

CHECKLIST Bachelor of Engineering (Honours) – Software Engineering: Transition to new program (commencing 2024)

* This checklist is for the BE(Hons) component ONLY for dual programs with Bachelor of Mathematics and Bachelor of Science

Important Notes:

- The information contained in this document is intended as general advice only. Students must follow the program rules & requirements listed on the [Programs and Courses Website](#) relevant to the year they commence. This planner must be used in conjunction with your program duration course list and program rules.
- Students need to check future course offerings, prerequisites, incompatibilities and restrictions for all courses as these are subject to change.
- Students cannot take courses that are incompatible with courses already counted towards their program, and cannot count the same course twice.
- Please contact the relevant Faculty for information regarding the other component of your dual program.

For the BE(Hons) component, with a specialisation in Software Engineering:

- I. 8 units for all [BE\(Hons\) Core Courses](#); and
- II. 36 units for one Specialisation in Software Engineering; and
- III. One of the following:
 - a. 16 units for one Major from Software Engineering Major Options*, or
*Major available in: [Computer Engineering](#)
 - b. 16 units for Software Engineering Minor Options**, or
**Minor available in: [Data Science](#), [Design](#)
 - c. 16 units for Software Engineering Specialisation [No Major option](#)

| ✓/X compl. | BE(Hons) Core Courses (8 units) | Sem offering | # | First offered | Approved substitution | Last offered |
|-------------------------------------|---|--------------|---|---------------|--|--------------|
| 8 units for all Core Courses | | | | | | |
| | ENGG1100 Professional Engineering | 1,2 | 2 | | Course must be completed [ENGG1211 (4 units) will count as 2 units towards Part A in lieu of ENGG1100, and 2 units towards program electives] | |
| | ENGG1001 Programming for Engineers or CSSE1001 Introduction to Software Engineering | 1,2 | 2 | | Course must be completed | |
| | MATH1051 Calculus & Linear Algebra I or MATH1071 Advanced Calculus & Linear Algebra I | 1,2 | 2 | | Course must be completed | |
| | MATH1052 Multivariate Calculus & Ordinary Differential Equations or MATH1072 Advanced Multivariate Calculus & Ordinary Differential Equations | 1,2 | 2 | | Course must be completed | |

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Specialisation in Software Engineering

Complete 36 units comprising:

- i. 34 units for all [Software Engineering Compulsory Courses](#), and
- ii. 2 units from [BE\(Hons\) Program Elective Courses](#)

| ✓/x compl. | Software Engineering Specialisation (36 units) | Sem offering | # | First offered | Approved substitution | Last offered |
|-------------------------------------|--|--------------|---|---------------|--|----------------------------|
| 34 units for all Compulsory Courses | | | | | | |
| | COMP3400 Functional and Logic Programming | 1 | 2 | | Course must be completed | |
| | COMP3506 Algorithms and Data Structures | 2 | 2 | | Course must be completed | |
| | CSSE2002 Programming in the Large | 1,2 | 2 | | Course must be completed | |
| | CSSE2010 Introduction to Computer Systems | 1,2 | 2 | | Course must be completed | |
| | CSSE2310 Computer Systems, Principles and Programming | 1,2 | 2 | | Course must be completed | |
| | CSSE3012 The Software Process | 1 | 2 | | CSSE3002 The Software Process (discontinued) | 1/20 |
| | CSSE3200 Project Design Testing and Evaluation | 2 | 2 | | DECO2800 Design Computing Studio 2 - Testing & Evaluation | |
| | CSSE6400 Software Architecture | 1 | 2 | | | |
| | DECO2500 Human-Computer Interaction | 1 | 2 | | Course must be completed | |
| | DECO3801 Design Computing Studio Build | 2 | 2 | | Course must be completed | |
| | ENGG1300 Introduction to Electrical Systems | 1,2 | 2 | | Course must be completed | |
| | INFS1200 Introduction to Information Systems | 1,2 | 2 | | Course must be completed | |
| | MATH1061 Discrete Mathematics | 1,2 | 2 | | Course must be completed | |
| | STAT2203 Probability Models and Data Analysis for Engineering | 2 | 2 | | Course must be completed | |
| | ENGG4901 Professional Practice and the Business Environment A or ENGG4902 Professional Practice and the Business Environment B | 1,2 | 2 | 1/24 | ENGG4900 Professional Practice and the Business Environment (discontinued) | 2/23 |
| | REIT4841 Research and Development Methods and Practice or REIT4842 Research and Development Methods and Practice | 1 2 | 4 | | ENGG4811 or ENGG4801 Thesis Project (discontinued) or ENGG4812 or ENGG4802 Thesis Project (discontinued) | 1/21 2/21 |

