

## CHECKLIST Bachelor of Engineering (Honours) - Electrical Engineering Specialisation (2455): Transition to new program

Full name: \_\_\_\_\_ Student Number: \_\_\_\_\_ Date: \_\_\_\_\_

### Points to note

- You need to ensure that you meet minimum program and major requirements (listed below)
- You cannot count the same course twice
- You need to ensure that you don't take courses that are incompatible with courses that you have already counted towards your program, and that any prerequisites have been met

### Complete 64 units comprising -

- I. 8 units for all BE(Hons) Core Courses; and
- II. 36 units for one Specialisation in Electrical Engineering; and
- III. One of the following:
  - a. 16 units for one Major from Electrical Engineering Major Options\*, or
  - b. 16 units for Electrical Engineering Minor Options\*\*, or
  - c. 16 units for Electrical Engineering Specialisation No Major option, and
- IV. 0 to 4 units from Preparatory Science and Mathematics Courses; and
- V. 0 to 4 units from Program Electives; and
- VI. 0 to 4 units from General Electives.

\*Majors available in: Biomedical Engineering; Computer Engineering

\*\*Minors available in: Computing; Data Science; Design

NB: Of the 64 units required for the program, students must complete at least 24 units of courses at level 3 or higher and no more than 24 units at level 1.

✓/X compl.	You must complete (NEW Program requirements)	Sem offering	#	First offered	Approved substitution	Last offered
	<b>8 units for all: Core Courses</b>					
	<b>ENGG1100</b> 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]	
	<b>ENGG1001</b> Programming for Engineers (NEW) or <b>CSSE1001</b> Introduction to Software Engineering	1,2	2	<b>1/21</b>	Course must be completed	
	<b>MATH1051</b> Calculus & Linear Algebra I or <b>MATH1071</b> Advanced Calculus & Linear Algebra I	1,2	2		Course must be completed	
	<b>MATH1052</b> Multivariate Calculus & Ordinary Differential Equations or <b>MATH1072</b> Advanced Multivariate Calculus & Ordinary Differential Equations	1,2	2		Course must be completed	

✓ - course already completed X – course to be undertaken

Checked by (Faculty: Name and Date): \_\_\_\_\_

✓/X compl.	2021 Electrical Engineering specialisation (36 units)	Sem offering	#	First offered	Approved substitution	Last offered
	34 units for all: Compulsory Courses					
	ENGG1300 Introduction to Electrical Systems	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	
	ELEC2004 Circuits, Signals and Systems	2	2		Course must be completed	
	ELEC2300 Electromagnetism and Electromechanics (NEW)	1	2	1/22	ELEC2003 Electromechanics & Electronics (discontinued).	1/21
	ELEC2400 Electronic Circuits and Amplifiers (NEW)	1	2	1/22	ELEC3400 Electronic Circuits (discontinued)	1/21
	ENGG2800 Team Project I	1,2	2		Course must be completed	
	MATH2001 Calculus & Linear Algebra II	1,2,S	2		MATH2001 Advanced Calculus & Linear Algebra II	
	MATH2010 Analysis of Ordinary Differential Equations (1)	1,2	1		Course must be completed	
	STAT2201 Probability Models and Data Analysis for Engineering (1)	1,2	1		STAT2202 Probability Models for Engineering & Science (discontinued)	2/20
	CSSE3010 Embedded Systems Design & Interfacing	1	2		Course must be completed	
	ELEC3004 Signals, Systems & Control	1	2		Course must be completed	
	ELEC3100 Fundamentals of Electromagnetic Fields & Waves	2	2		Course must be completed	
	ENGG3800 Team Project II	2	2		Course must be completed	
	ENGG4900 Professional Practice and the Business Environment	1,2	2		Course must be completed	
	METR4201 Control Engineering I	1	2		Course must be completed	
	REIT4841 Research and Development Methods and Practice (NEW) (4) or REIT4842 Research and Development Methods and Practice (NEW) (4)	1 2	4	1/22 2/22	ENGG4801 Thesis Project (discontinued) / ENGG4811 (from 1/21) or ENGG4802 Thesis Project (discontinued) / ENGG4812 (from 2/21)	1/21 2/21
	2 units from Program Electives					

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BE(Hons) Transition Plan – Electrical Engineering NEW

Checked by (Faculty: Name and Date): \_\_\_\_\_

## Electrical Engineering No Major Option

You must complete 16 units comprising -

- i. 2 units for Electrical Engineering Extension Course; and
- ii. 6 to 14 units from any Electrical Engineering Advanced Electives; and
- iii. 0 to 8 units from any Electrical Engineering Breadth Electives; and
- iv. 0 to 4 units from Program Electives
- v. 0 to 4 units from General Electives.

