

CHECKLIST Bachelor of Engineering (Honours) – Mechanical Engineering (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 Mechanical Engineering; and
- III. One of the following:
 - a. 16 units for one Major from Mechanical Engineering Major Options*, or
 - b. 16 units for Mechanical Engineering Minor Options**, or
 - c. 16 units for Mechanical 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: Aerospace Engineering; Biomedical Engineering; Fire Safety Engineering; Materials Engineering; Mining Engineering

**Minors available in: Data Science; Computing; 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
	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 (NEW) or CSSE1001 Introduction to Software Engineering	1,2	2	1/21	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	

✓ - course already completed X – course to be undertaken

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✓/x compl.	2021 Mechanical Engineering specialisation list (36 units)	Sem offering	#	First offered	Approved substitution	Last offered
	36 units for all: Compulsory Courses					
	ENGG1300 Introduction to Electrical Systems	1,2	2		Course must be completed	
	ENGG1500 Thermodynamics: Energy and the Environment	1,2	2		ENGG1500 Engineering Thermodynamics	
	ENGG1700 Statics & Materials (NEW)	1,2	2	1/21	ENGG1400 Engineering Mechanics: Statics & Dynamics (discontinued)	2/20
	MECH2100 Machine Element Design	2	2		Course must be completed	
	MECH2210 Dynamics I	2	2		Course must be completed	
	MECH2300 Structures and Materials	1	2		Course must be completed	
	MECH2305 Introduction to Engineering Design and Manufacturing	1	2		Course must be completed	
	MECH2410 Fundamentals of Fluid Mechanics	1	2		Course must be completed	
	MATH2001 Calculus & Linear Algebra II	1,2	2		MATH2001 Advanced Calculus & Linear Algebra II MATH2000 Calculus & Linear Algebra II	
	MATH2010 Analysis of Ordinary Differential Equations (1) and STAT2201 Probability Models and Data Analysis for Engineering (1)	1,2 1,2	1		Course must be completed	
	MECH3100 Systems Engineering Practice	2	2		Course must be completed	
	MECH3200 Advanced Dynamics and Vibrations	2	2		Course must be completed	
	MECH3400 Thermodynamics and Heat Transfer	1	2		Course must be completed	
	MECH3610 Systems Engineering Principles (NEW)	1	2	1/23	MECH3600 Engineering Management & Communication (discontinued)	1/22
	ENGG4900 Professional Practice and the Business Environment	1,2	2		Course must be completed	
	METR4201 Control Engineering I	1	2		Course must be completed	
	ENGG4552 Major Design Project (4) ENGG4600 Engineering Thesis (4) ENGG4601 Engineering Thesis (4) or ENGG4013 Professional Engineering Project (NEW) (4)	1,2 1 2 2	6 4	TBA	MECH4552 Major Design Project (4) (discontinued) MECH4500 Engineering Thesis (4) (discontinued) or MECH4501 Engineering Thesis (4) (discontinued) or ENGG4011 Professional Engineering Project (6) (discontinued)	2/20

Once you have completed the checklist, you may either email your checklist to the Faculty on enquiries@eit.uq.edu.au or book an appointment with an Academic Advisor directly.

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Mechanical Engineering No Major Option

Complete 16 units comprising -

1. 6 units for all Mechanical Engineering Extension Courses; and
2. 4 to 10 units from Mechanical Engineering Advanced Electives; and
3. 0 to 6 units from Mechanical Engineering Breadth Electives; and
4. 0 to 4 units from Program Electives; and
5. 0 to 4 units from General Electives.