2 units from BE(Hons) Program Elective Courses

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Software Engineering No Major Option

Complete 16 units comprising:

- i. 2 units for all [Software Engineering Extension Course](#), and
- ii. 6 to 14 units from [Software Engineering Advanced Elective Courses](#), and
- iii. 0 to 8 units from [Software Engineering Breadth Elective Courses](#), and
- iv. 0 to 4 units from [BE\(Hons\) Program Elective Courses](#), and
- v. 0 to 4 units from [General Elective Courses](#)

| ✓/X compl. | Software Engineering No Major (16 units) | Sem offering | # | First offered | Approved substitution | Last offered |
|---|--|--------------|---|---------------|---|--------------|
| 2 units for Software Engineering Extension Course | | | | | | |
| | DECO3800 Design Computing Studio 3 – Proposal | 1 | 2 | | Course must be completed | |
| 6 to 14 units from Software Engineering Advanced Elective Courses (4 units at level 3 or higher) | | | | | | |
| | COMP3301 Operating Systems Architecture | 2 | 2 | | No substitution | |
| | COMP3400 Functional & Logic Programming | 1 | 2 | | No substitution | |
| | COMP3702 Artificial Intelligence | 2 | 2 | | No substitution | |
| | COMP3710 Pattern Recognition and Analysis | 2 | 2 | | No substitution | |
| | COMP3820 Digital Health Software Project | 2 | 2 | | No substitution | |
| | COMP4403 Compilers and Interpreters | 1 | 2 | | No substitution | |
| | COMP4500 Advanced Algorithms & Data Structures | 2 | 2 | | No substitution | |
| | COMP4702 Machine Learning | 1 | 2 | | No substitution | |
| | CYBR3000 Information Security | 2 | 2 | | COMS3000 Information Security (discontinued) | 2/20 |
| | COMS3200 Computer Networks I | 1 | 2 | | No substitution | |
| | COMS4507 Advanced Topics in Security | 1 | 2 | | No substitution | |
| | COMS6200 Computer Networks II | 2 | 2 | | COMS4200 Computer Networks II (discontinued) | 2/20 |
| | COSC3000 Visualization, Computer Graphics & Data Analysis | 1 | 2 | | No substitution | |
| | COSC3500 High-Performance Computing | 2 | 2 | | No substitution | |
| | CSSE3010 Embedded Systems Design & Interfacing | 1 | 2 | | No substitution | |

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| | | | | | | |
|--|---|-----|---|--|-----------------|--|
| | CSSE3100 Reasoning About Programs | 1 | 2 | | No substitution | |
| | CSSE4010 Digital System Design | 2 | 2 | | No substitution | |
| | CSSE4630 Principles of Program Analysis | 2 | 2 | | No substitution | |
| | DECO3500 Social & Mobile Computing | 2 | 2 | | No substitution | |
| | DECO3800 Design Computing Studio 3 – Proposal | 1 | 2 | | No substitution | |
| | DECO6500 Advanced Human-Computer Interaction | 2 | 2 | | No substitution | |
| | INFS2200 Relational Database Systems | 2 | 2 | | No substitution | |
| | INFS3200 Advanced Database Systems | 1,2 | 2 | | No substitution | |
| | INFS3202 Web Information Systems | 1 | 2 | | No substitution | |
| | INFS3208 Cloud Computing | 2 | 2 | | No substitution | |
| | INFS4203 Data Mining | 2 | 2 | | No substitution | |
| | INFS4205 Advanced Techniques for High Dimensional Data | 1 | 2 | | No substitution | |

