2023-2024 JCU Study Area Guide

AQUACULTURE
Townsville

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
AQ2001:03 Introduction to Aquaculture *PREREQ: At least 12 credit points of Level 1 science*	🧪	**AQ2002/AQ5009** PG:03 Aquaculture of Tropical Species *PREREQ: At least 12 credit points of Level 1 science*	👢
AQ3002/AQ5002PG:03 Aquaculture: Feeds and Nutrition *PREREQ: At least 12 credit points of Level 2 science subjects and 3 credit points of level 2 aquaculture subjects*	🧪	**AQ3007/AQ5007** PG:03 Aquatic Animal Ecophysiology *PREREQ: At least 12 Credit Points of level 2 science subjects including at least 3 Credit Points of Aquaculture subjects*	🧪
AQ3008/AQ5008 PG:03 Aquaculture: Systems Design *PREREQ: At least 12 credit points of Level 2 science subjects and 3 credit points of level 2 aquaculture subjects*	🧪	**BS1001**:03 Introduction to Biological Processes	💻🧪
BS1007:03 Introduction to Biodiversity	👢🧪	**MB1110**:03 Introductory Marine Science *PREREQ: CH1020-Preparatory chemistry and MA1020-Preparatory mathematics, allow concurrent enrolment with CH1020 & MA1020*	🧪
CH2042:03 Marine Chemistry and Chemical Ecology *PREREQ: CH1001-First year chemistry*	👢🧪	**MB2080/MB5380** PG:03 Invertebrate Biology *PREREQ: BS1007-First year plant and animal biology*	👢🧪
MB3150/MB5003 PG:03 Fisheries Science *PREREQ: SC2202/SC2209-statistics and BS2460-ecology*	👢🧪	**PH2006**:03 Marine Physics	👢🧪
MI2031/MI5003 PG:03 Diagnosis of Bacterial Diseases in Aquaculture	👢🧪	**MI3031/MI5031** PG:03 Diagnosis of Viral Disease in Aquaculture *PREREQ: MI2011-Microbial diversity or BS1001-First year cell biology/genetics*	👢🧪

STUDY PERIOD 3 (Jan-Feb)		STUDY PERIOD 7 (Jun-Jul)		STUDY PERIOD 10 (Nov-Jan)	
AQ3015:03 Sustainable Aquaculture *PREREQ: 12 credit points of level 2 subject*	👢🧪	**AQ3003/AQ5003** PG Aquaculture: Propagation *PREREQ: AQ2001 and at least 12 credit points of Level 2 science*	👢🧪	**AQ3004/AQ5004** PG Aquaculture: Stock Improvement *PREREQ: At least 12 credit points of Level 2 science subjects and 3 credit points of level 2 aquaculture subjects*	👢🧪

👢 Field component / Placement

🧪 Practical / Laboratory component

💻 Computer Practical or Tutorial

EXTERNAL Only = External offering is the ONLY availability
EXTERNAL Option = Internal and external offerings are both available
PG = Denotes Postgraduate level subjects (i.e. any subject where the 4 digit numerical code begins with '5')

BIOLOGY (Ecology, Zoology and Evolution)
Townsville

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
BS1007:03 Introduction to Biodiversity		**BS1001**:03 Introduction to Biological Processes	
BS2470:03 Evolution *PREREQ: BS1001-First year cell biology and genetics*		**BS2460/BS5460** ᴾᴳ:03 Fundamentals of Ecology *PREREQ: 6 credit points of Level 1 or 2 BZ, BS or EV subjects*	
BZ2725/BZ5925 ᴾᴳ:03 Australian Terrestrial Diversity *PREREQ: BS1007-First year plant and animal biology*		**SC2202**:03 Quantitative Methods in Science* **PREREQ: Intro statistics and RStudio module available immediately upon enrolment at JCU.*	
SC2202/SC2209:03 Quantitative Methods in Science* **PREREQ: Intro statistics and RStudio module available immediately upon enrolment at JCU.*		**MB2080**:03 Invertebrate Biology *PREREQ: BS1007-First year plant and animal biology*	
BZ3215/BZ5215 ᴾᴳ:03 Conservation Biology *PREREQ: BS1001-First year cell biology/genetics, BS1007-First year plant and animal biology, and BS2460-ecology.* **EXTERNAL and/or Limited Subject**		**BZ3061/BZ5061** ᴾᴳ:03 Behavioural Ecology *PREREQ: SC2202/SC2209-statistics and 6 credit points of Level 2 Science*	
BZ3235/BZ5235 ᴾᴳ:03 Biological Invasions *PREREQ: BS1007-First year plant and animal biology*		**BZ3220/BZ5220** ᴾᴳ:03 Population and Community Ecology *PREREQ: SC2202/SC2209-statistics and BS2460-Ecology.*	
BZ3740/BZ5740 ᴾᴳ:03 Wildlife Ecology and Management *PREREQ: BS2460-ecology or 3 credit points of level 2 biology*		**BZ3225/BZ5225** ᴾᴳ:03 Technological Applications in Ecology *PREREQ: SC2202/SC2209-statistics and BS2460-ecology.*	
BS5260 ᴾᴳ:03 Modelling Ecological Dynamics **Only Available to Postgraduate and Bachelor of Advanced Science Students*		**BZ3450/BZ5450** ᴾᴳ:03 Ecological and Conservation Genetics *PREREQ: BS2470 or BC2023 or BC2013 (genetics or biochemistry)*	
BZ5650 ᴾᴳ:03 Australian Land Plants: Recognition, Evolution and Diversity **EXTERNAL Only** *Note-Field trip making your own plant collection*		**BZ5650** ᴾᴳ:03 Australian Land Plants: Recognition, Evolution and Diversity **EXTERNAL Only** *Note-Field trip making your own plant collection*	

STUDY PERIOD 3 (Jan-Feb)		STUDY PERIOD 7 (Jun-Jul)		STUDY PERIOD 10/11 (Nov-Jan)	
BZ3745/BZ5745 ᴾᴳ:03 Tropical Entomology *PREREQ: BS1007- First year plant and animal biology and SC2202/SC2209-statistics.*		**BZ2490/BZ5990** ᴾᴳ:03 Toolkit for the Field Biologist *PREREQ: SC2202/SC2209-statistics.*		**BZ3230**:03 Ecological Research Methods - SP10 *PREREQ: SC2202/SC2209-statistics and BS2460-ecology.*	
		BZ3620/BZ5620 ᴾᴳ:03 Tropical Flora of Australia *PREREQ: BS1007-First year plant and animal biology*		**BZ5650** ᴾᴳ:03 Australian Land Plants: Recognition, Evolution and Diversity - SP11 **EXTERNAL Only** *Note-Field trip making your own plant collection*	
		BZ3755/BZ5755 ᴾᴳ:03 Climate Change and Biodiversity *PREREQ: 18 credit points of level 1 and 2 biology or environmental science*			

BIOLOGY (Ecology, Zoology and Evolution)
Cairns

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
BS1007:03 Introduction to Biodiversity		**BS1001**:03 Introduction to Biological Processes	
BS2470:03 Evolution *PREREQ: BS1001-First year cell biology and genetics*		**BS2460/BS5460** PG:03 Fundamentals of Ecology *PREREQ: 6 credit points of biology and/or environmental science subjects*	
BZ2725/BZ5925 PG:03 Australian Terrestrial Diversity *PREREQ: BS1007-First year plant and animal biology*		**SC2202**:03 Quantitative Methods in Science* **PREREQ: Intro statistics and RStudio module available immediately upon enrolment at JCU.*	
SC2202/SC2209:03 Quantitative Methods in Science* **PREREQ: Intro statistics and RStudio module available immediately upon enrolment at JCU.*		**BZ3061/BZ5061** PG:03 Behavioural Ecology *PREREQ: SC2202/SC2209-statistics and 6 credit points of Level 2 Science*	
BZ3215/BZ5215 PG:03 Conservation Biology *PREREQ: BS1001-First year cell biology/genetics, BS1007-First year plant and animal biology, and BS2460-ecology.* **EXTERNAL and/or Limited Subject**		**BZ3220/BZ5220** PG:03 Population and Community Ecology *PREREQ: SC2202/SC2209-statistics and BS2460-ecology*	
BZ3235/BZ5235 PG:03 Biological Invasions *PREREQ: BS1007-First year plant and animal biology*		**BZ3225/BZ5225** PG:03 Technological Applications in Ecology *PREREQ: SC2202/SC2209-statistics and BS2460-ecology*	
BZ3740/BZ5740 PG:03 Wildlife Ecology and Management *PREREQ: BS2460-ecology or 3 credit points of level 2 biology*		**BZ5650** PG:03 Australian Land Plants: Recognition, Evolution and Diversity **EXTERNAL Only** *Note-Field trip making your own plant collection*	
SC3010:03 Sensors and Sensing for Scientists *PREREQ: SC2202/SC2209-statistics*			

