

355-SE Bachelor of Engineering (Software Engineering)

Year and Campus:	2008															
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees															
Level:	Undergraduate															
Duration & Credit Points:																
Contact:	-															
Course Overview:	<p>The BE and BE(IT) courses in the School of Electrical Engineering and Computer Science offer three distinct streams of the BE degree: electrical engineering, computer engineering and software engineering. The three streams have most first-year subjects in common, and with the appropriate selection of subjects it is possible to defer the choice of stream until the commencement of second year, and in some cases, until the middle of second year. Each of the three streams may be taken in the combined degrees: BE/BA, BE(IT)/BA (with an arts major in any department in the Faculty of Arts); BE/BCom, BE(IT)/BCom (with a commerce major in any department in the Faculty of Economics and Commerce); BE/LLB, BE(IT)/LLB; and BE/BSc, BE(IT)/BSc (with a major in any department in the Faculty of Science, with the majority of students undertaking a major in computer science, physics or mathematics, however students in the software engineering stream of the BE or BE(IT) are not permitted to take a computer science major in the BSc). Computer science as a Science Faculty major may be combined with a BE in chemical, civil, environmental and mechanical engineering through the BE/BSc degree program.</p> <p>The single degree, Bachelor of Engineering (Software) requires the completion of 400 points over four years.</p>															
Objectives:	-															
Course Structure & Available Subjects:	<p>The recommended or standard course structures are listed below. When setting the timetable every effort will be made to avoid clashes between the times of classes associated with these sets of subjects. Students should be aware however, that if it proves to be impossible to achieve a timetable without clashes in these sets of subjects, the Faculty reserves the right to modify course structures in order to eliminate the conflicts. Students will be advised during the enrolment period of the semester if the recommended courses need to be varied. Where the courses include elective subjects these should be chosen so that timetable clashes are avoided. In particular, students in combined degrees should plan their courses so that the subjects chosen in the other faculty do not clash with those recommended for the engineering component.</p>															
Subject Options:	<p>First Year (2008 Entry)</p> <p><i>Note: Students who have successfully completed VCE Specialist Maths should enrol into:</i></p> <p>620-155 Calculus 2 in semester 1; and</p> <p>620-156 Linear Algebra in semester 2</p> <p>Subjects listed below MUST be taken in this approved order, regardless of semester availability.</p> <p>Semester 1</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>800-001 Engineering Systems Design 1</td> <td>Semester 1, Semester 2</td> <td>12.50</td> </tr> <tr> <td>620-154 Calculus 1</td> <td>Semester 1, Semester 2</td> <td>12.50</td> </tr> <tr> <td>600-151 Informatics 1: Practical Computing</td> <td>Semester 1, Semester 2</td> <td>12.50</td> </tr> </tbody> </table> <p>Breadth subject (http://handbook.unimelb.edu.au/breadth/index.html) (12.5 points)</p> <p>Semester 2</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	800-001 Engineering Systems Design 1	Semester 1, Semester 2	12.50	620-154 Calculus 1	Semester 1, Semester 2	12.50	600-151 Informatics 1: Practical Computing	Semester 1, Semester 2	12.50	Subject	Study Period Commencement:	Credit Points:
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800-001 Engineering Systems Design 1	Semester 1, Semester 2	12.50														
620-154 Calculus 1	Semester 1, Semester 2	12.50														
600-151 Informatics 1: Practical Computing	Semester 1, Semester 2	12.50														
Subject	Study Period Commencement:	Credit Points:														

800-002 Engineering Systems Design 2	Semester 2, Summer	12.50
620-155 Calculus 2	Semester 1, Semester 2	12.50
600-152 Informatics 2: People, Data and the Web	Semester 1, Semester 2	12.50

PLUS Breadth subject (<http://handbook.unimelb.edu.au/breadth/index.html>) (12.5 points)

THE COURSE STRUCTURE BELOW ONLY APPLIES TO RE-ENROLLING STUDENTS WHO COMMENCED THEIR STUDIES PRIOR TO 2008

Second Year

Subjects listed below **MUST** be taken in this approved order, regardless of semester availability.

Semester 1

Subject	Study Period Commencement:	Credit Points:
431-201 Engineering Analysis A	Semester 1	12.50
431-204 Digital Systems 2: System Design	Semester 1	12.50
433-252 Software Engineering Principles & Tools	Semester 1	12.50
433-253 Algorithms and Data Structures	Semester 1	12.50

Semester 2

Subject	Study Period Commencement:	Credit Points:
431-202 Engineering Analysis B	Summer, 1, 2	12.500
433-254 Software Design	Not offered 2008	12.50
433-255 Logic and Computation	Not offered 2008	12.50

Elective (12.5 points) - *Elective subjects may be used for additional Electrical Engineering or Computer Science subjects, or for subjects from other departments.*

The subject 431-204 Digital Systems 2: System Design may be replaced by 433-313 Computer Design, taken in Third Year.

