	A INFO2110 N MULT (3307 or 3607 or 3018 or 3918) or SOFT (3102 or 3802) or COMP (3102 or 3802)	Semester 2
INFO3404 Database Systems 2	6	A Introductory database study such as INFO2120 or INFO2820 or INFO2005 or INFO2905. Students are expected to be familiar with SQL and the relational data model, and to have some programming experience. N INFO (3504 or 3005 or 3905) or COMP (3005 or 3905)	Semester 2
INFO3504 Database Systems 2 (Adv)	6	P Distinction-level result in INFO (2120 or 2820) or COMP (2007 or 2907) N INFO (3404 or 3005 or 3905) or COMP (3005 or 3905)	Semester 2
CS & IS double stream: Students must complete 24 credit points from the combination of selected core units for the CS stream and the IS stream, including at least 12 cp from the list above.			
Third year recommended elective units of study for CS stream			
ELEC3607 Embedded Computing	6	A ELEC1101 Foundations of Computer Systems, or ELEC1601 Professional Computer Engineering or ELEC2602 Digital System Design. P ELEC1601 and ELEC2602 N ELEC2601 Microcomputer Systems.	Semester 2
ELEC3610 E-Business Analysis and Design	6	P INFO2120 N EBUS3003 E-Business System Design, EBUS3001 Introduction to e-Commerce Systems	Semester 1
ISYS3401 Analytical Methods & Information Systems	6	A INFO2110, ISYS2140 N ISYS3015	Semester 1
All 3000-level and above ELEC units of study are recommended elective units.			
Also, appropriate fourth year units of study from BIT table can be taken as recommended electives with permission of the Head of School.			
(ii) Stream in Information Systems			
First year core units of study for IS stream			
ENGG1805 Professional Engineering and IT	6		Semester 1
INFO1103 Introduction to Programming	6	A HSC Mathematics N SOFT (1001 or 1901) or COMP (1001 or 1901) or DECO2011	Semester 1 Semester 2
Note: INFO1903 Informatics (Adv) can be taken as an alternate core unit to both INFO1103 and INFO 1003.			
INFO1003 Foundations of Information Technology	6	N INFO1000 or INFS1000	Semester 1 Semester 2
Note: INFO1903 Informatics (Adv) can be taken as an alternate core unit to both INFO1103 and INFO 1003.			

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INFO1105 Data Structures	6	A Programming, as for INFO1103 N INFO1905 or SOFT (1002 or 1902) or COMP (1002 or 1902 or 2160 or 2860 or 2111 or 2811 or 2002 or 2902)	Semester 2
Note: INFO1905 (advanced version) can be taken as an alternate core unit to INFO1905.			
Maths/Statistics requirement: A total of 18 credit points (with at least 6 credit points of 2000-level or above) of MATH and/or STAT units of are required for completion of this degree All 1000-level and 2000-level units offered in the Science subject areas of Mathematics and Statistics can be taken to meet this requirement, however the School recommends students choose from the following units; MATH1001, MATH1002, MATH1003, MATH1004, MATH1005, MATH2069, MATH2063 and STAT2012. MATH and STAT units that are not taken as core units can be taken as other units. A full list of MATH and STAT units are available from Science Faculty handbook.			
First year recommended elective units of study for IS stream			
ELEC1103 Fundamentals of Elec and Electronic Eng	6	A HSC Physics, HSC Mathematics extension 1 or 2 N ELEC1102 Foundations of Electronic Circuits.	Semester 1
ELEC1601 Foundations of Computer Systems	6	A HSC Mathematics extension 1 or 2 N COMP2001 Computer Systems, COMP2901 Computer Systems (Adv).	Semester 2
INFO1903 Informatics (Advanced)	6	A HSC Mathematics P UAI (or ATAR equivalent) sufficient to enter BCST(Adv), BIT or BSc(Adv), or portfolio of work suitable for entry <i>Note: Department permission required for enrolment</i>	Semester 1
Second year core units of study for IS stream			
COMP2907 Algorithms and Complexity (Advanced)	6	A INFO1905, MATH1904 P Distinction level result in INFO (1105 or 1905) or SOFT (1002 or 1902) N COMP (2007 or 3309 or 3609 or 3111 or 3811)	Semester 2
INFO2110 Systems Analysis and Modelling	6	A Experience with a data model as in INFO1003 or INFO1103 or INFS1000 N INFO (2810 or 2000 or 2900)	Semester 2
INFO2315 Introduction to IT Security	6	A Computer literacy N NETS (3305 or 3605 or 3016 or 3916) or ELEC (5610 or 5616)	Semester 2
INFO2820 Database Systems 1 (Advanced)	6	P Distinction-level result in INFO (1003 or 1103 or 1903 or 1105 or 1905) or SOFT (1001 or 1901 or 1002 or 1902) N INFO (2120 or 2005 or 2905)	Semester 1
ISYS2140 Information Systems	6	A INFO1003 or INFS1000 N ISYS (2006 or 2007)	Semester 1
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Second year recommended elective units of study for IS stream			
COMP2129 Operating Systems and Machine Principles	6	A Programming, as from INFO1103 N SOFT (2130 or 2830 or 2004 or 2904) or COMP (2004 or 2904)	Semester 1
All 2000-level ELEC units of study are recommended elective units.			