STUDY PERIOD 3 (Jan-Feb)		STUDY PERIOD 7 (Jun-Jul)		STUDY PERIOD 10 (Nov-Jan)	
BZ3745/BZ5745 PG:03 Tropical Entomology *PREREQ: SC2202/SC2209-statistics and BS1007- First year plant and animal biology*		**BZ2490/BZ5990** PG:03 Toolkit for the Field Biologist *PREREQ: SC2202/SC2209-statistics*		**BZ3230**:03 Ecological Research Methods *PREREQ: SC2202/SC2209-statistics and BS2460-ecology*	
		BZ3620/BZ5620 PG:03 Tropical Flora of Australia *PREREQ: BS1007-First year plant and animal biology*		**BZ5650** PG:03 Australian Land Plants: Recognition, Evolution and Diversity **EXTERNAL Only** *Note-Field trip making your own plant collection*	

CHEMISTRY
Townsville

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
CH1001:03 Chemistry: A Central Science *PREREQ: CH1020 or EG1010 or SENIOR CHEMISTRY*		**CH1002**:03 Chemistry: Principles and Applications *PREREQ: CH1001-First year chemistry*	
CH1020:03 Preparatory Chemistry		**CH1020**:03 Preparatory Chemistry	
CH2042:03 Marine Chemistry and Chemical Ecology *PREREQ: CH1001-First year chemistry*		**CH2103/CH5203** [PG]:03 Analytical Chemistry *PREREQ: CH1001-First year chemistry*	
CH2210:03 Inorganic Chemistry *PREREQ: CH1001-First year chemistry and CH1002-First year second semester chemistry*		**CH2310**:03 Syntheses and Mechanism in Organic Chemistry *PREREQ: CH1001-First year chemistry and CH1002-First year second semester chemistry*	
CH2043:03 Medicinal Chemistry and Pharmaceutical Analysis *PREREQ: CH1001-First year chemistry and CH1002-First year second semester chemistry*		**CH3110**:03 Special Topics in Analytical Chemistry *PREREQ: CH2103-Analytical chemistry*	
CH3041/CH5041 [PG]:03 Environmental Chemistry **LIMITED Subject** *PREREQ: CH1001-First year chemistry*		**CH3310**:03 Special Topics in Organic Chemistry *PREREQ: CH2310-Organic chemistry*	
CH3210:03 Applications of Inorganic Chemistry *PREREQ: CH2210-Inorganic chemistry*			
SC3010:03 Sensors and Sensing for Scientists *PREREQ: SC2202/SC2209-statistics*			

CHEMISTRY
Cairns

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
CH1020:03 Preparatory Chemistry		**CH1020**:03 Preparatory Chemistry	
CH3041/CH5041 [PG]:03 Environmental Chemistry **LIMITED Subject** *PREREQ: CH1001-First year chemistry*		**CH1001**:03 Chemistry: A Central Science *PREREQ: CH0020 or CH1020 or EG1010 or SENIOR CHEMISTRY* **MIXED Attendance**	
SC3010:03 Sensors and Sensing for Scientists *PREREQ: SC2202/SC2209-statistics*			

DATA SCIENCE
Townsville

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
MA1000:03 Mathematical Foundations *PREREQ: MA1020-Preparatory mathematics*		**MA1000**:03 Mathematical Foundations *PREREQ: MA1020-Preparatory mathematics*	
MA2000:03 Mathematics for Scientists and Engineers *PREREQ: MA1003-First year calculus which includes differential equations and basic linear algebra*		**MA1580**:03 Foundations of Data Science *PREREQ: MA1020-Preparatory mathematics*	
MA2830:03 Data Visualisation		**MA2405**:03 Advanced Statistical Modelling *PREREQ: SC2202/SC2209-statistics and MA1000-First year mathematics*	
MA3831:03 Natural Language Processing, Web Scraping and Large Data Processing *PREREQ: CP1404-Programming in Python and MA3405-Statistical data mining*		**MA3405**:03 Statistical Data Mining for Big Data *PREREQ: SC2202/SC2209/MA2405-statistics or MA2000-Intro to multivariate calculus and ordinary and partial differential equations*	
CP3403:03 Data Mining *PREREQ: CP2403- Information Processing and Visualisation AND CP2404- Database Modelling* **EXTERNAL Option**		**MA2210**:03 Linear Algebra *PREREQ: MA1003-First year calculus which includes differential equations and basic linear algebra*	
		MA3212:03 Optimisation and Operations Research *PREREQ: MA2000-Intro to multivariate calculus and ordinary and partial differential equations and MA2210-Linear algebra*	
		MA3832:03 Neural Network and Deep Learning *PREREQ: MA3405/MA5405-Statistical data mining and CP1404-Programming in Python*	

TRIMESTER 1 (January – April)		TRIMESTER 2 (May – August)		TRIMESTER 3 (September – December)	
CP1401:03 Problem Solving and Programming I **EXTERNAL Option**		**CP1401**:03 Problem Solving and Programming I **EXTERNAL Only**		**CP1404**:03 Programming II *PREREQ: CP1401-First year programming* **EXTERNAL Option**	
MA2211:03 Discrete Mathematics *PREREQ: MA1020-Preparatory Mathematics*		**CP1404**:03 Programming II *PREREQ: CP1401-First year programming* **EXTERNAL Only**		**CP2404**:03 Database Modelling **EXTERNAL Option**	
CP2403:03 Information Processing and Visualisation *PREREQ: At least 12 credit points of subjects* **EXTERNAL Option**					

DATA SCIENCE
Cairns

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
MA1000:03 Mathematical Foundations *PREREQ: MA1020-Preparatory mathematics*		**MA1580**:03 Foundations of Data Science *PREREQ: MA1020-Preparatory mathematics*	
MA2000:03 Mathematics for Scientists and Engineers *PREREQ: MA1003-First year calculus which includes differential equations and basic linear algebra*		**MA2405**:03 Advanced Statistical Modelling *PREREQ: SC2202/SC2209-statistics and MA1000-First year mathematics*	
MA2830:03 Data Visualisation		**MA3405**:03 Statistical Data Mining for Big Data *PREREQ: MA2405-Second year statistics and modelling or MA2000-Intro to multivariate calculus and ordinary and partial differential equations or SC2202/SC2209-statistics*	
MA3831:03 Natural Language Processing, Web Scraping and Large Data Processing *PREREQ: CP1404-Programming in Python and MA3405-Statistical data mining*		**MA2210**:03 Linear Algebra *PREREQ: MA1003-First year calculus which includes differential equations and basic linear algebra*	
CP3403:03 Data Mining *PREREQ: CP2403- Information Processing and Visualisation AND CP2404- Database Modelling*		**MA3212**:03 Optimisation and Operations Research *PREREQ: MA2000-Intro to multivariate calculus and ordinary and partial differential equations and MA2210-Linear algebra*	
		MA3832:03 Neural Network and Deep Learning *PREREQ: MA3405/MA5405-Statistical data mining and CP1404-Programming in Python*	

TRIMESTER 1 (January – April)		TRIMESTER 2 (May – August)		TRIMESTER 3 (September – December)	
CP1401:03 Problem Solving and Programming I				**CP1404**:03 Programming II *PREREQ: CP1401-First year programming*	
CP2403:03 Information Processing and Visualisation *PREREQ: At least 12 credit points of subjects*				**CP2404**:03 Database Modelling	
				MA3831:03 Natural Language Processing, Web Scraping and Large Data Processing - *SP86* *PREREQ: CP1404-Programming in Python and MA3405-Statistical data mining*	

BIOINFORMATICS
Townsville

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
MA1000:03 Mathematical Foundations *PREREQ: MA1020-Preparatory mathematics*		**MA1000**:03 Mathematical Foundations *PREREQ: MA1020-Preparatory mathematics*	
MA2000:03 Mathematics for Scientists and Engineers *PREREQ: MA1003-First year calculus which includes differential equations and basic linear algebra*		**MA1580**:03 Foundations of Data Science *PREREQ: MA1020-Preparatory mathematics*	
MA2830:03 Data Visualisation		**MA2405**:03 Advanced Statistical Modelling *PREREQ: SC2202/SC2209-statistics and MA1000-First year mathematics*	
MA3831:03 Natural Language Processing, Web Scraping and Large Data Processing *PREREQ: CP1404-Programming in Python and MA3405-Statistical data mining*		**MA3405**:03 Statistical Data Mining for Big Data *PREREQ: MA2405-Second year statistics and modelling or MA2000-Intro to multivariate calculus and ordinary and partial differential equations or SC2202/SC2209-statistics*	
CP3403:03 Data Mining *PREREQ: CP2403- Information Processing and Visualisation AND CP2404- Database Modelling* **EXTERNAL Option**		**MA2210**:03 Linear Algebra *PREREQ: MA1003-First year calculus which includes differential equations and basic linear algebra*	
		MA3212:03 Optimisation and Operations Research *PREREQ: MA2000-Intro to multivariate calculus and ordinary and partial differential equations and MA2210-Linear algebra*	
		MA3832:03 Neural Network and Deep Learning *PREREQ: MA3405/MA5405-Statistical data mining and CP1404-Programming in Python*	
		BC3203:03 Bioinformatics *PREREQ: SC2202/SC2209-statistics*	
		BC5203 [PG]:03 Advanced Bioinformatics **EXTERNAL Option**	
		BZ3450:03 Ecological and Conservation Genetics *PREREQ: BS2470-Second year evolution/genetics*	