0 to 8 units from Software Engineering Breadth Elective Courses

| | | | | | | |
|--|---|-------|---|--|---|--|
| | COMP3880 International Software Development | 2 | 2 | | No substitution | |
| | ENGG4020 Systems Safety Engineering | 2 | 2 | | No substitution | |
| | MATH2001 Calculus & Linear Algebra II | 1,2,S | 2 | | MATH2000 Calculus & Linear Algebra II (discontinued) | |
| | <p>Software Engineering Breadth Electives can also be chosen from course lists for the following major:</p> <ul style="list-style-type: none"> ○ Computer Engineering <p><i>Courses on this list may require pre-requisites. Please seek academic advice if required.</i></p> | | | | | |

0 to 4 units from BE(Hons) Program Elective Courses

0 to 4 units from General Elective Courses

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Computing Engineering Major Option

Complete 16 units comprising:

- i. 6 units for all [Computer Engineering Courses for Software Engineers](#), and
- ii. 4 units for all [Computer Engineering Compulsory Courses](#), and
- iii. 0 to 8 units from [Computer Engineering Elective Courses](#)

| ✓/X compl. | Major in Computer Engineering (16 units) | Sem offering | # | First offered | Approved substitution | Last offered |
|--|---|--------------|---|---------------|---|--------------|
| 6 units for Computer Engineering Courses for Software Engineers <u>only</u> | | | | | | |
| | CSSE3010 Embedded Systems Design & Interface | 1 | 2 | | Course must be completed | |
| | DECO3800 Design Computing Studio 3 – Proposal | 1 | 2 | | Course must be completed | |
| | ELEC2400 Electronic Circuits and Amplifiers | 1 | 2 | | ELEC3400 Electronic Circuits (discontinued) | 1/21 |
| 4 units for Computer Engineering Compulsory Courses | | | | | | |
| | CSSE4010 Digital System Design | 2 | 2 | | Course must be completed | |
| | CSSE4011 Advanced Embedded Systems | 1 | 2 | | Course must be completed | |
| 0 to 8 units from Computer Engineering Elective Courses | | | | | | |
| | COMP2140 Web/Mobile Programming | 2 | 2 | | No substitution | |
| | COMP3301 Operating Systems Architecture | 2 | 2 | | No substitution | |
| | COMP3702 Artificial Intelligence | 2 | 2 | | No substitution | |
| | COMP3710 Pattern Recognition and Analysis | 2 | 2 | | No substitution | |
| | COMP4403 Compilers and Interpreters | 1 | 2 | | No substitution | |
| | COMP4500 Advanced Algorithms & Data Structures | 2 | 2 | | No substitution | |
| | COMP4702 Machine Learning | 1 | 2 | | No substitution | |
| | CYBR3000 Information Security | 2 | 2 | | COMS3000 Information Security (discontinued) | 2/20 |
| | COMS3200 Computer Networks I | 1 | 2 | | No substitution | |
| | COMS4113 Photonics | 1 | 2 | | COMS4103 Photonics (discontinued) | 1/20 |
| | COMS4104 Microwave Engineering | 1 | 2 | | No substitution | |