Third year core units of study for IS stream			
Students are required to complete at least 36 credit points of 3000-level from the core, selected core and recommended elective units of study listed here for the IS stream.			
INFO3402 Management of IT Projects and Systems	6	A INFO (2000 or 2110 or 2810 or 2900) N ISYS (3000 or 3012) or ELEC3606	Semester 1
INFO3600 Major Development Project (Advanced)	12	P INFO3402 N COMP3615 or ISYS3400 or SOFT (3300 or 3600 or 3200 or 3700) <i>Only available to students in BIT, BCST(Adv) or BSc(Adv)</i>	Semester 2
ISYS3401 Analytical Methods & Information Systems	6	A INFO2110, ISYS2140 N ISYS3015	Semester 1
Third year selected core units of study for IS stream			
Students must complete at least 6 credit points from the following list.			
ELEC3610 E-Business Analysis and Design	6	P INFO2120 N EBUS3003 E-Business System Design, EBUS3001 Introduction to e-Commerce Systems	Semester 1
INFO3315 Human-Computer Interaction	6	A INFO2110 N MULT (3307 or 3607 or 3018 or 3918) or SOFT (3102 or 3802) or COMP (3102 or 3802)	Semester 2
INFO3404 Database Systems 2	6	A Introductory database study such as INFO2120 or INFO2820 or INFO2005 or INFO2905. Students are expected to be familiar with SQL and the relational data model, and to have some programming experience. N INFO (3504 or 3005 or 3905) or COMP (3005 or 3905)	Semester 2
INFO3504 Database Systems 2 (Adv)	6	P Distinction-level result in INFO (2120 or 2820) or COMP (2007 or 2907) N INFO (3404 or 3005 or 3905) or COMP (3005 or 3905)	Semester 2
CS & IS double stream: Students must complete 24 credit points from the combination of selected core units for the CS stream and the IS stream, including at least 6 cp from the list above.			
Third year recommended elective units of study for IS stream			
COMP3109 Programming Languages and Paradigms	6	A COMP2007	Semester 2

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COMP3308 Introduction to Artificial Intelligence	6	A COMP2007 N COMP (3608 or 3002 or 3902)	Semester 1
COMP3608 Intro. to Artificial Intelligence (Adv)	6	P Distinction-level results in some 2nd year COMP or MATH or SOFT units. N COMP (3308 or 3002 or 3902)	Semester 1
COMP3419 Graphics and Multimedia	6	A COMP2007, MATH1002 N MULT (3306 or 3606 or 3019 or 3919 or 3004 or 3904) or COMP(3004 or 3904)	Semester 1
COMP3456 Computational Methods for Life Sciences	6	P INFO1105 and (COMP2007 or INFO2120) and 6 credit points from BIOL or MBLG	Semester 2
COMP3520 Operating Systems Internals	6	A COMP2129, INFO1105 N NETS (3304 or 3604 or 3009 or 3909) or COMP (3009 or 3909)	Semester 1
ELEC3506 Data Communications and the Internet	6	N NETS2150 Fundamentals of Networking, NETS2009 Network Organisation, NETS2909 Network Organisation (Adv), NETS3007 Network Protocols, NETS3907 Network Protocols (Advanced), ELEC3504 Data Communications and the Internet, ELEC4501 Data Communication Networks.	Semester 2
ELEC3607 Embedded Computing	6	A ELEC1101 Foundations of Computer Systems, or ELEC1601 Professional Computer Engineering or ELEC2602 Digital System Design. P ELEC1601 and ELEC2602 N ELEC2601 Microcomputer Systems.	Semester 2
ELEC3609 Internet Software Platforms	6	P INFO1103, INFO2110, INFO2120 N EBUS4001 E-Business Engineering	Semester 2
INFO3220 Object Oriented Design	6	A INFO2110, INFO1105 N SOFT (3301 or 3601 or 3101 or 3801) or COMP (3008 or 3908)	Semester 1
All 3000-level and above ELEC units of study are recommended electives.			
Also, appropriate fourth year units of study from BIT table, with permission.			
Honours			
Students who have qualified for the BCST(Adv) degree may apply to enter the BCST(Adv)(Honours) year. Note that unlike BIT(Honours) or BE(Honours), the Honours in BCST(Adv) requires an additional 48 credit points of study.			
All BCST(Adv)(Honours) students must complete the following 24 credit points of core units of study. These units are only available to students enrolled in Honours degrees, those in Research Higher degrees, or those in the Research track in postgraduate coursework degrees. In addition to the core units students must also complete 24 credit points of elective units of study, please refer to units listed in the BIT table Fourth Year Selected Core.			
Fourth year Honours core units of study			
INFO5993 IT Research Methods	6	A Elementary statistics N INFO4990 <i>Note: Department permission required for enrolment</i>	Semester 1 Semester 2
INFO4991 IT Research Thesis A	6	P Enrolment in Honours (BCST or BIT) C INFO4990 and INFO4992	Semester 1 Semester 2
INFO4992 IT Research Thesis B	12	P Enrolment in Honours (BCST or BIT) C INFO4990 and INFO4991	Semester 1 Semester 2
INFO4999 Computer Science Honours Result		P Permission of the Head of Department <i>Note: Department permission required for enrolment</i>	Semester 1 Semester 2