TRIMESTER 1 (January – April)		TRIMESTER 2 (May – August)		TRIMESTER 3 (September – December)	
CP1401:03 Problem Solving and Programming I **EXTERNAL Option**		**CP1401**:03 Problem Solving and Programming I **EXTERNAL Only**		**CP1404**:03 Programming II **EXTERNAL Option** *PREREQ: CP1401-First year programming*	
MA2211:03 Discrete Mathematics *PREREQ: MA1020-Preparatory Mathematics*		**CP1404**:03 Programming II *PREREQ: CP1401-First year programming* **EXTERNAL Only**		**CP2404**:03 Database Modelling **EXTERNAL Option**	
CP2403:03 Information Processing and Visualisation *PREREQ: At least 12 credit points of subjects* **EXTERNAL Option**					

BIOINFORMATICS
Cairns

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
MA1000:03 Mathematical Foundations *PREREQ: MA1020-Preparatory mathematics*		**MA1580**:03 Foundations of Data Science *PREREQ: MA1020-Preparatory mathematics*	
MA2000:03 Mathematics for Scientists and Engineers *PREREQ: MA1003-First year calculus which includes differential equations and basic linear algebra*		**MA2405**:03 Advanced Statistical Modelling *PREREQ: SC2202/SC2209-statistics and MA1000-First year mathematics*	
MA2830:03 Data Visualisation		**MA3405**:03 Statistical Data Mining for Big Data *PREREQ: MA2405-Second year statistics and modelling or MA2000-Intro to multivariate calculus and ordinary and partial differential equations or SC2202/SC2209-statistics*	
MA3831:03 Natural Language Processing, Web Scraping and Large Data Processing *PREREQ: CP1404-Programming in Python and MA3405-Statistical data mining*		**MA2210**:03 Linear Algebra *PREREQ: MA1003-First year calculus which includes differential equations and basic linear algebra*	
CP3403:03 Data Mining *PREREQ: CP2403- Information Processing and Visualisation AND CP2404- Database Modelling*		**MA3212**:03 Optimisation and Operations Research *PREREQ: MA2000-Intro to multivariate calculus and ordinary and partial differential equations and MA2210-Linear algebra*	
		MA3832:03 Neural Network and Deep Learning *PREREQ: MA3405/MA5405-Statistical data mining and CP1404-Programming in Python*	

TRIMESTER 1 (January – April)		TRIMESTER 2 (May – August)		TRIMESTER 3 (September – December)	
CP1401:03 Problem Solving and Programming I				**CP1404**:03 Programming II *PREREQ: CP1401-First year programming*	
CP2403:03 Information Processing and Visualisation *PREREQ: At least 12 credit points of subjects*				**CP2404**:03 Database Modelling	
				MA3831:03 Natural Language Processing, Web Scraping and Large Data Processing - *__SP86__* *PREREQ: CP1404-Programming in Python and MA3405-Statistical data mining*	

FIRST YEAR ENGINEERING

Townsville & Cairns-Subjects Common to all Disciplines

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
EG1000:03 Engineering 1		**MA1000**:03 Mathematical Foundations	
EG1002:03 Computing and Sensors		**MA1003**:03 Mathematical Techniques *PREREQ: MA1000-First year mathematics*	
MA1000:03 Mathematical Foundations		**EG1010**:03 Process Engineering	
PH1005:03 Advanced Stream Physics		**EG1011**:03 Statics and Dynamics *PREREQ: PH1005-Advanced stream physics*	
		EG1012:03 Electric Circuits	

ENGINEERING-CHEMICAL
Townsville

STUDY PERIOD 1 (February – June)			STUDY PERIOD 2 (July – November)	
CL2501:03 Process Analysis *PREREQ: EG1010-First year chemistry/physics from an engineering perspective*			**CS3008**:03 Fluid Mechanics *PREREQ: MA2000-Intro to multivariate calculus and ordinary and partial differential equations and ME2512-Thermofluid mechanics*	
MA2000:03 Mathematics for Scientists and Engineers *PREREQ: MA1003-First year calculus which includes differential equations and basic linear algebra*			**EE3600**:03 Automatic Control 1 *PREREQ: EG1012-Electric circuits and MA2000-Intro to multivariate calculus and ordinary and partial differential equations*	
ME2512:03 Thermofluid Mechanics *PREREQ: EG1011-Engineering statics and dynamics*			**EE4600**:03 Automatic Control 2 *PREREQ: EE3600-Automatic Control I*	
CH1001:03 Chemistry: A Central Science *PREREQ: CH1020-Preparatory chemistry*			**CH1002**:03 Chemistry: Principles and Applications *PREREQ: CH1001-First year chemistry*	
CL3021:03 Mass Transfer Operations *PREREQ: CL2501-Process analysis and MA2000-Intro to multivariate calculus and ordinary and partial differential equations*			**ME3512**:03 Heat and Mass Transfer *PREREQ: MA2000-Intro to multivariate calculus and ordinary and partial differential equations*	
CL3030:03 Reactor Design *PREREQ: CL2501-Process analysis and MA2000-Intro to multivariate calculus and ordinary and partial differential equations*			**CL2502**:03 Chemical Engineering Thermodynamics *PREREQ: CL2501-Process analysis and MA2000-Intro to multivariate calculus and ordinary and partial differential equations*	
EG3000:03 Introduction to Systems Engineering Project Management *PREREQ: Successful completion of first year of engineering*			**CL4538**:03 Bioprocess Engineering *PREREQ: CL2502-Chemical engineering thermodynamics and CL3021-Mass transfer operations and CL3030-Reactor design*	
CL4040:03 Safety, Environment and Sustainability in the Process Industries *PREREQ: completed 48 credit points of Engineering subjects*			**CH2103/CH5203** [PG]:03 Analytical Chemistry *PREREQ: CH1001-First year chemistry*	
CL4071:03 Chemical Engineering Design 1 *PREREQ: Successful completion of third year chemical engineering*			**CL4072**:03 Chemical Engineering Design 2 *PREREQ: CL4071 – Chemical Engineering Design 1*	
			CL4537:03 Minerals and Solids Processing *PREREQ: completed 48 credit points of Engineering subjects*	

ENGINEERING-CIVIL
Townsville

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
CS2001:03 Engineering Strength of Materials *PREREQ: EG1011-Engineering statics and dynamics*	🧪	**CS2003**:03 Introduction to Structural Design *PREREQ: CS2001-Engineering strength of materials*	🧪
CS2002:03 Catchment, Stream and Lake Engineering	🧪	**CS2005**:03 Introduction to Geotechnical Engineering *PREREQ: EG1011-Engineering statics and dynamics*	🧪
MA2000:03 Mathematics for Scientists and Engineers *PREREQ: MA1003-First year calculus which includes differential equations and basic linear algebra*	💻	**CS3002**:03 Soil Mechanics and Geology *PREREQ: CS2005-Geotechnical engineering*	🧪
ME2512:03 Thermofluid Mechanics *PREREQ: EG1011-Engineering statics and dynamics*	🧪	**CS3003**:03 Design of Steel and Concrete Structures *PREREQ: CS2003-Structural design and CS3000-Structural analysis*	👟🧪
CS3000:03 Structural Analysis *PREREQ: CS2003-Structural design and MA2000-Intro to multivariate calculus and ordinary and partial differential equations*	🧪	**CS3008**:03 Fluid Mechanics *PREREQ: MA2000-Intro to multivariate calculus and ordinary and partial differential equations and ME2512-Thermofluid mechanics*	🧪
CS3001:03 Concrete Engineering *PREREQ: CS2001-Engineering strength of materials*	🧪	**CS4005**:03 Civil Engineering Design *PREREQ: CS3001-Concrete engineering and CS3003-Design of steel/concrete structures and CS4001-Foundation/rock mechanics engineering and CS4002-hydraulic/coastal engineering*	
EG3000:03 Introduction to Systems Engineering Project Management *PREREQ: Successful completion of first year of engineering*	💻	**CS4008**:03 Water and Wastewater Engineering *PREREQ: 48 credit points of undergraduate subjects including CS2002-Lake engineering and EG1010-Process engineering*	
CS4001:03 Foundation Engineering and Rock Mechanics *PREREQ: CS3002-Soil mechanics and geology*	🧪	**CS3004**:03 Transportation Engineering *PREREQ: 48 credit points of undergraduate subjects*	👟🧪
CS4002:03 Hydraulic and Coastal Engineering *PREREQ: CS3008-Fluid mechanics*	🧪		
CS4010:03 Finite Element Analysis and Structural Dynamics *PREREQ: EG1012-Electric circuits and MA2000-Intro to multivariate calculus and ordinary and partial differential equations and CS3000-Structural analysis*	🧪		