Third Year

Subject	Study Period Commencement:	Credit Points:
433-340 Software Engineering Project	Year Long	25
433-341 Software Engineering Process & Practice	Semester 1	12.50
433-342 Software Engineering Methods	Semester 2	12.50
433-343 Professional Issues in Computing	Semester 2	12.50

CSSE 300-level elective (12.5 points)

Elective(s) (25 points in total)

Students who commenced before 2004 may replace 433-342 with one of 433-332, 433-351, 433-353, 433-371, or 433-441.

Note that in 2005 the Department of Computer Science and Software Engineering introduced restrictions to the computing subjects offered by other departments which can be taken as electives in the BCS, BE(Software), BE(Eng Mgt) Software and BE(Biomedical) Bioinformatics programs. Students are advised to visit when choosing their subjects.

Fourth Year

Subject	Study Period Commencement:	Credit Points:
433-440 Advanced Software Engineering Project	Year Long	25

CSSE 300-level or 400-level elective(s) (50 points in total)

Elective(s) (25 points in total)

The 50 points labelled CSSE electives must be selected, subject to prerequisites being satisfied, from the 300-level, 400-level and (with the approval of the department) masters-level subjects offered by the Department of Computer Science and Software Engineering and must include at least 50 points selected from: 433-332 Operating Systems, 433-351 Database Systems, 433-353 Networks and Communications, 433-371 Interactive System Design, 433-441 System Modelling and Analysis. Other elective subjects may be used for additional computer science or electrical engineering subjects, or for subjects in other departments. The selection of elective subjects may be restricted by timetable and prerequisite requirements.

Note that in 2005 the Department of Computer Science and Software Engineering introduced restrictions to the computing subjects offered by other departments which can be taken as electives in the BCS, BE (Software), BE (Eng Mgt) Software and BE (Biomedical) Bioinformatics programs. Students are advised to visit <http://www.csse.unimelb.edu.au/courseadvice/ugrad/planning/electives/computing/> when choosing their subjects.

Electrical Engineering Electives

Subject	Study Period Commencement:	Credit Points:
431-451 Project Mgt & Product Commercialisation	1	12.500
431-460 Digital Communications	Semester 1	12.50
431-461 Signal Processing 2	Semester 1	12.50
431-462 Communication Networks	Semester 1	12.50
431-463 Directed Study 4.1	Semester 1	12.50
431-464 Control 2 (Advanced Control)	Semester 2	12.50
431-465 Wireless Communication	Semester 2	12.50
431-466 RF, Microwave and Optoelectronic Systems	Semester 2	12.50
431-467 Digital Systems 4: High Speed Systems	Semester 2	12.50
431-470 Directed Study 4.2	Semester 2	12.50
431-481 Electronic Circuit Design 3	Semester 1	12.50

Computer Science Electives

300-level Electives

Subject	Study Period Commencement:	Credit Points:
433-303 Artificial Intelligence	Semester 2	12.50
433-313 Computer Design	Semester 2	12.50
433-330 Theory of Computation	Semester 1	12.50
433-332 Operating Systems	Semester 1	12.50
433-341 Software Engineering Process & Practice	Semester 1	12.50
433-342 Software Engineering Methods	Semester 2	12.50
433-351 Database Systems	Semester 1	12.50

433-352 Data on the Web	Semester 2	12.50
433-353 Networks and Communications	Semester 2	12.50
433-361 Programming Language Implementation	Not offered 2008	12.50
433-371 Interactive System Design	Semester 2	12.50
433-380 Graphics and Computation	Semester 1	12.50
433-385 Modelling, Analysis and Visualisation	Not offered 2008	12.500
433-393 Directed Study 3A	Semester 1, Semester 2, Summer	12.50
433-394 Directed Study 3B	Semester 1, Semester 2, Summer	12.50
433-395 Advanced Topic in Computer Science	Not offered 2008	12.500

400-level Electives

Subject	Study Period Commencement:	Credit Points:
433-421 Web Technologies and Applications	Semester 1	12.50
433-430 Principles of Programming Languages	Semester 1	12.50
433-431 Functional Programming	Not offered 2008	12.50
433-432 Logic Programming	Semester 2	12.50
433-433 Constraint Programming	Not offered 2008	12.50
433-441 System Modelling and Analysis	Semester 1	12.50
433-443 Software Project Management	Not offered 2008	12.500
433-446 System Requirements Engineering	Not offered 2008	12.50
433-448 Applied Cryptography and Coding	Not offered 2008	12.50
433-460 Human Language Technology	Not offered 2008	12.50
433-461 High Performance Database Systems	Semester 2	12.50
433-467 Text and Document Management	Semester 1	12.50
433-481 Agent Programming Languages	Not offered 2008	12.500
433-482 Software Agents	Semester 1	12.50
433-483 Computer Vision and Image Processing	Not offered 2008	12.50
433-484 Machine Learning	Not offered 2008	12.50
433-493 Directed Study 4A	Semester 1, Semester 2, Summer	12.50
433-494 Directed Study 4B	Semester 1, Semester 2, Summer	12.50
433-495 Advanced Topic in Computer Science	Not offered 2008	12.500

Core Participation Requirements:

<p>For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes,

Assessment and Generic Skills sections of this entry.

It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: <http://services.unimelb.edu.au/disability>