✓/X compl.	2 units for: Electrical Engineering Extension Course	Sem offering	#	First offered	Approved substitution	Last offered
	ELEC3310 Electrical Energy Conversion & Utilisation	2	2	2/21	ELEC3300 Electrical Energy Conversion & Utilisation (discontinued)	2/20
	6 to 14 units from any: Electrical Engineering Advanced Electives					
	COMS4113 Photonics	1	2	1/21	COMS4103 Photonics (discontinued)	1/20
	COMS4104 Microwave Engineering	1	2		No substitution	
	COMS4105 Communication Systems	2	2		No substitution	
	CSSE4010 Digital System Design	2	2		No substitution	
	ELEC4310 Power Systems Analysis	1	2	1/21	ELEC4300 Power Systems Analysis (discontinued)	1/20
	ELEC4410 Advanced Electronic & Power Electronics Design	2	2	2/21	ELEC4400 Advanced Electronic & Power Electronics Design (discontinued)	2/20
	ELEC4620 Digital Signal Processing	2	2		No substitution	
	ELEC4630 Image Processing and Computer Vision	1	2		No substitution	
	METR4202 Robotics & Automation	2	2		No substitution	
	METR6203 Control Engineering 2	2	2	2/21	METR7203 Control Engineering 2 (discontinued)	2/20
	0 to 8 units from any: Electrical Engineering Breadth Electives					
	ELEC4302 Power System Protection	2	2		No substitution	
	ELEC4320 Modern Asset Management and Condition Monitoring in Power System	2	2		No substitution	
	ENGG4020 Systems Safety Engineering	2	2		No substitution	

Electrical Engineering Breadth Electives can also be chosen from course lists for the following majors:

- o Biomedical Engineering
- o Computer Engineering

*Courses on this list may require pre-requisites. Please seek academic advice if required.*

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**BE(Hons) Transition Plan – Electrical Engineering NEW**

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✓/X compl.	Major in Biomedical Engineering (16 units)	Sem offering	#	First offered	Approved substitution	Last offered
	4 units for: <b>Biomedical Engineering courses for Electrical Engineers <u>only</u></b>					
	<b>BIOE6403</b> Biomedical Instrumentation	2	2	<b>2/21</b>	<b>ELEC6403</b> Biomedical Instrumentation (discontinued)	<b>2/20</b>
	<b>BIOE6601</b> Medical Imaging	2	2	<b>2/21</b>	<b>ELEC6601</b> Medical Imaging (discontinued)	<b>2/20</b>
	8 units for: <b>Biomedical Engineering Compulsory Courses</b>					
	<b>BIOE1001</b> Principles of Biomedical & Bioprocess Engineering	1	2	<b>1/21</b>	<b>CHEE1001</b> Principles of Biological Engineering (discontinued) or <b>BIOL1020</b> Genes, Cells & Evolution	<b>1/20</b>
	<b>BIOE3001</b> Quantitative Methods in Biomedical Engineering (NEW)	2	2	<b>2/22</b>	Course must be completed	
	<b>BIOE4305</b> Biomaterials: Materials in Medicine	2	2	<b>2/21</b>	<b>CHEE4305</b> Biomaterials: Materials in Medicine (discontinued)	<b>2/20</b>
	<b>BIOE6901</b> Medical Device Engineering	1	2	<b>1/21</b>	<b>ELEC7901</b> Advanced Medical Device Engineering (discontinued)	<b>1/20</b>
	4 units from: <b>Biomedical Engineering Electives</b>					
	<b>BIOC2000</b> Biochemistry & Molecular Biology	1	2			
	<b>BIOE6028</b> Metabolic Engineering	2	2	<b>2/21</b>	<b>CHEE4028</b> Metabolic Engineering (discontinued)	<b>2/20</b>
	<b>BIOE6034</b> Cell and Tissue Engineering	1	2	<b>1/21</b>	<b>CHEE4034</b> Cell and Tissue Engineering (discontinued)	<b>1/20</b>
	<b>BIOE6403</b> Biomedical Instrumentation	2	2	<b>2/21</b>	<b>ELEC4403/ELEC6403</b> Biomedical Instrumentation (discontinued)	<b>2/20</b>
	<b>BIOE6601</b> Medical Imaging	2	2	<b>2/21</b>	<b>ELEC6601</b> Medical Imaging (discontinued)	<b>2/20</b>
	<b>BIOL1040</b> Cells to Organisms	1,2	2		No substitution	
	<b>BIOL2200</b> Cell Structure & Function	1	2		No substitution	
	<b>BIOL2202</b> Genetics	2	2		No substitution	
	<b>BINF3014</b> Advanced Bioinformatics	2	2	<b>2/21</b>	<b>BIOL3014</b> Advanced Bioinformatics (discontinued)	<b>2/20</b>
	<b>BIOM2011</b> Integrative Cell & Tissue Biology	1	2		No substitution	
	<b>BIOM2012</b> Systems Physiology	2	2		No substitution	
	<b>BIOM2020</b> Human Anatomy	1	2		No substitution	
	<b>BIPH2000</b> Foundations of Biophysics	2	2		No substitution	