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| | | | | | | |
|--|--|-----|---|--|---|-------------|
| | COMS4105 Communication Systems | 2 | 2 | | No substitution | |
| | COMS4507 Advanced Topics in Security | 1 | 2 | | No substitution | |
| | COMS6200 Computer Networks II | 2 | 2 | | COMS4200 Computer Networks II (discontinued) | 2/20 |
| | CSSE3012 The Software Process | 1 | 2 | | CSSE3002 The Software Process (discontinued) | 1/20 |
| | CSSE3100 Reasoning About Programs | 1 | 2 | | No substitution | |
| | CSSE3200 Project Design Testing and Evaluation | 2 | 2 | | DECO2800 Design Computing Studio 2 - Testing & Evaluation | |
| | CSSE4004 Distributed Computing | 1 | 2 | | No substitution | |
| | CSSE4400 Software Architecture (NEW) | 1 | 2 | | No substitution | |
| | CSSE4630 Principles of Program Analysis | 2 | 2 | | No substitution | |
| | CSSE6400 Software Architecture | 1 | 2 | | No substitution | |
| | COSC3500 High Performance Computing | 2 | 2 | | No substitution | |
| | DECO1400 Introduction to Web Design | 1 | 2 | | No substitution | |
| | DECO2500 Human-Computer Interaction | 1 | 2 | | No substitution | |
| | ELEC3310 Electrical Energy Conversion & Utilisation | 2 | 2 | | ELEC3300 Electrical Energy Conversion & Utilisation (discontinued) | 2/20 |
| | ELEC4310 Power Systems Analysis | 1 | 2 | | ELEC4300 Power Systems Analysis (discontinued) | 1/20 |
| | ELEC4620 Digital Signal Processing | 2 | 2 | | No substitution | |
| | ELEC4630 Image Processing and Computer Vision | 1 | 2 | | No substitution | |
| | ENGG2800 Team Project I | 1,2 | 2 | | No substitution | |
| | ENGG3800 Team Project II | 2 | 2 | | No substitution | |
| | ENGG4800 Project Management | 1 | 2 | | No substitution | |
| | INFS1200 Introduction to Information Systems | 1,2 | 2 | | No substitution | |
| | INFS2200 Relational Database Systems | 2 | 2 | | No substitution | |
| | MATH1061 Discrete Mathematics | | 2 | | No substitution | |
| | METR3100 Control System Implementation | 1 | 2 | | No substitution | |
| | METR4202 Robotics & Automation | 2 | 2 | | No substitution | |

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Data Science Minor

Complete 16 units comprising:

- i. 4 units for all [Data Science Compulsory Courses](#), and
- ii. 2 units from [Data Science Elective Courses](#), and
- iii. 2 units for [Software Engineering Extension Course](#); and
- iv. 6 units from [Software Engineering Advanced Electives](#)

Where courses are compulsory in both the specialisation and minor, the compulsory course in the minor must be substituted by courses from Data Science Minor Electives.

| ✓/X compl. | Minor in Data Science (16 units) | Sem offering | # | First offered | Approved substitution | Last offered |
|---|---|--------------|---|---------------|--------------------------|--------------|
| 4 units for all Data Science Compulsory Courses | | | | | | |
| | DATA2001 Fundamentals of Data Science | 2 | 2 | | Course must be completed | |
| | INFS1200 Introduction to Information Systems | 1,2 | 2 | | Course must be completed | |

| | | | | | | |
|---|--|---|---|--|-----------------|--|
| 4 units from Data Science Electives Courses | | | | | | |
| | COMP4702 Machine Learning | 1 | 2 | | No substitution | |
| | INFS2200 Relational Database Systems | 2 | 2 | | No substitution | |
| | INFS3208 Cloud Computing | 2 | 2 | | No substitution | |
| | INFS4203 Data Mining | 2 | 2 | | No substitution | |
| | STAT2003 Mathematical Probability | 1 | 2 | | No substitution | |
| | STAT2004 Statistical Modelling & Analysis | 2 | 2 | | No substitution | |

| | | | | | | |
|---|--|---|---|--|--------------------------|--|
| 2 units for Software Engineering Extension Course | | | | | | |
| | DECO3800 Design Computing Studio 3 – Proposal | 1 | 2 | | Course must be completed | |

| | | | | | | |
|--|--|--|--|--|--|--|
| 6 units from Software Engineering Advanced Electives | | | | | | |
|--|--|--|--|--|--|--|

