CHECKLIST Bachelor of Engineering (Honours) - Civil 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 Civil Engineering; and
- III. One of the following:
 - a. 16 units for one Major from Civil Engineering Major Options*, or
 - b. 16 units for Civil Engineering Minor Options**, or
 - c. 16 units for Civil 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: Environmental Engineering; General Civil Engineering; Geotechnical Engineering; Mining Engineering; Structural Engineering; Transport Engineering; Water and Marine 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
	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 (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	

√/X compl.	2021 Civil Engineering specialisation list (36 units)	Sem offering	#	First offered	Approved substitution	Last offered
	28 units for all: Compulsory Courses					
	ENGG1700 Statics & Materials (NEW)	1,2	2	1/21	ENGG1400 Engineering Mechanics: Statics and Dynamics (discontinued)	2/20
	CIVL2131 Environmental Fluid Mechanics	1	2		Course must be completed	
	CIVL2135 Environmental Engineering: An Introduction for Civil Engineers	1	2		CIVL2135 Environmental Issues and Sustainability in Engineering	
	CIVL2210 Fundamentals of Soil Mechanics	2	2		Course must be completed	
	CIVL2330 Structural Mechanics	1	2		Course must be completed	
	CIVL2420 Fundamentals of Transport Engineering (NEW)	2	2	2/22	CIVL2410 Sustainable Transport Engineering - Traffic Analysis (discontinued)	1/21
	CIVL2530 Statistics and Data Analysis	1	2		CIVL2530 Probability and Statistics in Engineering	
	CIVL3155 Hydrology and Free Surface Flows (NEW)	2	2	2/22	CIVL3141 Hydrology and Hydrological Risk (discontinued) and CIVL3140 Hydraulics of Engineered and Natural Waterways (discontinued) [Both courses are required to have been completed to exempt students from CIVL3155; therefore 2 units will count as a Compulsory Course and 2 units will count towards Civil Engineering Advanced Electives]	2/21
	CIVL3210 Geotechnical Engineering	1	2		Course must be completed	
	CIVL3360 Reinforced Concrete Design	2	2	2/22	CIVL2360 Design of Concrete Structures (discontinued)	2/21
	CIVL3520 Project Management and Professional Practice (NEW)	2	2	2/23	CIVL3510 Project Management with Building Information Modelling (discontinued)	2/22
					or ENGG4900 Professional Practice and the Business Environment	
	CIVL3530 Data Analytics in Civil Engineering (NEW)	1	2	1/22	Course must be completed	
	CIVL4170 Risk Analysis and Assessment	1	2		Course must be completed	
	CIVL4514 Design in the Built Environment (changes to semester 2 in 2024) or CIVL4516 Design for the Natural Environment	1 2	2		CIVL4514 Integrated Design CIVL4516 Integrated Design for Environmental Environment	
	2-44 units from: Civil Engineering Research Courses					
	CIVL4600 Research Project	1,2	2	1/23	CIVL4560 Project (2)	2/22
	CIVL4604 Research Thesis (NEW) or	1,2	4	1/23	Students who have completed CIVL4580 or CIVL4583 or CIVL4582 or CIVL4584 will receive credit for CIVL4604 or CIVL4606	