✓/X compl.	6 units for all: Mechanical Engineering Extension Courses	Sem offering	#	First offered	Approved substitution	Last offered
	MECH2700 Computational Engineering & Data Analysis	2	2		Course must be completed	
	MECH3780 Computational Mechanics (NEW)	1	2	1/23	MECH3300 Finite Element Method & Fracture Mechanics (discontinued)	1/22
	MECH3410 Fluid Mechanics	2	2		Course must be completed	

✓/X compl.	4 to 10 units from: Mechanical Engineering Advanced Electives	Sem offering	#	First offered	Approved substitution	Last offered
	AERO4300 Aerospace Composites	2	2		No substitution	
	AERO4450 Aerospace Propulsion	1	2		No substitution	
	AERO4470 Hypersonics	1	2		No substitution	
	AERO4800 Space Engineering	2	2		No substitution	
	ENGY4000 Energy Systems	1	2		No substitution	
	FIRE3700 Introduction to Fire Safety Engineering	1	2		No substitution	
	MATE4302 Electrochemistry and Corrosion	2	2	2/21	CHEE4302 Electrochemistry & Corrosion (discontinued)	2/20
	MECH3250 Engineering Acoustics	2	2		No substitution	
	MECH3301 Materials Selection	2	2		No substitution	
	MECH4304 Net Shape Manufacturing	1	2		No substitution	
	MECH4950 Advanced Manufacturing in Practice	2	2		No substitution	
	MECH4951 Special Topics D	1	1		No substitution	
	METR3100 Control System Implementation	1	2		No substitution	
	METR4202 Robotics & Automation	2	2		No substitution	
	TIMS3309 Technology and Innovation Management	2	2		No substitution	

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✓/X compl.	0 to 6 units from: Mechanical Engineering Breadth Electives	Sem offering	#	First offered	Approved substitution	Last offered
	ELEC2300 Electromagnetism and Electromechanics (NEW)	1	2	1/22	ELEC2003 Electromechanics & Electronics (discontinued).	1/21
	ENGG1600 Introduction to Research Practices - The Big Issues	2	2		No substitution	
	FIRE3700 Introduction to Fire Safety Engineering	1	2		No substitution	
	MECH2310 Science and Engineering of Metals	2	2		No substitution	
	PHYS2082 Space Science & Stellar Astrophysics	2	2		No substitution	

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

Aerospace Engineering
Biomedical Engineering
Fire Safety Engineering
Materials Engineering
Mining Engineering

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

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✓/X compl.	Major in Aerospace Engineering (16 units)	Sem offering	#	First offered	Approved substitution	Last offered
	MECH2700 Computational Engineering & Data Analysis	2	2		Course must be completed	
	MECH3780 Computational Mechanics (NEW)	1	2	1/23	MECH3300 Finite Element Method & Fracture Mechanics (discontinued)	1/22
	MECH3410 Fluid Mechanics	2	2		Course must be completed	
	AERO4100 Aerospace Design & Manufacturing	2	2		Course must be completed	
	AERO4200 Flight Mechanics & Avionics	1	2		Course must be completed	
	AERO4450 Aerospace Propulsion	1	2		Course must be completed	
	4 units from: Aerospace Engineering Electives					
	AERO4300 Aerospace Composites	2	2		No substitution	
	AERO4470 Hypersonics	1	2		No substitution	
	AERO4800 Space Engineering	2	2		No substitution	

✓/X compl.	Major in Biomedical Engineering (16 units)	Sem offering	#	First offered	Approved substitution	Last offered
	4 units from: Biomedical Engineering courses for Mechanical Engineers only					
	MECH2700 Computational Engineering & Data Analysis	2	2		Course must be completed	
	MECH3780 Computational Mechanics (NEW)	1	2	1/23	MECH3300 Finite Element Method & Fracture Mechanics (discontinued)	1/22
	8 units from: Biomedical Engineering Compulsory Courses					
	BIOE1001 Principles of Biomedical & Bioprocess Engineering	1	2	1/21	CHEE1001 Principles of Biological Engineering (discontinued)	1/20
	BIOE3001 Quantitative Methods in Biomedical Engineering (NEW)	2	2	2/22	Course must be completed	
	BIOE4305 Biomaterials: Materials in Medicine	2	2	2/21	CHEE4305 Biomaterials: Materials in Medicine (discontinued)	2/20
	BIOE6901 Medical Device Engineering	1	2	1/21	ELEC7901 Advanced Medical Device Engineering (discontinued)	1/20
	4 units from: Biomedical Engineering Electives					
	BIOC2000 Biochemistry & Molecular Biology	1	2		No substitution	
	BIOE6028 Metabolic Engineering	2	2	2/21	CHEE4028 Metabolic Engineering (discontinued)	2/20
	BIOE6403 Biomedical Instrumentation	2	2	2/21	ELEC4403/ELEC6403 Biomedical Instrumentation (discontinued)	2/20