ENGINEERING-MECHANICAL
Townsville

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
CS2001:03 Engineering Strength of Materials *PREREQ: EG1011-Engineering statics and dynamics*		**EG2010**:03 Materials Science and Engineering	
MA2000:03 Mathematics for Scientists and Engineers *PREREQ: MA1003-First year calculus which includes differential equations and basic linear algebra*		**ME2525**:03 Machine Element Design *PREREQ: CS2001-Engineering strength of materials*	
ME2512:03 Thermofluid Mechanics *PREREQ: EG1011-Engineering statics and dynamics*		**EE3600**:03 Automatic Control 1 *PREREQ: EG1012-Electic circuits and MA2000-Intro to multivariate calculus and ordinary and partial differential equations*	
ME2521:03 Dynamics of Machine Elements *PREREQ: EG1011-Engineering statics and dynamics*		**EE4600**:03 Automatic Control 2 *PREREQ: EE3600-Automatic control I*	
EG3000:03 Introduction to Systems Engineering Project Management *PREREQ: Successful completion of first year of engineering*		**ME3512**:03 Heat and Mass Transfer *PREREQ: MA2000-Intro to multivariate calculus and ordinary and partial differential equations*	
EG3001:03 Finite Element Analysis *PREREQ: EG1002-Computing and sensors and EG1011-Engineering statics and dynamics and MA2000-Intro to multivariate calculus and ordinary and partial differential equations*		**CS3008**:03 Fluid Mechanics *PREREQ: MA2000-Intro to multivariate calculus and ordinary and partial differential equations and ME2512-Thermofluid mechanics*	
ME3511:03 Dynamics and Acoustics *PREREQ: MA2000-Intro to multivariate calculus and ordinary and partial differential equations and ME2521-Dynamics of machine elements*		**ME3525**:03 Mechanical Design *PREREQ: EG3001-Finite element analysis and ME2525-Machine element design*	
ME3515:03 Advanced Manufacturing Engineering *PREREQ: ME2525-Machine element design and EG2010-Materials science and engineering Note-Offered in even years*		**ME4515**:03 Advanced Mechanical Engineering Design *PREREQ: ME3525-Mechanical design*	
ME4513:03 Advanced Fluid Mechanics *PREREQ: CS3008-Fluid mechanics*		**ME4522**:03 Energy, Conversion and Refrigeration *PREREQ: ME2512-Thermofluid mechanics*	

ENGINEERING-ELECTRICAL & ELECTRONIC ENGINEERING

Townsville

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
CC2510:03 Digital Logic and Computing Methods *PREREQ: EG1002-Computing and sensors or CP1401-Programming I*		**CC2511**:03 Embedded Systems Design *PREREQ: EG1002-Computing and sensors or CP1404-Programming in Python*	
MA2000:03 Mathematics for Scientists and Engineers *PREREQ: MA1003-First year calculus which includes differential equations and basic linear algebra*		**EE2300**:03 Electronics 1 *PREREQ: EG1012-Electric Circuits*	
PH2019:03 Intro to EM, Optics & Early Quantum *PREREQ: (EG1012-Electic circuits or PH1005-Adv stream physics I) and MA1003-First year calculus which includes differential equations and basic linear algebra*		**EE3600**:03 Automatic Control 1 *PREREQ: EG1012-Electic circuits and MA2000-Intro to multivariate calculus and ordinary and partial differential equations*	
EE2201:03 Circuit Theory *PREREQ: EG1012-Electic circuits and MA2000-Intro to multivariate calculus and ordinary and partial differential equations. Allow concurrent enrolment for MA2000*		**EE4600**:03 Automatic Control 2 *PREREQ: EE3600-Automatic control I*	
EE3010:03 Digital Signal Processing *PREREQ: At least 48 credit points of engineering*		**EE3700**:03 Communications Systems Principles *PREREQ: EE2201-Circuit theory*	
EE3300:03 Electronics 2 *PREREQ: EE2300-Electronics I*		**CC3501**:03 Computer Interfacing and Control *PREREQ: CC2511-Embedded systems design*	
EE3400:03 Power Engineering 1 *PREREQ: EE2201-Circuit theory*		**EE4500**:03 Electrical and Electronic Engineering Design *PREREQ: EE3600-Automatic control 1 and EE3300-Electronics 2 and EE3010-Digital signal processing*	
EG3000:03 Introduction to Systems Engineering Project Management *PREREQ: Successful completion of first year of engineering*		**EE4400**:03 Power Engineering 2 *PREREQ: EE3400-Power engineering 1*	
EE4010:03 Analog Signals & Filters *PREREQ: EE2201-Circuit theory*		**EG4013**:03 Asset Management, Maintenance, and Reliability *PREREQ: (EG1000 and EG1002 and EG1010 and EG1011 and EG1012 and MA1000 and MA1003 and (PH1005 or EG1001)) or 36 credit points*	

ENGINEERING-Electronic Systems and IOT
Cairns

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
CC2510:03 Digital Logic and Computing Methods *PREREQ: EG1002-Computing and sensors or CP1401-Programming I*		**CC2511**:03 Embedded Systems Design *PREREQ: EG1002-Computing and sensors or CP1404-Programming in Python*	🧪
EE2201:03 Circuit Theory *PREREQ: EG1012-Electic circuits and MA2000-Intro to multivariate calculus and ordinary and partial differential equations. Allow concurrent enrolment for MA2000*	🧪	**EE2300**:03 Electronics 1 *PREREQ: EG1012-Electric Circuits*	
MA2000:03 Mathematics for Scientists and Engineers *PREREQ: MA1003-First year calculus which includes differential equations and basic linear algebra*		**EE3600**:03 Automatic Control 1 *PREREQ: EG1012-Electic circuits and MA2000-Intro to multivariate calculus and ordinary and partial differential equations*	
PH2019:03 Intro to EM, Optics & Early Quantum *PREREQ: (EG1012-Electic circuits or PH1005-Adv stream physics I) and MA1003-First year calculus which includes differential equations and basic linear algebra*		**EE3700**:03 Communications Systems Principles *PREREQ: EE2201-Circuit theory*	
EG3000:03 Introduction to Systems Engineering Project Management *PREREQ: Successful completion of first year of engineering*		**CC4950**:03 Design Project *PREREQ: CC3501-Computer interfacing and EE3700-Communications systems principles and EE3901-Sensor technologies*	
EE3010:03 Digital Signal Processing *PREREQ: At least 48 credit points of engineering*			
CC4510:03 Digital System Deign *PREREQ: CC3501-Computer interfacing and control*			
CP3403:03 Data Mining *PREREQ: CP2403- Information Processing and Visualisation AND CP2404- Database Modelling*			
CP3406:03 Mobile Computing *PREREQ: CP1404-Programming in Python and 18 credit points of CP subjects)*			

TRIMESTER 1 (January – April)		TRIMESTER 2 (May – August)		TRIMESTER 3 (September – December)	
				CP1404:03 Programming II *PREREQ: CP1401-First year programming or EG1002-Computing and sensors*	

ENVIRONMENTAL SCIENCE, MANAGEMENT & SUSTAINABILITY
Townsville

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
EV1005:03 Environmental Processes and Global Change		**EV1008**:03 Human Geography	
EV1009:03 Introduction to Planning		**EV1011**:03 Introduction to Sustainability	
EV2301/EV5301 PG:03 Urban Geography and Design *PREREQ: At least 12 credit points of level 1 subjects*		**EV2003/EV5003** PG:03 Introduction to Environmental Economics *PREREQ: At least 12 credit points of level 1 subjects* **MIXED Attendance**	
EV2401:03 Australian Landscape Processes and Evolution *PREREQ: At least 12 credit points of level 1 subjects*		**EV2011**:03 The Case for Sustainability	
EV3001/EV5001 PG:03 Environmental and Regional Planning *PREREQ: At least 12 credit points of level 2 subjects, including 6 credit points of EV classes* **EXTERNAL Option**		**EV2502/EV5505** PG:03 Introduction to Geographic Information Systems *PREREQ: At least 12 credit points of level 1 subjects*	
EV3201:03 Coastal and Marine Management and Conservation *PREREQ: At least 12 credit points of level 2 subjects, including 6 credit points of level 2 EV/MB/BZ classes*		**EV3110/EV5110** PG:03 Environmental and Social Impact Assessment *PREREQ: At least 12 credit points of level 2 subjects*	
EV3406:03 Coral Reef Geomorphology *PREREQ: At least 12 credit points of level 2 subjects, including 6 credit points of level 2 EA/EV/MB classes*		**EV3200/EV5200** PG:03 Natural Resource Management *PREREQ: At least 12 credit points of level 2 subjects, including 6 credit points of EV or EA classes*	
CH3041:03 Environmental Chemistry *PREREQ: CH1001-First year chemistry* **LIMITED Subject** **MIXED Attendance**		**EV3454/EV5454** PG:03 Natural Hazards *PREREQ: At least 12 credit points of level 2 subjects*	
EV3606/EV5606 PG:03 Disasters, Communities and Planning *PREREQ: At least 12 credit points of level 2 subjects*		**EV3401/EV5401** PG:03 Coastal and Catchment Geomorphology *PREREQ: At least 12 credit points of level 2 subjects, including 6 credit points of EV or EA classes*	