CIVL4606 Research Thesis (NEW)	2,1		2/23		
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2-4 units from: Civil Engineering Advanced Electives					
CIVL3220 Rock Mechanics (NEW)	2	2	2/23	MINE3121 Mining Geomechanics (discontinued)	1/
CIVL3340 Structural Analysis	1	2		No substitution	
CIVL3390 Integrated Structural Design	2	2	2/23	CIVL3350 Integrated Structural Design	2/
CIVL3380 Structural and Steel Design (NEW)	1	2	1/23	CIVL2340 Design of Steel Structures (discontinued)	2,
CIVL3420 Sustainable Transport Engineering – Planning and Design (moves to Semester 1 in 2023)	2	2		No substitution	
CIVL4145 Groundwater Modelling and Management (NEW)	2	2	2/22	CIVL4140 Contaminant Transport Modelling (discontinued)	1/
CIVL4230 Advanced Soil Mechanics	2	2		No substitution	
CIVL4270 Geotechnical Investigation & Testing	1	2	1/22	CIVL4270 Geotechnical Investigation	
CIVL4280 Applied Rock Mechanics	2	2		CIVL4280 Advanced Rock Mechanics	
CIVL4333 Advanced Concrete Design	1	2		No substitution	
CIVL4334 Design of Timber Structures	2	2		No substitution	
CIVL4340 Wind Engineering	1	2		No substitution	
CIVL4450 Traffic Flow Theory and Emerging Technologies	2	2		No substitution	
CIVL4460 Highway Geometric Design	2	2		No substitution	
CIVL4522 Analytical Methods for the Design of Construction Operations	2	2		No substitution	
CIVL4525 Sustainable Infrastructure Design (NEW)	2	2	2/23	CIVL4180 Sustainable Built Environment (discontinued)	
CIVL6111 Ocean, Coastal & Estuarine Engineering (NEW)	2	2	2/23	CIVL4110 Coastal & Estuarine Engineering (discontinued) * CIVL4110 may only be used as approved substitution for CIVL6111 OR CIVL6112 – not both	2,
CIVL6112 Hydro- and Marine Power Renewable Energy Systems (NEW)	2	2	2/23	CIVL4110 Coastal & Estuarine Engineering (discontinued) * CIVL4110 may only be used as approved substitution for CIVL6111 OR CIVL6112 – not both	2,
CIVL6121 Environmental Hydraulics and Flood Management (NEW)	1	2	1/23	CIVL4120 Advanced Hydraulic Engineering and Structures (discontinued)	2,
CIVL6210 Dam Engineering (NEW)	2	2	2/23	No substitution	

CIVL6215 Ground Improvement (NEW)	1	2	1/23	No substitution	
CIVL6220 Tailings Design (NEW)	1	2	1/23	MINE4000 Mine Waste Management & Landform Design (discontinued)	2/21
CIVL6250 Underground Structures (NEW)	2	2	2/24	No substitution	
CIVL6360 Advanced Structural Analysis (NEW)	2	2	2/23	CIVL4332 Advanced Structural Analysis (discontinued)	2/22
CIVL6410 Transport Network Modelling (NEW)	1	2	1/23	No substitution	
CIVL6415 Traffic Analysis and Simulation (NEW)	2	2	2/23	No substitution	
ENVE3150 Environmental System Dynamics and Modelling	2	2	2/21	CIVL3150 Modelling of Environmental Systems (discontinued)	2/20
ENVE3160 Environmental Phenomena (NEW)	1	2	1/22	No substitution	
ENVE4610 Engineering the Circular Economy (NEW)	1	2	1/23	No substitution	
FIRE3700 Introduction to Fire Safety Engineering	1	2		No substitution	
FIRE4610 Fire Engineering Design: Solutions for Implicit Safety	1	2		No substitution	

2 units from Program Electives			

Civil Engineering No Major Option

Students must complete 16 units comprising -

- i. 8 to 16 units from Civil Engineering Advanced Electives; and
- ii. 0 to 8 units from any Civil Engineering Breadth Electives; and
- iii. 0 to 4 units from Program Electives; and
- iv. 0 to 4 units from General Electives.