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	BIOE6601 Medical Imaging	2	2	2/21	ELEC6601 Medical Imaging (discontinued)	2/20
	BIOL1040 Cells to Organisms	1,2	2		No substitution	
	BIOL2200 Cell Structure & Function	1	2		No substitution	
	BIOL2202 Genetics	2	2		No substitution	
	BINF3014 Advanced Bioinformatics	2	2	2/21	BIOL3014 Advanced Bioinformatics (discontinued)	2/20
	BIOM2011 Integrative Cell & Tissue Biology	1	2		No substitution	
	BIOM2012 Systems Physiology	2	2		No substitution	
	BIOM2020 Human Anatomy	1	2		No substitution	
	BIPH2000 Foundations of Biophysics	2	2		No substitution	
	COMP4702 Machine Learning	1	2		No substitution	
	COMS4113 Photonics	1	2	1/21	COMS4103 Photonics (discontinued)	1/20
	COMS4104 Microwave Engineering	1	2		No substitution	
	CSSE2002 Programming in the Large	1,2	2		No substitution	
	CSSE4011 Advanced Embedded Systems	1	2		No substitution	
	ELEC4620 Digital Signal Processing	2	2		No substitution	
	ELEC4630 Image Processing and Computer Vision	1	2		No substitution	
	MATE6301 Nanomaterials	2	2	2/21	CHEE4301 Nanomaterials (discontinued)	2/20
	MECH3301 Materials Selection	2	2		No substitution	
	MECH4950 Advanced Manufacturing in Practice	2	2		No substitution	
	METR4202 Robotics & Automation	2	2		No substitution	
	MICR2000 Microbiology & Immunology	2	2		No substitution	
	SCIE2100 Introduction to Bioinformatics	1	2		No substitution	
	CHEE4026 Thesis Project or CHEE4027 Thesis Project	1 2	4		CHEE4006 Individual Inquiry OR CHEE4007 Individual Inquiry (plus 2 units electives)	

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✓/X compl.	Major in Fire Safety Engineering (16 units)	Sem offering	#	First offered	Approved substitution	Last offered
	6 units for: Fire Safety Engineering Courses for Mechanical Engineers <u>only</u>					
	MECH2700 Computational Engineering & Data Analysis	2	2		MECH2700 Engineering Analysis I	
	MECH3780 Computational Mechanics (NEW)	1	2	1/23	MECH3300 Finite Element Method & Fracture Mechanics (discontinued)	1/22
	2 units from Mechanical Engineering Advanced Electives list		2			
	10 units for: Fire Safety Engineering Compulsory Courses					
	FIRE3700 Introduction to Fire Safety Engineering	1	2		Course must be completed	
	FIRE4610 Fire Engineering Design: Solutions for Implicit Safety	1	2		Course must be completed	
	FIRE6090 Fire Dynamics (NEW)	2	2	2/23	FIRE7620 Fire Dynamics (discontinued)	
	FIRE6100 Fire Engineering Design: Explicit Quantification of Safety (NEW)	2	2	2/23	FIRE7680 Fire Engineering Design: Explicit Quantification of Safety (discontinued)	
	FIRE6110 Structural Fire Engineering (NEW)	1	2	1/23	FIRE7660 Structural Fire Engineering (discontinued)	