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	<b>COMP4702</b> Machine Learning	1	2		No substitution	
	<b>COMS4113</b> Photonics	1	2	<b>1/21</b>	<b>COMS4103</b> Photonics (discontinued)	<b>1/20</b>
	<b>COMS4104</b> Microwave Engineering	1	2		No substitution	
	<b>CSSE2002</b> Programming in the Large	1,2	2		No substitution	
	<b>CSSE4011</b> Advanced Embedded Systems	1	2		No substitution	
	<b>ELEC4620</b> Digital Signal Processing	2	2		No substitution	
	<b>ELEC4630</b> Image Processing and Computer Vision	1	2		No substitution	
	<b>MATE6301</b> Nanomaterials	2	2	<b>2/21</b>	<b>CHEE4301</b> Nanomaterials (discontinued)	<b>2/20</b>
	<b>MECH3301</b> Materials Selection	2	2		No substitution	
	<b>MECH4950</b> Advanced Manufacturing in Practice	2	2		No substitution	
	<b>METR4202</b> Robotics & Automation	2	2		No substitution	
	<b>MICR2000</b> Microbiology & Immunology	2	2		No substitution	
	<b>SCIE2100</b> Introduction to Bioinformatics	1	2		No substitution	
	<b>CHEE4026</b> Research Thesis or <b>CHEE4027</b> Research Thesis	1 2	4		No substitution	

✓/X compl.	Major in Computer Engineering (16 units)	Sem offering	#	First offered	Approved substitution	Last offered
	4 units for: <b>Computer Engineering Courses for Electrical Engineers <u>only</u></b>					
	<b>CSSE2002</b> Programming in the Large	1,2	2		Course must be completed	
	<b>COMP3506</b> Algorithms & Data Structures	2	2		Course must be completed	
	4 units for: <b>Computer Engineering Compulsory Courses</b>					
	<b>CSSE4010</b> Digital System Design	2	2		Course must be completed	
	<b>CSSE4011</b> Advanced Embedded Systems	1	2		Course must be completed	

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✓/X compl.	0 to 8 units from: Computer Engineering Electives (no more than 6 units at level 1 or 2)					
	COMP2140 Web/Mobile Programming (NEW)	2	2	2/22	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	2/21	COMS3000 Information Security (discontinued)	2/20
	COMS3200 Computer Networks I	1	2		No substitution	
	COMS4113 Photonics	1	2	1/21	COMS4103 Photonics (discontinued)	1/20
	COMS4104 Microwave Engineering	1	2		No substitution	
	COMS4105 Communication Systems	2	2		No substitution	
	COMS4507 Advanced Topics in Security	1	2		No substitution	
	COMS6200 Computer Networks II	1	2	2/21	COMS4200 Computer Networks II (discontinued)	2/20
	CSSE3012 The Software Process	1	2	1/21	CSSE3002 The Software Process (discontinued)	1/20
	CSSE3100 Reasoning About Programs	1	2		No substitution	
	CSSE3200 Project Design Testing and Evaluation (NEW)	2	2	2/22	DECO2800 Design Computing Studio 2 – Testing & Evaluation	
	CSSE4004 Distributed Computing	1	2		No substitution	1/21
	CSSE4400 Software Architecture (NEW)	1	2	1/22	CSSE4004 Distributed Computing (discontinued)	1/21
	CSSE4630 Principles of Program Analysis	2	2		No substitution	
	COSC3500 High Performance Computing	2	2		No substitution	