√/X	8 to 16 units from:	Sem offering	#	First	Approved substitution	Last offered
compl.	Civil Engineering Advanced Electives	onening		offered		
	CIVL3220 Rock Mechanics (NEW)	2	2	2/23	MINE3121 Mining Geomechanics (discontinued)	1/22
	CIVL3340 Structural Analysis	1	2		No substitution	
	CIVL3390 Integrated Structural Design	2	2	2/23	CIVL3350 Integrated Structural Design	2/22
	CIVL3380 Structural and Steel Design (NEW)	1	2	1/23	CIVL2340 Design of Steel Structures (discontinued)	2/22
	CIVL3420 Sustainable Transport Engineering – Planning and Design (moves to Semester 1 in 2023)	1	2		No substitution	
	CIVL6111 Ocean, Coastal & Estuarine Engineering (NEW)	2	2	2/23	CIVL4110 Coastal & Estuarine Engineering (discontinued) * CIVL4110 may only be used as approved substitution for CIVL6111 OR CIVL6112 - not both	2/21
	CIVL6112 Hydro- and Marine Power Renewable Energy Systems (NEW)	2	2	2/23	CIVL4110 Coastal & Estuarine Engineering (discontinued) * CIVL4110 may only be used as approved substitution for CIVL6111 OR CIVL6112 - not both	
	CIVL6121 Environmental Hydraulics and Flood Management (NEW)	1	2	1/23	CIVL4120 Advanced Hydraulic Engineering and Structures (discontinued)	2/22
	CIVL4145 Groundwater Modelling and Management (NEW)	2	2	2/22	CIVL4140 Contaminant Transport Modelling (discontinued)	1/21
	CIVL4230 Advanced Soil Mechanics	2	2		No substitution	
	CIVL4270 Geotechnical Investigation & Testing	1	2	1/22	CIVL4270 Geotechnical Investigation	
	CIVL4280 Applied Rock Mechanics	2	2		CIVL4280 Advanced Rock Mechanics	
	CIVL4333 Advanced Concrete Design	1	2		No substitution	
	CIVL4334 Design of Timber Structures	2	2		No substitution	
	CIVL4340 Wind Engineering	1	2		No substitution	
	CIVL4450 Traffic Flow Theory and Emerging Technologies	2	2		No substitution	
	CIVL4460 Highway Geometric Design	2	2		No substitution	
	CIVL4522 Analytical Methods for the Design of Construction Operations	2	2		No substitution	

CIVL4525 Sustainable Infrastructure Design (NEW)	2	2	2/23	CIVL4180 Sustainable Built Environment (discontinued)	
CIVL6210 Dam Engineering (NEW)	2	2	2/23	No substitution	
CIVL6215 Ground Improvement (NEW)	1	2	1/23	No substitution	
CIVL6220 Tailings Design (NEW)	1	2	1/23	MINE4000 Mine Waste Management & Landform Design (discontinued)	2/21
CIVL6250 Underground Structures (NEW)	2	2	2/24	No substitution	
CIVL6360 Advanced Structural Analysis (NEW)	2	2	2/23	CIVL4332 Advanced Structural Analysis (discontinued)	2/22
CIVL6410 Transport Network Modelling (NEW)	1	2	1/23	No substitution	
CIVL6415 Traffic Analysis and Simulation (NEW)	2	2	2/23	No substitution	
ENVE3150 Environmental System Dynamics and Modelling	2	2	2/21	CIVL3150 Modelling of Environmental Systems (discontinued)	2/20
ENVE3160 Environmental Phenomena (NEW)	1	2	1/23	No substitution	
ENVE4610 Engineering the Circular Economy (NEW)	1	2	1/23	No substitution	
FIRE3700 Introduction to Fire Safety Engineering	1	2		No substitution	
FIRE4610 Fire Engineering Design: Solutions for Implicit Safety	1	2		No substitution	
0 to 8 units from:					
Civil Engineering Breadth Electives					
MATH2001 Calculus and Linear Algebra II	1,2,5	2		MATH2000 Calculus and Linear Algebra II (discontinued)	

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

- o Environmental Engineering
- o General Civil Engineering
- o Geotechnical Engineering
- o Mining Engineering
- o Structural Engineering
- o Transport Engineering
- o Water and Marine Engineering