✓/X compl.	Major in Materials Engineering (16 units)	Sem offering	#	First offered	Approved substitution	Last offered
	4 units for: Materials Engineering Courses for Mechanical Engineers <u>only</u>					
	MECH2700 Computational Engineering & Data Analysis	2	2		Course must be completed	
	MECH3780 Computational Mechanics (NEW)	1	2	1/23	MECH3300 Finite Element Method & Fracture Mechanics (discontinued)	1/22
	8 units for: Materials Engineering Compulsory Courses					
	MECH2310 Science and Engineering of Metals	2	2		Course must be completed	
	CHEE3301 Polymers	1	2		CHEE3301 Polymer Engineering	
	MECH3301 Materials Selection	2	2		Course must be completed	
	CHEE4302 Electrochemistry & Corrosion	2	2		Course must be completed	

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	4 units from: Materials Engineering Electives					
	AERO4300 Aerospace Composites	2	2		No substitution	
	BIOE4305 Biomaterials: Materials in Medicine	2	2	2/21	CHEE4305 Biomaterials: Materials in Medicine (discontinued)	2/20
	CHEE4006 Individual Inquiry	1	2		No substitution	
	CHEE4007 Individual Inquiry	2	2		No substitution	
	CHEE4026 Thesis Project or CHEE4027 Thesis Project	1 2	4		No substitution	
	MATE6301 Nanomaterials	2	2	2/21	CHEE4301 Nanomaterials (discontinued)	2/20
	MECH2305 Introduction to Engineering Design and Manufacturing	1	2		No substitution	
	MECH4304 Net Shape Manufacturing	1	2		No substitution	

✓/X compl.	Major in Mining Engineering (16 units)	Sem offering	#	First offered	Approved substitution	Last offered
	4 units for: Mining Engineering Courses for Mechanical Engineers <u>only</u>					
	MECH2700 Computational Engineering and Data Analysis	2	2		Course must be completed	
	MECH3780 Computational Mechanics (NEW)	1	2	1/23	MECH3300 Finite Element Method & Fracture Mechanics (discontinued)	1/22
	12 units for: Mining Engineering Compulsory Courses					
	MINE3110 Integrated Orebody Knowledge (NEW)	2	2	2/23	MINE3120 Resource Estimation (discontinued)	1/22
	MINE3122 Mining Systems & Automation	2	2	2/23	MINE3122 Mining Systems	1/22
	MINE3123 Mine Planning & Sustainability	1	2	1/23	MINE3123 Mine Planning	2/22
	MINE3129 Applied Mining Geomechanics (NEW)	1	2	1/23	MINE3121 Mining Geomechanics (discontinued)	1/22
	MINE4124 Mine Design, Feasibility and Sustainability	2	2	2/24	MINE4124 Hard Rock Mine Design & Feasibility	1/23
	MINE4129 Mine Process Optimisation (NEW)	2	2	2/23	MINE3125 Explosives and Blasting Engineering (discontinued)	2/22

Mechanical Engineering with Engineering Minor

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Complete 16 units comprising:

8 units for one of the following minors:

Data Science

Computing

Design

and

8 units from Mechanical Engineering Advanced Electives

✓/X compl.	Minor in Computing (8 units)	Sem offering	#	First offered	Approved substitution	Last offered
	4 units for all: Computing Minor Compulsory Courses					
	CSSE2002 Programming in the Large	1,2	2		Course must be completed	
	COMP3506 Algorithms and Data Structures	2	2		Course must be completed	
	4 units from: Computing Electives					
	COMP4702 Machine Learning	1	2		No substitution	
	COSC2500 Numerical Methods in Computational Science	2	2		No substitution	
	COSC3000 Visualization, Computer Graphics & Data Analysis	1	2		No substitution	
	COSC3500 High Performance Computing	2	2		No substitution	
	INFS1200 Introduction to Information Systems	1,2	2		No substitution	
	INFS3208 Cloud Computing	2	2		No substitution	
	MATH3202 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
	4 units for all: Data Science Minor Compulsory Courses					
	DATA2001 Introduction to Data Science (NEW)	2	2	2/22	Course must be completed	
	INFS1200 Introduction to Information Systems	1,2	2		Course must be completed	
	4 units from: Data Science Electives					
	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	

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

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