STUDY PERIOD 3 (Jan-Feb)		STUDY PERIOD 7 (Jun-Jul)		STUDY PERIOD 11 (Nov-Feb)	
EV3020/EV5020 PG:03 Human Dimensions in Nature, Environment and Conservation *PREREQ: At least 12 credit points of level 2 subjects*				**EV3404/EV5404** PG:03 Field Studies in Tropical Geography *PREREQ: At least 15 credit points of level 2 subjects* **LIMITED Subject**	
				EV3502/EV5502 PG:03 Advanced Geographic Information Systems	

ENVIRONMENTAL SCIENCE, MANAGEMENT & SUSTAINABILITY
Cairns

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
EV1005:03 Environmental Processes and Global Change		**EV1008**:03 Human Geography	
EV1009:03 Introduction to Planning		**EV1011**:03 Introduction to Sustainability	
EV2301/EV5301 PG:03 Urban Geography and Design *PREREQ: At least 12 credit points of level 1 subjects*		**EV2003/EV5003** PG:03 Introduction to Environmental Economics *PREREQ: At least 12 credit points of level 1 subjects* **MIXED Attendance**	
EV2401:03 Australian Landscape Processes and Evolution *PREREQ: At least 12 credit points of level 1 subjects*		**EV2011**:03 The Case for Sustainability	
EV3001/EV5001 PG:03 Environmental and Regional Planning *PREREQ: At least 12 credit points of level 2 subjects, including 6 credit points of EV subjects* **LIMITED Subject**		**EV2502/EV5505** PG:03 Introduction to Geographic Information Systems *PREREQ: At least 12 credit points of level 1 subjects*	
CH3041/CH5041 PG:03 Environmental Chemistry *PREREQ: CH1001-First year chemistry* **LIMITED Subject** **MIXED Attendance**		**EV3110/EV5110** PG:03 Environmental and Social Impact Assessment *PREREQ: At least 12 credit points of level 2 subjects*	
EV3606/EV5606 PG:03 Disasters, Communities and Planning *PREREQ: At least 12 credit points of level 2 subjects* **LIMITED Subject** **MIXED Attendance**		**EV3200/EV5200** PG:03 Natural Resource Management *PREREQ: At least 12 credit points of level 2 subjects, including 6 credit points of EV or EA subjects*	
		EV3401/EV5401 PG:03 Coastal and Catchment Geomorphology *PREREQ: At least 12 credit points of level 2 subjects, including 6 credit points of EV or EA subjects*	
		EV3454/EV5454 PG:03 Natural Hazards *PREREQ: At least 12 credit points of level 2 subjects*	
		EV3506/EV5506 PG:03 Remote Sensing - SP9 (September-November) *PREREQ: At least 12 credit points of level 2 subjects, including EV2502. Allow concurrent enrolment for EV2502* **Online learning 9 weeks prior to commencing subject on campus* **LIMITED Subject** **Mixed Attendance**	

STUDY PERIOD 3 (Jan-Feb)		STUDY PERIOD 7 (Jun-Jul)		STUDY PERIOD 11 (Nov-Jan)	
EV3020/EV5020 PG:03 Human Dimensions in Nature, Environment and Conservation *PREREQ: At least 12 credit points of level 2 subjects*				**EV3404/EV5404** PG:03 Field Studies in Tropical Geography *PREREQ: At least 15 credit points of level 2 subjects* **LIMITED Subject** *Note-Offered in even years only.*	

GEOLOGY & EARTH SCIENCE
Townsville

STUDY PERIOD 1 (February – June)			STUDY PERIOD 2 (July – November)	
EA2006/EA5016 ^{PG}:03 Hydrology *PREREQ: At least 12 credit points of level 1 subjects*			**EA1110**:03 Evolution of the Earth	
EA2220/EA5048 ^{PG}:03 Minerals and Magmas *PREREQ: EA1110-First year geology and at least 9 credit points of subjects*			**EA2007/EA3207/EA5017** ^{PG}:03 Soil Properties and Processes (for Management/<u>Science</u>) *PREREQ: At least 12 credits of first year*	
EA2510/EA5320 ^{PG}:03 Earth Resources, Exploration and Environment *PREREQ: EA1110-First year geology and at least 9 credit points of subjects*			**EA2010**:03 Introductory Geology *Note-Cannot be taken with EA1110*	
EA3130/EA5130 ^{PG}:03 Advanced Petrology *PREREQ: EA1110-First year geology and EA2220-Minerals and (CH1020-Preparatory chemistry or high school chemistry equivalent)*			**EA2110**:03 Introduction to Sedimentology *PREREQ: EA1110-First year geology and at least 9 credit points of subjects*	
EA3210/EA5211 ^{PG}:03 Structural Geology and Tectonics *PREREQ: EA1110-First year geology*			**EA2404/EA5404** ^{PG}:03 Earth's Climate: Past, Present and Future *PREREQ: At least 12 credits of first year*	
EA3400/EA5043 ^{PG}:03 Ore Genesis and Critical Mineral Exploration *PREREQ: At least 12 credit points of level 2 subjects including EA2510/EA5320-Earth resources and EA2220/EA5048-Minerals*			**EA3120/EA5120** ^{PG}:03 The Fossil Record: Dinosaurs and Vertebrates Through Time	
			EA3110:03 Sedimentology and Stratigraphy *PREREQ: EA1110-First year geology*	
			EA3650/EA5650 ^{PG}:03 Energy Resources and Basin Analysis *PREREQ: At least 12 credit points of level 2 subjects including EA2110-Intro to sedimentology*	
			EA3800/EA5046 ^{PG}:03 Earth and Environmental Geochemistry *PREREQ: At least 12 credit points of level 2 subjects and 3 credit points of level 1 CH subjects and 3 credit points of level 1 EA subjects*	

STUDY PERIOD 3 (Jan-Feb)	STUDY PERIOD 6/7 (May-Jul)		STUDY PERIOD 11 (Nov-Feb)	
	EA2900/EA5330 ^{PG}:03 Introductory Outback Field Geology - SP7 *PREREQ: EA1110-First year geology and at least 9 credit points of subjects*		**EA3640/EA5640** ^{PG}:03 Advanced Environmental & Marine Geoscience Technologies and Applications *PREREQ: At least 12 credit points of level 2 subjects and 3 credit points of first year EA or MB subjects*	
	EA3510/EA5044 ^{PG}:03 Geological Mapping - SP6 *PREREQ: At least 12 credit points of level 2 subjects including EA2220/EA5048-Minerals and EA2900/EA5330-Field geology and EA3210/EA5211-Structural geology *Must co-enroll in EA3511*			
	EA3511/EA5045 ^{PG}:03 Field Techniques in Geology - SP7 *PREREQ: EA2220/EA5048-Minerals and EA2900/EA5330-Field geology and EA3210/EA5211-Structural geology and EA3510/EA5044-Geological mapping *Must co-enroll in EA3510*			

GEOLOGY & EARTH SCIENCE
Cairns

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
EA2006/EA5016 [PG]:03 Hydrology *PREREQ: At least 12 credit points of level 1 subjects*		**EA1110**:03 Evolution of the Earth	
EA2220/EA5048 [PG]:03 Minerals and Magmas *PREREQ: EA1110-First year geology and at least 9 credit points of subjects*		**EA2007/EA3207/EA5017** [PG]:03 Soil Properties and Processes (for Management/Science) *PREREQ: At least 12 credits of level 1 subjects*	
EA3210:03 Structural Geology and Tectonics *PREREQ: EA1110-First year geology*		**EA2110**:03 Introduction to Sedimentology *PREREQ: EA1110-First year geology and at least 9 credit points of subjects*	
		EA2404/EA5404 [PG]:03 Earth's Climate: Past, Present and Future *PREREQ: At least 12 credits of level 1 subjects*	
		EA3110:03 Sedimentology and Stratigraphy *PREREQ: EA1110-First year geology*	
		EA3800/EA5046 [PG]:03 Earth and Environmental Geochemistry *PREREQ: At least 12 credit points of level 2 subjects and 3 credit points of level 1 CH subjects and 3 credit points of level 1 EA subjects*	