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

✓/X compl.	Major in Environmental Engineering (16 units)	Sem offering	#	First offered	Approved substitution	Last offered
	8 units for all:					
	Environmental Engineering Compulsory Courses ENVE2501 Environmental Systems	1	2	1/21	CHEE2501 Environmental Systems Engineering I: Processes (discontinued)	1/20
	ENVE3150 Environmental System Dynamics and Modelling	2	2	2/21	CIVL3150 Modelling of Environmental Systems (discontinued)	2/20
			2			
	ENVE3160 Environmental Phenomena (NEW)	1	2	1/23	Course must be completed	
	ENVE4610 Engineering the Circular Economy (NEW)	1	2	1/23	Course must be completed	
	4 to 8 units from: Environmental Engineering Electives					
	WATR6103 Advanced Wastewater and Biosolids Treatment	2	2	2/23	CHEE4012 Industrial Wastewater & Solid Waste Management (discontinued)	2/22
	CIVL3420 Sustainable Transport Engineering – Planning and Design (moves to semester 1 in 2023)	1	2		No substitution	
	CIVL6111 Ocean, Coastal & Estuarine Engineering (NEW)	2	2	2/23	CIVL4110 Coastal & Estuarine Engineering (discontinued) * approved substitution for CIVL6111 OR CIVL6112 – not both	2/21
	CIVL6112 Hydro- and Marine Power Renewable Energy Systems (NEW)	2	2	2/23	CIVL4110 Coastal & Estuarine Engineering (discontinued) * approved substitution for CIVL6111 OR CIVL6112 – not both	2/21
	CIVL6121 Environmental Hydraulics and Flood Management (NEW)	1	2	1/23	CIVL4120 Advanced Hydraulic Engineering and Structures (discontinued)	2/22
	CIVL4145 Groundwater Modelling and Management (NEW)	2	2	2/22	CIVL4140 Contaminant Transport Modelling (discontinued)	1/21
	CIVL4525 Sustainable Infrastructure Design (NEW)	2	2	2/23	CIVL4180 Sustainable Built Environment (discontinued)	
	ENGY4000 Energy Systems	1	2		No substitution	
	ENVM3103 Regulatory Frameworks for Environmental Management & Planning	1	2		No substitution	
	WATR6105 Integrated Urban Water Management	1	2	1/21	No substitution	
	WATR6106 Emerging Issues in the Urban Water Cycle and Public Water	1	2	1/21	No substitution	
	WATR6108 Advanced Unit Operations in Water Management	1	2	1/21	No substitution	
	WATR6109 Drinking Water Supply: Source, Treatment and Distribution	1	2	1/21	No substitution	

4 units from		1			
a. Environmental Engineering Research Electives; and/or					
b. Environmental Engineering Breadth Electives; and/or					
c. Chemical Engineering Advanced Electives; and/or					
d. Civil Engineering Advanced Electives.					
Environmental Engineering Research Electives					
CHEE4006 Research Project	1	2		No substitution	
 CHEE4007 Research Project	2	2		No substitution	
CHEE4026 Research Thesis	1 2	4		No substitution	
or CHEE4027 Research Thesis	2				
Environmental Engineering Breadth Electives					
ENVM2100 Foundations of Sustainable Development	2	2		No substitution	
ENVM3201 Catchment Processes & Management	1	2		No substitution	
	_	_			
ERTH1501 Earth Processes and Geological Materials for Engineers	1	2		No substitution	
ERTH2004 Structural Geology	2	2		No substitution	
ERTH3250 Hydrogeology	2	2		No substitution	
 GEOM1000 Fundamentals of Geographic Information and Technologies	2	2		No substitution	
 CEONI2001 Communication Surfaces	4	-			
GEOM2001 Geographical Information Systems	1	2		No substitution	
 GEOS1100 Environment & Society	1,2	2		No substitution	
 GEOS2100 Environmental Systems	1	2		No substitution	
GLOSZIOU LINNI UNINERITAI SYSTEMIS					
GEOS3102 Global Change: Problems and Prospects	2	2		No substitution	
	1		1		