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	<b>DECO1400</b> Introduction to Web Design	1	2		No substitution	
	<b>DECO2500</b> Human-Computer Interaction	1	2		No substitution	
	<b>ELEC3310</b> Electrical Energy Conversion & Utilisation	2	2	<b>2/21</b>	<b>ELEC3300</b> Electrical Energy Conversion & Utilisation (discontinued)	<b>2/20</b>
	<b>ELEC4310</b> Power Systems Analysis	1	2	<b>1/21</b>	<b>ELEC4300</b> Power Systems Analysis (discontinued)	<b>1/20</b>
	<b>ELEC4620</b> Digital Signal Processing	2	2		No substitution	
	<b>ELEC4630</b> Image Processing and Computer Vision	1	2		No substitution	
	<b>ENGG2800</b> Team Project I	1,2	2		No substitution	
	<b>ENGG3800</b> Team Project II	2	2		No substitution	
	<b>ENGG4800</b> Project Management	1	2		No substitution	
	<b>INFS1200</b> Introduction to Information Systems	1,2	2		No substitution	
	<b>INFS2200</b> Relational Database Systems	2	2		No substitution	
	<b>METR3100</b> Control System Implementation	1	2		No substitution	
	<b>METR4202</b> Robotics & Automation	2	2		No substitution	

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## Electrical Engineering with Minor Option

Complete 16 units comprising:

- i. 8 units for one of the following minors:  
Computing  
Data Science  
Design

and

- ii. 2 units for Electrical Engineering Extension Course; and
- iii. 6 units from Electrical Engineering Advanced Electives

✓/X compl.	Minor in Computing (8 units)	Sem offering	#	First offered	Approved substitution	Last offered
	<b>CSSE2002</b> Programming in the Large	1,2	2		Course must be completed	
	<b>COMP3506</b> Algorithms and Data Structures	2	2		Course must be completed	
	4 units from: Computing Electives					
	<b>COMP4702</b> Machine Learning	1	2		No substitution	
	<b>COSC2500</b> Numerical Methods in Computational Science	2	2		No substitution	
	<b>COSC3000</b> Visualization, Computer Graphics & Data Analysis	1	2		No substitution	
	<b>COSC3500</b> High Performance Computing	2	2		No substitution	
	<b>INFS1200</b> Introduction to Information Systems	1,2	2		No substitution	
	<b>INFS3208</b> Cloud Computing	2	2		No substitution	
	<b>MATH3202</b> Operations Research & Mathematical Planning	1	2		No substitution	

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✓/X compl.	Minor in Data Science (8 units)	Sem offering	#	First offered	Approved substitution	Last offered
	<b>DATA2001</b> Introduction to Data Science (NEW)	2	2	<b>2/22</b>	Course must be completed	
	<b>INFS1200</b> Introduction to Information Systems	1,2	2		Course must be completed	
	<b>4 units from: Data Science Electives</b>					
	<b>COMP4702</b> Machine Learning	1	2		No substitution	
	<b>INFS2200</b> Relational Database Systems	2	2		No substitution	
	<b>INFS3208</b> Cloud Computing	2	2		No substitution	
	<b>INFS4203</b> Data Mining	2	2		No substitution	
	<b>STAT2003</b> Mathematical Probability	1	2		No substitution	
	<b>STAT2004</b> Statistical Modelling & Analysis	2	2		No substitution	

*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 Design (8 units)	Sem offering	#	First offered	Approved substitution	Last offered
	<b>2 units for all: Design Minor Compulsory Courses</b>					
	<b>DSGN1500</b> Design for a Better World	2	2		Course must be completed	
	<b>6 units from: Design Electives</b>					
	<b>DSGN1100</b> Design: Interaction	1	2		No substitution	
	<b>DSGN1200</b> Design: Experience	2	2		No substitution	
	<b>DSGN2100</b> Design: Organisation	1	2		No substitution	
	<b>DSGN2200</b> Design: Environment	2	2		No substitution	
	<b>DSGN3100</b> Design: Infrastructure	1	2		No substitution	

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