STUDY PERIOD 3 (Jan-Feb)		STUDY PERIOD 6/7 (Jun-Jul)		STUDY PERIOD 10 (Nov-Jan)	
		EA2900:03 Introductory Outback Field Geology - SP7 *PREREQ: EA1110-First year geology and at least 9 credit points of subjects*			
		EA3007/EA5018 [PG]:03 Field Studies in Tropical Land and Water Science - SP6 **LIMITED Subject Mixed Attendance** *PREREQ: At least 12 credit points of level 2 EV or level 2, 3 of 5 EA subjects including EA2006/EA5016-Hydrology and EA2007/EA3207/EA5017-Soil properties and management*			

INDIGENOUS STUDIES
Townsville

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
IA1011/IA5013 PG:03 Indigenous Australians **EXTERNAL Option (IA1011)** **EXTERNAL Only (IA5013)**		**IA1012**:03 Indigenous People of North Queensland **EXTERNAL Option**	
IA2022/IA5022 PG:03 Aboriginal and Torres Strait Islander People as Colonial Subjects **EXTERNAL Option (IA2022)** **EXTERNAL Only (IA5022)**		**IA2023**:03 Indigenous Continuity: Agency, Adaptation and Resistance **EXTERNAL Option**	
IA3024:03 Indigenous Narratives in the Contemporary Era **EXTERNAL Option**		**IA2030/IA5029 PG**:03 Comparative Indigenous Studies **EXTERNAL Option (IA2030)** **EXTERNAL Only (IA5029)**	
IA3025:03 Navigating Complex Knowledge Intersections **EXTERNAL Only**		**IA3030/IA5030 PG**:03 Navigating the Cultural Interface **EXTERNAL Only (IA5030)**	

INDIGENOUS STUDIES
Cairns

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
IA1011:03 Indigenous Australians		**IA1012**:03 Indigenous People of North Queensland	
IA2022:03 Aboriginal and Torres Strait Islander People as Colonial Subjects		**IA2023**:03 Indigenous Continuity: Agency, Adaptation and Resistance	
IA3024:03 Indigenous Narratives in the Contemporary Era		**IA2030**:03 Comparative Indigenous Studies	
IA3025:03 Navigating Complex Knowledge Intersections		**IA3030**:03 Navigating the Cultural Interface	

INFORMATION TECHNOLOGY-IT
Townsville

TRIMESTER 1 (January – April)		TRIMESTER 2 (May – August)		TRIMESTER 3 (September – December)	
CP1401:03 Problem Solving and Programming I **EXTERNAL Option**		**CP1401**:03 Problem Solving and Programming I **EXTERNAL Only**		**CP1403**:03 Design Thinking I **EXTERNAL Option**	
CP1402:03 Internet Fundamentals **EXTERNAL Option**		**CP1404**:03 Programming II *PREREQ: CP1401-First year programming* **EXTERNAL Only**		**CP1404**:03 Programming II *PREREQ: CP1401-First year programming* **EXTERNAL Option**	
CP1406:03 Web Design and Development **EXTERNAL Option**		**CP1407**:03 Introductory Machine Learning and Data Science **EXTERNAL Option**		**CP2404**:03 Database Modelling **EXTERNAL Option**	
CP2403:03 Information Processing and Visualisation *PREREQ: At least 12 credit points of subjects* **EXTERNAL Option**		**CP2405**:03 Collective Intelligence and Entrepreneurship *PREREQ: At least 24 credit points* **EXTERNAL Option**		**CP2406**:03 Programming III *PREREQ: CP1404-Programming in Python* **EXTERNAL Option**	
CP2414:03 Network Security *PREREQ: CP1402-Internet fundamentals* **EXTERNAL Option**		**CP3406**:03 Mobile Computing *PREREQ: CP1404-Programming in Python and 18 credit points of CP subjects)* **EXTERNAL Option**		**CP2408**:03 Design Thinking II *PREREQ: CP1403-First year design thinking* **EXTERNAL Option**	
MA2011:03 Discrete Mathematics for Computing *PREREQ: Algebra and arithmetic to Year 10 standard* **EXTERNAL Option**		**CP3501**:03 Deep Learning **EXTERNAL Option**		**CP2501**:03 Cloud Computing **EXTERNAL Option**	
CP3402:03 Content Management Systems *PREREQ: CP1404-Programming in Python and CP1406-Web design and 24 credit points of CP subjects* **EXTERNAL Option**				**CP3404**:03 Information Security *PREREQ: CP2414-Network security or 18 credit points of subjects including CP1402-Internet fundamentals* **EXTERNAL Option**	
CP3403:03 Data Mining *PREREQ: (CP2403-Information Processing and Visualisation AND CP2404-Database Modelling) or (18 credit points of undergraduate subjects including 6 credit points of CP subjects)* **EXTERNAL Option**				**CP3405**:03 Design Thinking III *PREREQ: CP2408-Design thinking* **EXTERNAL Option**	
CP3407:03 Advanced Software Engineering *PREREQ: (CP1404-Programming in Python and 18 credit points of CP subjects)* **EXTERNAL Option**					

INFORMATION TECHNOLOGY-IT
Cairns

TRIMESTER 1 (January – April)		TRIMESTER 2 (May – August)		TRIMESTER 3 (September – December)	
CP1401/**CP5639**:03 Problem Solving and Programming I		**CP1407**:03 Introductory Machine Learning and Data Science		**CP1403**:03 Design Thinking I	
CP1402/**CP5631**:03 Internet Fundamentals		**CP2405**/**CP5635** ᴾᴳ:03 Collective Intelligence and Entrepreneurship *PREREQ: At least 24 credit points* **EXTERNAL Option**		**CP1404**:03 Programming II *PREREQ: CP1401/CP5639-First year programming*	
CP1406/**CP5638**:03 Web Design and Development		**CP3406**:03 Mobile Computing *PREREQ: CP1404-Programming in Python and 18 credit points of CP subjects)*		**CP2404**/**CP5633** ᴾᴳ:03 Database Modelling	
CP2403:03 Information Processing and Visualisation *PREREQ: At least 12 credit points of subjects*		**CP3501**:03 Deep Learning		**CP2406**:03 Programming III *PREREQ: CP1404-Programming in Python*	
CP2414:03 Network Security *PREREQ: CP1402/CP5631-Internet fundamentals*		**CP5307** ᴾᴳ:03 Advanced Mobile Technology *PREREQ: CP5639-First year programming*		**CP2408**:03 Design Thinking II *PREREQ: CP1403-First year design thinking*	
MA2011:03 Discrete Mathematics for Computing *PREREQ: Algebra and arithmetic to Year 10 standard*		**CP5602** ᴾᴳ:03 Advanced Algorithm Analysis *PREREQ: CP5639-First year programming*		**CP2501**:03 Cloud Computing **EXTERNAL Option**	
CP3402:03 Content Management Systems *PREREQ: CP1404-Programming in Python and CP1406/CP5638-Web design and 24 credit points of CP subjects*				**CP3404**:03 Information Security *PREREQ: CP2414-Network security or 18 credit points of subjects including CP1402/CP5631-Internet fundamentals*	
CP3403:03 Data Mining *PREREQ: (CP2403-Information Processing and Visualisation AND CP2404/CP5633- Database Modelling) or (18 credit points of undergraduate subjects including 6 credit points of CP subjects)*				**CP3405**:03 Design Thinking III *PREREQ: CP2408-Design thinking*	
CP3407:03 Advanced Software Engineering *PREREQ: (CP1404-Programming in Python and 18 credit points of CP subjects)*				**CP5636** ᴾᴳ:03 e-Strategic Management	