✓/X compl.	Major in General Civil Engineering (16 units) (discontinued – follow <u>no major option</u>)	Sem offering	#	First offered	Approved substitution	Last offered
	8 units for: General Civil Engineering Compulsory Courses					
	CIVL3420 Sustainable Transport Engineering (moves to semester 1 in 2023)	2	2		Course must be completed	
	CIVL3340 Structural Analysis	1	2		Course must be completed	
	CIVL3380 Structural and Steel Design (NEW)	1	2	1/23	CIVL2340 Design of Steel Structures (discontinued)	2/22
	CIVL6121 Environmental Hydraulics and Flood Management (NEW)	1	2	1/23	CIVL4120 Advanced Hydraulic Engineering and Structures (discontinued)	2/22
	4 to 8 units: from General Civil Engineering Electives					
	ERTH1501 Earth Processes and Geological Materials for Engineers	1	2		No substitution	
	CIVL3390 Integrated Structural Design	2	2	2/22	CIVL3390 Integrated Structural Design	2/23
	CIVL6111 Ocean, Coastal & Estuarine Engineering (NEW)	2	2	2/23	CIVL4110 Coastal & Estuarine Engineering (discontinued)	2/21
	CIVL4145 Groundwater Modelling and Management (NEW)	2	2	2/22	CIVL4140 Contaminant Transport Modelling (discontinued)	1/21
	CIVL4270 Geotechnical Investigations	1	2		No substitution	
	CIVL4333 Advanced Concrete Design	1	2		No substitution	
	CIVL4334 Design of Timber Structures	2	2		No substitution	
	CIVL4340 Wind Engineering	1	2		No substitution	
	CIVL4450 Traffic Flow Theory and Emerging Technologies	2	2		No substitution	
	CIVL4460 Highway Geometric Design	2	2		No substitution	
	CIVL4525 Sustainable Infrastructure Design (NEW)	2	2	2/23	CIVL4180 Sustainable Built Environment (discontinued)	
	0 to 4 units from: Civil Engineering Advanced Electives					

✓/X compl.	Major in Geotechnical Engineering (16 units)	Sem offering	#	First offered	Approved substitution	Last offered
	8 units for all: Geotechnical Engineering Compulsory Courses					
	CIVL3220 Rock Mechanics (NEW)	2	2	2/23	MINE3121 Mining Geomechanics (discontinued)	1/22
	CIVL4230 Advanced Soil Mechanics	2	2		Course must be completed	
	CIVL4270 Geotechnical Investigations	1	2		Course must be completed	
	CIVL6215 Ground Improvement (NEW)	1	2	1/23	No substitution	1/22
	2 to 8 units from: Geotechnical Engineering Electives					
	CIVL4280 Applied Rock Mechanics	2	2		Course must be completed	
	CIVL6250 Underground Structures (NEW)	2	2	2/24	No substitution	2/22
	CIVL6210 Dam Engineering (NEW)	2	2	2/23	No substitution	2/22
	CIVL6220 Tailings Design (NEW)	1	2	1/23	MINE4000 Mine Waste Management & Landform Design (Discontinued)	1/22
	0 to 4 units from: Geotechnical Engineering Breadth Electives					
	CIVL4340 Wind Engineering	1	2		No substitution	
	CIVL4460 Highway Geometric Design	2	2		No substitution	
	CIVL4525 Sustainable Infrastructure Design (NEW)	2	2	2/23	CIVL4180 Sustainable Built Environment (discontinued)	
	METL3129 Applied Mining Geomechanics (NEW)	1	2	1/22	MINE4120 Mine Geotechnical Engineering (discontinued) or MINE3129 Applied Mining Geomechanics (discontinued)	1/22 1/21
	ERTH3250 Hydrogeology	2	2		No substitution	
	FIRE3700 Introduction to Fire Safety Engineering	1	2		No substitution	
	0 to 4 units from: Civil Engineering Advanced Electives					