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Design Minor

Complete 16 units comprising:

- i. 8 units for all [Design Minor Compulsory Course](#)
- ii. 2 units for [Software Engineering Extension Course](#); and
- iii. 6 units from [Software Engineering Advanced Electives](#)

| ✓/X compl. | Minor in Design (16 units) | Sem offering | # | First offered | Approved substitution | Last offered |
|--|--------------------------------------|-----------------|---|------------------|--------------------------|--------------|
| 8 units for all Design Minor Compulsory Course | | | | | | |
| | DSGN1100 Design: Interaction | 1 | 2 | | Course must be completed | |
| | DSGN1200 Design: Experience | 2 | 2 | | Course must be completed | |
| | DSGN2100 Design: Organisation | 1 | 2 | | Course must be completed | |
| | DSGN2200 Design: Environment | 2 | 2 | | Course must be completed | |

| | | | | | | |
|---|--|---|---|--|--------------------------|--|
| 2 units for Software Engineering Extension Course | | | | | | |
| | DECO3800 Design Computing Studio 3 – Proposal | 1 | 2 | | Course must be completed | |

| | | | | | | |
|--|--|--|--|--|--|--|
| 6 units from Software Engineering Advanced Electives | | | | | | |
|--|--|--|--|--|--|--|

| 6 units from Software Engineering Advanced Electives | | | | | | |
|--|--|-----|---|--|---|-------------|
| | COMP3301 Operating Systems Architecture | 2 | 2 | | No substitution | |
| | COMP3400 Functional & Logic Programming | 1 | 2 | | No substitution | |
| | COMP3702 Artificial Intelligence | 2 | 2 | | No substitution | |
| | COMP3710 Pattern Recognition and Analysis | 2 | 2 | | No substitution | |
| | COMP3820 Digital Health Software Project | 2 | 2 | | No substitution | |
| | COMP4403 Compilers and Interpreters | 1 | 2 | | No substitution | |
| | COMP4500 Advanced Algorithms & Data Structures | 2 | 2 | | No substitution | |
| | COMP4702 Machine Learning | 1 | 2 | | No substitution | |
| | CYBR3000 Information Security | 2 | 2 | | COMS3000 Information Security (discontinued) | 2/20 |
| | COMS3200 Computer Networks I | 1 | 2 | | No substitution | |
| | COMS4507 Advanced Topics in Security | 1 | 2 | | No substitution | |
| | COMS6200 Computer Networks II | 2 | 2 | | COMS4200 Computer Networks II (discontinued) | 2/20 |
| | COSC3000 Visualization, Computer Graphics & Data Analysis | 1 | 2 | | No substitution | |
| | COSC3500 High-Performance Computing | 2 | 2 | | No substitution | |
| | CSSE3010 Embedded Systems Design & Interfacing | 1 | 2 | | No substitution | |
| | CSSE3100 Reasoning About Programs | 1 | 2 | | No substitution | |
| | CSSE4010 Digital System Design | 2 | 2 | | No substitution | |
| | CSSE4630 Principles of Program Analysis | 2 | 2 | | No substitution | |
| | DECO3500 Social & Mobile Computing | 2 | 2 | | No substitution | |
| | DECO3800 Design Computing Studio 3 – Proposal | 1 | 2 | | No substitution | |
| | DECO6500 Advanced Human-Computer Interaction | 2 | 2 | | No substitution | |
| | INFS2200 Relational Database Systems | 2 | 2 | | No substitution | |
| | INFS3200 Advanced Database Systems | 1,2 | 2 | | No substitution | |

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| | | | | | | |
|--|---|---|---|--|-----------------|--|
| | INFS3202 Web Information Systems | 1 | 2 | | No substitution | |
| | INFS3208 Cloud Computing | 2 | 2 | | No substitution | |
| | INFS4203 Data Mining | 2 | 2 | | No substitution | |
| | INFS4205 Advanced Techniques for High Dimensional Data | 1 | 2 | | No substitution | |