CHECKLIST Bachelor of Engineering (Honours) – Mechatronic Engineering Specialisation: Transition to new program

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

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
- Please ensure you read the program rules to check for any special rules with your dual program, as course restrictions may apply
- Please contact the relevant Faculty for information regarding the other component of your dual program

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

I. 8 units for all BE(Hons) Core Courses; and
II. 36 units for one Specialisation in Mechatronic Engineering; and
III. One of the following:
    a. 16 units for one Major from Mechatronic Engineering Major Options*, or
    b. 16 units for Mechatronic Engineering Minor Options**, or
    c. 16 units for Mechatronic Engineering Specialisation No Major option, and

*Majors available in: Computer Engineering; Mining Engineering

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

✓/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

Checked by (Faculty: Name and Date): _____

✓/x compl.	2021 Mechatronic 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	
	ENGG1700 Statics & Materials (NEW)	1,2	2	**1/21**	**ENGG1400** Engineering Mechanics: Statics & Dynamics (discontinued)	**2/20**
	CSSE2010 Introduction to Computer Systems	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**
	MATH2001 Calculus & Linear Algebra II	1,2,S	2		**MATH2001** Advanced 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 1		**STAT2202** Probability Models for Engineering & Science (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	
	METR2800 Mechatronic System Design Project I	2	2		Course must be completed	
	METR3100 Control Systems Implementation	2	2		Course must be completed	
	METR4201 Control Engineering I	1	2		Course must be completed	
	METR4202 Robotics & Automation	2	2		Course must be completed	
	METR4810 Mechatronic System Design Project II	1	2		Course must be completed	
	METR4910/METR4911 Thesis/Design Project (4)	1	4	**1/21**	**METR4900/METR4901** Thesis/Design Project (4) (discontinued)	**1/20**
	ENGG4900 Professional Practice and the Business Environment	1,2	2		Course must be completed	

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Checked by (Faculty: Name and Date): _____

Mechatronic Engineering No Major Option

Complete 16 units comprising -

i. 8 units for all Mechatronic Engineering Extension Courses; and
ii. 4 to 8 units from Mechatronic Engineering Advanced Electives; and
iii. 0 to 4 units from any Mechatronic Engineering Breadth Electives; and
iv. 0 to 4 units from Program Electives; and
v. 0 to 4 units from General Electives.

✓/X compl.	8 units for all: Mechatronic Engineering Extension Courses	Sem offering	#	First offered	Approved substitution	Last offered
	ELEC2400 *Electronic Circuits and Amplifiers (NEW)*	1	2	**1/22**	**ELEC3400** Electronic Circuits (discontinued)	**1/21**
	ELEC3004 Signals, Systems & Control	1	2		Course must be completed	
	MECH3200 Advanced Dynamics & Vibrations	2	2		Course must be completed	
	METR6203 *Control Engineering 2*	1	2	**1/21**	**METR7203** Control Engineering 2 (discontinued)	**1/20**
	4 to 8 units from: Mechatronic Engineering Advanced Electives					
	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	
	COMP3702 Artificial Intelligence	2	2		No substitution	
	COMP3710 Pattern Recognition and Analysis	2	2		No substitution	
	COMP4702 Machine Learning	1	2		No substitution	
	CSSE3010 Embedded Systems Design & Interfacing	1	2		No substitution	
	CSSE4010 Digital System Design	1	2		No substitution	
	CSSE4011 Advanced Embedded Systems	1	2		No substitution	
	ELEC3100 Fundamentals of Electromagnetic Fields & Waves	2	2		No substitution	
	ELEC3310 Electrical Energy Conversion & Utilisation	2	2	**2/21**	**ELEC3300** Electrical Energy Conversion & Utilisation (discontinued)	**2/20**
	ELEC4310 Power Systems Analysis	1	2	**1/21**	**ELEC4300** Power Systems Analysis (discontinued)	**1/20**

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	ELEC4620 Digital Signal Processing	2	2		No substitution	
	ELEC4630 Image Processing and Computer Vision	1	2		No substitution	
	ENGG4103 Engineering Asset Management	1	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	
	TIMS3309 Technology and Innovation Management	2	2		No substitution	
	0 to 4 units from: Mechatronic Engineering Breadth Electives					
	Mechatronic Engineering Breadth Electives can be chosen from course lists for the following majors: Computer 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 Computer Engineering (16 units)	Sem offering	#	First offered	Approved substitution	Last offered
	4 units for: Computer Engineering Courses for Mechatronic Engineers only					
	COMP3506 Algorithms & Data Structures	2	2		Course must be completed	
	CSSE2002 Programming in the Large	1,2	2		Course must be completed	
	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 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	**1/22**	**COMS4200** Computer Networks II (discontinued)	**1/21**
	CSSE3012 The Software Process	1	2	**1/21**	**CSSE3002** The Software Process (discontinued)	**1/20**
	CSSE3100 Reasoning About Programs	1	2		No substitution	

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	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	
	DECO1400 Introduction to Web Design	1	2		No substitution	
	DECO2500 Human-Computer Interaction	1	2		No substitution	
	ELEC3310 Electrical Energy Conversion & Utilisation	2	2	**2/21**	**ELEC3300** Electrical Energy Conversion & Utilisation (discontinued)	**2/20**
	ELEC4310 Power Systems Analysis	1	2	**1/21**	**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	
	METR3100 Control System Implementation	1	2		No substitution	
	METR4202 Robotics & Automation	2	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 Mechatronic Engineers only					
	ELEC3004 Signals, Systems & Control	1	2		Course must be completed	
	MECH3200 Advanced Dynamics & Vibrations	2	2		Course must be completed	
	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	1	2		**MINE3122** Mining Systems (renamed)	
	MINE3123 Mine Planning & Sustainability	2	2		**MINE3123** Mine Planning	
	MINE3129 Applied Mining Geomechanics (NEW)	1	2	**1/23**	**MINE4120** Mine Geotechnical Engineering (discontinued)	**1/22**
	MINE4124 Mine Design, Feasibility and Sustainability	1	2		**MINE4124** Hard Rock Mine Design & Feasibility	
	MINE4129 Mine Process Optimisation (NEW)	2	2	**2/23**	**MINE3125** Explosives and Blasting Engineering (discontinued)	**2/22**

Mechatronic Engineering with Engineering Minor

Complete 16 units comprising:

8 units for one of the following minors:

- Data Science
- Computing
- Design

and

8 units from Mechatronic 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	**2/21**	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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