✓/X compl.	Major in Mining Engineering (16 units)	Sem offering	#	First offered	Approved substitution	Last offered
	12 units for:					
	Mining Engineering Compulsory Courses					
	MINE3110 Integrated Orebody Knowledge (NEW)	1	2	1/23	MINE3120 Resource Estimation (discontinued)	1/22
	MINE3122 Mining Systems & Automation	1	2	2/23	MINE3122 Mining Systems	1/22
	MINE3123 Mine Planning & Sustainability	2	2	1/23	MINE3123 Mine Planning	2/22
	METL3129 Applied Mining Geomechanics (NEW)	1	2	1/22	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)	1	2	1/23	MINE3125 Explosives and Blasting Engineering (discontinued)	1/22
	4 units for:					
	Mining Engineering Courses for Civil Engineers only					
	4 units from:					
	Civil Engineering Advanced Electives					

Major in Structural Engineering (16 units)	Sem offering	#	First offered	Approved substitution	Last offered
10 units for all: Structural Engineering Compulsory Courses					
CIVL3340 Structural Analysis	1	2		Course must be completed	
CIVL3390 Integrated Structural Design	2	2	2/23	CIVL3350 Integrated Structural Design	2/22
CIVL3380 Structural and Steel Design (NEW)	1	2	1/23	CIVL2340 Design of Steel Structures (discontinued)	2/22
CIVL4333 Advanced Concrete Design	1	2		Course must be completed	
CIVL4334 Design of Timber Structures	2	2		Course must be completed	
4 to 6 units from: Structural Engineering Electives					
CIVL4230 Advanced Soil Mechanics	2	2	2/21	No substitution	
CIVL4340 Wind Engineering	1	2		No substitution	
CIVL4522 Analytical methods for the Design of Construction Operations	2	2		No substitution	
CIVL4525 Sustainable Infrastructure Design (NEW)	2	2	2/23	CIVL4180 Sustainable Built Environment (discontinued)	
	10 units for all: Structural Engineering Compulsory Courses CIVL3340 Structural Analysis CIVL3390 Integrated Structural Design CIVL3380 Structural and Steel Design (NEW) CIVL4333 Advanced Concrete Design CIVL4334 Design of Timber Structures 4 to 6 units from: Structural Engineering Electives CIVL4230 Advanced Soil Mechanics CIVL4340 Wind Engineering CIVL4522 Analytical methods for the Design of Construction Operations	IO units for all: Structural Engineering Compulsory CoursesofferingCIVL3340 Structural Analysis1CIVL3390 Integrated Structural Design2CIVL3380 Structural and Steel Design (NEW)1CIVL4333 Advanced Concrete Design1CIVL4334 Design of Timber Structures24 to 6 units from: Structural Engineering Electives2CIVL4230 Advanced Soil Mechanics2CIVL4340 Wind Engineering1CIVL4320 Advanced Soil Mechanics2CIVL4320 Advanced Soil Mechanics2CIVL4320 Advanced Soil Mechanics2CIVL4522 Analytical methods for the Design of Construction Operations2	Image: 10 units for all: Structural Engineering Compulsory CoursesofferingCIVL3340 Structural Analysis12CIVL3390 Integrated Structural Design22CIVL3380 Structural and Steel Design (NEW)12CIVL4333 Advanced Concrete Design12CIVL4334 Design of Timber Structures224 to 6 units from: Structural Engineering Electives22CIVL4340 Wind Engineering12CIVL4340 Wind Engineering12CIVL4522 Analytical methods for the Design of Construction Operations22	Offering10 units for all: Structural Engineering Compulsory Courses	Outs for all: Structural Engineering Compulsory CoursesImage: Course must be completedCIVL3340 Structural Analysis12Course must be completedCIVL3390 Integrated Structural Design222/23CIVL3350 Integrated Structural DesignCIVL3380 Structural and Steel Design (NEW)121/23CIVL3340 Design of Steel Structures (discontinued)CIVL3380 Structural and Steel Design (NEW)121/23CIVL3340 Design of Steel Structures (discontinued)CIVL3338 Advanced Concrete Design122Course must be completedCIVL4334 Design of Timber Structures222Course must be completedCIVL4334 Design of Timber Structures222Course must be completedCIVL4330 Advanced Soil Mechanics2222/21No substitutionCIVL4340 Wind Engineering1222/21No substitutionCIVL4340 Wind Engineering122No substitutionCIVL4320 Analytical methods for the Design of Construction Operations222No substitution