MARINE BIOLOGY
Townsville

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
MB2050:03 Functional Biology of Marine Organisms *PREREQ: BS1007-First year plant and animal biology*		**MB1110**:03 Introductory Marine Science *PREREQ: CH1020-Preparatory Chemistry or equivalent and MA1020-Preparatory Mathematics or equivalent, allow concurrent for CH1020 and MA1020*	
MB2070/MB5070 PG:03 Marine Biogeography *PREREQ: BS1001-First year cell biology and BS1007-First year plant and animal biology*		**MB2080/MB5380** PG:03 Invertebrate Biology *PREREQ: BS1007-First year plant and animal biology*	
MB3050/MB5055 PG:03 Biological Oceanography *PREREQ: BS1007-First year plant and animal biology and MB2050-Marine organisms and SC2202/SC2209-statistics*		**BS2460/BS5460** PG:03 Fundamentals of Ecology *PREREQ: 6 credit points of biology and/or environmental science subjects*	
MB3150/MB5003 PG:03 Fisheries Science *PREREQ: SC2202/SC2209-statistics or BS2460-ecology*		**MB3190/MB5190** PG:03 Coral Reef Ecology *PREREQ: BS2460-ecology*	
MB3160/MB5160 PG:03 Evolution and Ecology of Reef Fishes *PREREQ: MB2050-Marine organisms and BS2460-ecology and BS2470-Evolution or MB2070-Marine biogeography*		**MB3200/MB5004** PG:03 Marine Conservation Biology *PREREQ: SC2202/SC2209-statistics or BS2460-ecology*	
MB3210/MB5400 PG:03 Life History and Evolution of Reef Corals *PREREQ: SC2202/SC2209-statistics and BS2460-ecology*		**MB3270/MB5270** PG:03 Coastal, Estuarine and Mangrove Ecosystems *PREREQ: BS1007-First year plant and animal biology and BS2460-ecology and SC2202/SC2209-statistics*	
CH2042:03 Marine Chemistry and Chemical Ecology *PREREQ: CH1001-First year chemistry*		**MB5610** PG:03 Fishing Gear and Technologies **Mixed Attendance**	
EV3201/EV5701 PG:03 Coastal and Marine Management and Conservation *PREREQ: At least 12 credit points at level 2 subjects including 6 credit points of level 2 EV, BZ or MB subjects*		**PH2006**:03 Marine Physics	
EV3406/EV5406 PG:03 Coral Reef Geomorphology *PREREQ: At least 12 credit points at level 2 subjects including 6 credit points of level 2 EA, EV or MB subjects*		**EV3401/EV5401** PG:03 Coastal and Catchment Geomorphology *PREREQ: At least 12 credit points at level 2 subjects including 6 credit points of level 2 EV or EA subjects*	
MB3204:03 Conserving Marine Wildlife: Sea Mammals, Birds, Reptiles *PREREQ: At least 12 credit points at level 2 subjects including 6 credit points of level 2 BS, BZ, EV or MB subjects*			
BS5260 PG:03 Modelling Ecological Dynamics **Only Available to Postgraduate Students*			
MB5350 PG:03 Evidence and Controversy in Marine Science			
MB5620 PG:03 Grand Challenges in Fisheries			

STUDY PERIOD 3 (Jan-Feb)		STUDY PERIOD 7 (Jun-Jul)		STUDY PERIOD 10 (Nov-Jan)	
MB5310 ^{PG}:03 Marine Reserves as Fisheries Management Tools **Only Available to Postgraduate Students*				**MB3014/MB5014** ^{PG}:03 Managing Tropical Fisheries *PREREQ: At least 12 credit points at level 2 subjects including 6 credit points of level 2 BS, BZ, EV or MB subjects*	

MATH
Townsville

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
MA1000:03 Mathematical Foundations *PREREQ: MA1020-Preparatory mathematics or equivalent*		**MA1000**:03 Mathematical Foundations *PREREQ: MA1020-Preparatory mathematics or equivalent*	
MA1020:03 Preparatory Mathematics		**MA1003**:03 Mathematical Techniques *PREREQ: MA1000-First year mathematics*	
MA1020:03 Preparatory Mathematics **EXTERNAL Option**		**MA1020**:03 Preparatory Mathematics	
MA1022:03 Essential Maths **EXTERNAL Option**		**MA1580**:03 Foundations of Data Science **EXTERNAL Option**	
MA2000:03 Mathematics for Scientists and Engineers *PREREQ: MA1003-First year calculus which includes differential equations and basic linear algebra*		**SC1102/SC1109**:03 Modelling Natural Systems *PREREQ: MA1020-Preparatory mathematics or equivalent*	💻
MA2211:03 Discrete Mathematics *PREREQ: MA1020-Preparatory mathematics or equivalent*		**MA2210**:03 Linear Algebra *PREREQ: MA1003-First year calculus which includes differential equations and basic linear algebra*	
MA2830:03 Data Visualization		**MA2405**:03 Advanced Statistical Modelling *PREREQ: SC2202/SC2209-statistics and MA1000-First year mathematics*	
SC2202/SC2209:03 Quantitative Methods in Science* **PREREQ: Intro statistics and RStudio module available immediately upon enrolment at JCU.*		**SC2202**:03 Quantitative Methods in Science* **PREREQ: Intro statistics and RStudio module available immediately upon enrolment at JCU.*	
MA3211:03 Mathematical Modelling and Differential Equations *PREREQ: MA2000-Intro to multivariate calculus and ordinary and partial differential equations and MA2210-Linear algebra*		**MA3212**:03 Optimisation and Operations Research *PREREQ: MA2000-Intro to multivariate calculus and ordinary and partial differential equations and MA2210-Linear algebra*	
MA5410 PG:03 Mathematical Statistics **Only Available to Postgraduate Students*		**MA3210**:03 Probability and Stochastic Processes *PREREQ: MA2000-Intro to multivariate calculus and ordinary and partial differential equations and MA2210-Linear algebra*	
MA5411 PG:03 Statistical Consulting		**MA3405**:03 Statistical Data Mining for Big Data *PREREQ: MA2405-Statistical modelling or MA2000-Intro to multivariate calculus and ordinary and partial differential equations or SC2202/SC2209-statistics*	
MA5403 PG:03 Applied Statistical Computation **Only Available to Postgraduate Students*		**MA5403 PG**:03 Applied Statistical Computation **Only Available to Postgraduate Students*	
		MA5405 PG:03 Data Mining *PREREQ: MA2405-Statistical modelling or MA2000-Intro to multivariate calculus and ordinary and partial differential equations or SC2202/SC2209/SC5202-Second year statistics*	
		MA5410 PG:03 Mathematical Statistics **Only Available to Postgraduate Students*	
		MA5411 PG:03 Statistical Consulting	

STUDY PERIOD 3 (Jan-Feb)		TRIMESTER 1 (January – April)		STUDY PERIOD 86 (Nov-Dec)	
MA1020:03 Preparatory Mathematics		**MA1020**:03 Preparatory Mathematics		**MA2900**:03 Mathematics Content Knowledge for Middle School Teaching *PREREQ: MA1000-First year mathematics*	
MA1003:03 Mathematical Techniques *PREREQ: MA1000-First year mathematics*					

MATHS & PHYSICS
Cairns

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
MA1000:03 Mathematical Foundations		**MA1003**:03 Mathematical Techniques *PREREQ: MA1000-First year mathematics*	
MA1020:03 Preparatory Mathematics		**MA1022**:03 Essential Maths	
MA1022:03 Essential Maths		**MA1580**:03 Foundations of Data Science *PREREQ: MA1020-Preparatory mathematics*	
MA2000:03 Mathematics for Scientists and Engineers *PREREQ: MA1003-First year calculus which includes differential equations and basic linear algebra*		**MA2405**:03 Advanced Statistical Modelling *PREREQ: SC2202/SC2209-statistics and MA1000-First year mathematics*	
SC2202/SC2209:03 Quantitative Methods in Science* **PREREQ: Intro statistics and RStudio module available immediately upon enrolment at JCU.*			
SC3010:03 Sensors and Sensing for Scientists *PREREQ: SC2202/SC2209-statistics*			

STUDY PERIOD 3 (Jan-Feb)		STUDY PERIOD 7 (Jun-Jul)		STUDY PERIOD 10 (Nov-Jan)	
MA1020:03 Preparatory Mathematics					

PHYSICS
Townsville

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
PH1005:03 Advanced Stream Physics 1 *PREREQ: MA1020-Preparatory mathematics or equivalent*		**PH1001**:03 Preparatory Physics	
PH2002:03 Classical Mechanics and Quantum Physics 1 *PREREQ: MA1003-First year calculus which includes differential equations and basic linear algebra and PH1005-First year physics and PH1007-First year second semester physics*		**PH1007**:03 Advanced Stream Physics 2 *PREREQ: MA1020-Preparatory mathematics or equivalent and PH1005-First year physics*	
PH2019:03 Introduction to Electromagnetism Optics and Early Quantum *PREREQ: MA1003-First year calculus which includes differential equations and basic linear algebra and (PH1005-First year physics or EG1012-Electric circuits)*		**PH2006**:03 Marine Physics	
PH2023:03 Human Biomechanics 1 *PREREQ: PH1001-Preparatory physics or PH1005- First year physics*		**PH2009**:03 Advanced Marine Physics *PREREQ: PH1005- First year physics and MA1000-First year mathematics*	
PH3008:03 Statistical Mechanics and Transport *PREREQ: PH2019-Electromagnetism optics and early quantum and PH2002-Classical mechanics and quantum physics 1 and MA2000-Intro to multivariate calculus and ordinary and partial differential equations*		**PH3024**:03 Human Biomechanics 2 *PREREQ: MA1000-First year mathematics and (PH1005-First year physics or PH2023-Human biomechanics 1 or SP2003-Kinesiology and biomechanics)*	
PH3021:03 Physics of the Earth, Solar System, and Universe *PREREQ: MA2000-Intro to multivariate calculus and ordinary and partial differential equations and PH2019-Electromagnetism optics and early quantum and PH2002-Classical mechanics and quantum physics 1*		**PH2048**:03 Medical and Radiation Physics *PREREQ: PH1007-First year second semester physics and MA1003-First year calculus which includes differential equations and basic linear algebra*	
SC3010:03 Sensors and Sensing for Scientists *PREREQ: SC2202/SC2209-statistics*		**PH3002**:03 Quantum Physics 2 *PREREQ: PH2002-Classical mechanics and quantum physics 1 and MA2000-Intro to multivariate calculus and ordinary and partial differential equations*	
		PH3006:03 Oceanography and Meteorology *PREREQ: PH2019-Electromagnetism optics and early quantum and MA2000-Intro to multivariate calculus and ordinary and partial differential equations*	