CIVL6360 Advanced Structural Analysis (NEW)	2	2	2/23	CIVL4332 Advanced Structural Analysis (discontinued)	2/22
FIRE4610 Fire Engineering Design: Solutions for Implicit Safety	1	2		No substitution	
0 to 2 units from: Civil Engineering Advanced Electives					

√/X	Major in Transport Engineering (16 units)	Sem	#	First offered	Approved substitution	Last offered
compl.		offering				
	10 units for all:					
	Transport Engineering Compulsory Courses					
	CIVL3420 Sustainable Transport Engineering (moves to semester 1 in 2023)	2	2		Course must be completed	
	CIVL4460 Highway Geometric Design	2	2		Course must be completed	
	CIVL6410 Transport Network Modelling (NEW)	1	2	1/23	Course must be completed	
	CIVL4450 Traffic Flow Theory and Emerging Technologies	2	2		Course must be completed	
	CIVL6415 Traffic Analysis and Simulation (NEW)	2	2	2/23	Course must be completed	2/22

4 to 6 units from: Civil Engineering Advanced Electives			

✓/X compl.	Major in Water and Marine Engineering (16 units)	Sem offering	#	First offered	Approved substitution	Last offered
	8 units for all: Water and Marine Engineering Compulsory Courses					
	CIVL6121 Environmental Hydraulics and Flood Management (NEW)	1	2	1/23	CIVL4120 Advanced Hydraulic Engineering and Structures (discontinued)	2/22
	CIVL6111 Ocean, Coastal & Estuarine Engineering (NEW)	2	2	2/23	CIVL4110 Coastal & Estuarine Engineering (discontinued)	2/21
	CIVL6112 Hydro- and Marine Power Renewable Energy Systems (NEW)	2	2	2/23	Course must be completed	
	CIVL4340 Wind Engineering	1	2		Course must be completed	
	4 to 8 units from: Water and Marine Engineering Electives					
	CIVL3420 Sustainable Transport Engineering - Planning and Design	1	2		No substitution	
	CIVL4145 Groundwater Modelling and Management (NEW)	2	2	2/22	CIVL4140 Contaminant Transport Modelling (discontinued)	1/21
	CIVL4525 Sustainable Infrastructure Design	2	2	2/23	CIVL4180 Sustainable Built Environment (discontinued)	1/20
	CIVL6120 Dam Engineering	2	2	2/23	CIVL7225 Dam and Embankment Engineering	1/22
	ENVE3150 Environmental System Dynamics and Modelling	2	2	2/21	CIVL3150 Modelling of Environmental Systems	2/20
	ENVE3160 Environmental Phenomena	1	2	1/23	No substitution	
	ENVM3103 Regulatory Frameworks for Environmental Management & Planning	1	2		No substitution	
	ENVM3115 Climate Change and Environmental Management	1	2		No substitution	
	ENVM3201 Catchment Processes & Management	1	2		No substitution	
	ERTH3250 Hydrogeology	2	2		No substitution	

WATR6105 Integrated Urban Water Management	1	2	1/21	WATR7105 Urban Water Management	1/20
0 to 4 units from: Civil Engineering Advanced Electives					

Civil Engineering with Engineering Minor

Complete 16 units comprising:

8 units for one of the following minors:

Data Science

Computing

Design

and

8 units from Civil Engineering Advanced Electives

√/X	Minor in Computing (8 units)	Sem	#	First offered	Approved substitution	Last offered
compl.		offering				
	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	

✓/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	

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
	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	