PRE-MED
Townsville

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
BM1000:03 Introductory Biochemistry and Microbiology *PREREQ: CH1020-Preparatory chemistry or equivalent, allow concurrent for CH1020*		**BC2023**:03 Molecular Genetics *PREREQ: 18 credit points of level 1 subjects including BM1000-First year biochemistry/microbiology*	
BC2013:03 Principles of Biochemistry *PREREQ: 18 credit points of level 1 subjects including BM1000-First year biochemistry/microbiology*		**BC2024**:03 Principles of Molecular Cell Biology *PREREQ: 18 credit points of level 1 subjects including BM1000-First year biochemistry/microbiology*	
BC3101:03 Genes, Genomes and Development *PREREQ: BC2023-Molecular genetics*		**BC3201**:03 Bioengineering *PREREQ: BC2013-Second year biochemistry and BC2023-Molecular genetics*	
BC3102:03 Molecular Basis for Disease *PREREQ: BC2013-Second year biochemistry and BC2024-Molecular cell biology*		**BM3000**:03 Advanced Projects in Biomedicine *PREREQ: 18 credit points of level 2 subjects*	
CH2043:03 Medicinal Chemistry and Pharmaceutical Analysis *PREREQ: CH1001-First year chemistry and CH1002-First year second semester chemistry*		**HS1003**:03 Lifespan Development for Health	
MI3021:03 Clinical Microbiology *PREREQ: MI2021-Infectious diseases/immunobiology*		**MI2021**:03 Introductory Infectious Diseases and Immunobiology *PREREQ: 18 credit points of level 1 subjects including MB1000-First year biochemistry/microbiology or BS1001-Cell biology/genetics*	
MI3061:03 Advanced Immunobiology *PREREQ: MI2021-Infectious diseases/immunobiology or MI2011-Microbial ecology*		**MI3051**:03 Clinical Microbiology 2 *PREREQ: MI3021-Clinical microbiology*	
PH2023:03 Human Biomechanics 1 *PREREQ: PH1001-Preparatory physics or PH1005- First year physics*		**PH3024**:03 Human Biomechanics 2 *PREREQ: MA1000-First year mathematics and (PH1005-First year physics or PH2023-Human biomechanics 1 or SP2003-Kinesiology and biomechanics)*	
PP2101:03 Medical Physiology 1 *PREREQ: 18 credit points of level 1 subjects*		**PP2150**:03 Introduction to Medical Pharmacology	
PP3101:03 Advanced and Integrated Physiology *PREREQ: BC2013-Second year biochemistry and PP2101-Medical physiology 1 and PP2201-Medical physiology 2*		**PP2201**:03 Medical Physiology 2 *PREREQ: 18 credit points of level 1 subjects*	
PP3151:03 General Pathobiology *PREREQ: BM1002-First year anatomy/physiology and BM1004-First year second semester anatomy/physiology*		**PP3252**:03 Neuropharmacology *PREREQ: (BC2024 Molecular cell biology or PP2150-Intro to medical pharmacology) and PP2101-Medical physiology 1 and PP2201-Medical physiology 2*	
HS2403:03 Health Promotion for Health Professionals *NOTE-Enrolment with subject coordinator approval only*		**HS2401**:03 Rural and Remote Primary and Public Health Care *NOTE:-Enrolment with subject coordinator approval only*	
SP3006:03 Environmental and Sports Medicine *PREREQ: SP2007-Physiological basis for exercise and sport*			

TRIMESTER 1 (January – April)		TRIMESTER 2 (May – August)		TRIMESTER 3 (September – December)	
BM1110:03 Molecules to Microbes *Note-Intended for BBiomed/MedLab students*		**BM1201**:03 Energy Metabolism: Powering Life *PREREQ: CH1020 Preparatory Chemistry and MA1020 Preparatory Mathematics and BM1110 Molecules to Microbes and*		**BM1300**:03 Genes and Health *PREREQ: CH1020 Preparatory Chemistry and MA1020 Preparatory Mathematics and BM1110 Molecules to Microbes and Mathematical Methods or equivalent preparatory mathematics*	

		Senior Chemistry or preparatory equivalent			
		BM1210:03 Structure to Function: Cells to Systems *PREREQ: BM1110 Molecules to Microbes*		**PY2101**:03 Psychological Neuroscience *PREREQ: PY1101-Exploring psychology 1 or PY1102-Exploring psychology 2*	

SPORTS & EXERCISE SCIENCE
Townsville

STUDY PERIOD 1 (February – June)		STUDY PERIOD 2 (July – November)	
BM1061:03 Anatomy and Physiology for Sport and Exercise Science 1		**BM1062**:03 Anatomy and Physiology for Sport and Exercise Science 2	
SP1003:03 Communication for Sport and Exercise Science and Exercise Physiology (Clinical)		**SP1002**:03 Nutrition for Health and Physical Activity	🧪
SP1011:03 Physical Activity for Health		**SP1012**:03 Exercise and Sports Testing *PREREQ: SP1011-Physical activity and BM1061-First year anatomy/physiology for sport/exercise science 1 and SP1003-Communication for sport/exercise and BM1062-First year anatomy/physiology for sport/exercise science 2*	
SP2003:03 Functional Kinesiology and Biomechanics *PREREQ: PH1001-Introductory physics and SP1012-Exercise/sports testing and BM1062-First year anatomy/physiology for sport/exercise science 2*	🧪	**SP2010**:03 Principles of Motor Learning and Motor Control *PREREQ: SP2201-Exercise prescription Note-Approval from Director of Institute of Sport & Exercise Science required*	🧪
SP2007:03 Physiological Basis for Exercise and Sport *PREREQ: SP1012-Exercise/sports testing and BM1062-First year anatomy/physiology for sport/exercise science 2 Note-Approval from Director of Institute of Sport & Exercise Science required*	🧪💻	**SP2016**:03 Exercise Prescription and Delivery *PREREQ: SP2201-Exercise prescription and SP2007-Physiological basis for exercise/sport and SP2009-Strength training/conditioning and SP2207-Dynamics or sport/exercise behaviour, allow concurrent for SP2207*	🧪
SP2009:03 Strength Training and Conditioning *PREREQ: SP1012-Exercise/sport testing and BM1062-First year anatomy/physiology for sport/exercise science 2 Note-Approval from Director of Institute of Sport & Exercise Science required*	🧪	**SP2207**:03 Dynamics of Sport and Exercise Behaviour *PREREQ: PY1101-Exploring psychology 1 and SP1011-Physical activity for health and SP1003-Communication for sport/exercise*	
SP2200:03 Exercise and Sports Testing *PREREQ: BM1061-First year anatomy/physiology for sport/exercise science 1 and BM1062-First year anatomy/physiology for sport/exercise science 2*	🧪💻	**SP3018**:03 Advanced Biomechanics *PREREQ: SP2003-Functional kinesiology/biomechanics and SP2016-Exercise prescription/delivery*	🧪
SP2201:03 Exercise Prescription *PREREQ: Sport science and approval from Director of Institute of Sport & Exercise Science required*		**SP3014**:03 Independent Project in Sport and Exercise Science & Clinical Exercise Physiology *PREREQ: Successful completion of second year sports and exercise science*	
SP3006:03 Environmental and Sports Medicine *PREREQ: SP2007-Physiological basis for exercise/sport*	🧪	**SP3016**:03 Exercise Prescription Delivery *PREREQ: SP2201-Exercise prescription and SP2009-Strength training/conditioning and SP3008-Practicum in sport/exercise science*	👟🧪💻
SP3008:03 Practicum in Sport and Exercise Science/Clinical Exercise Physiology *PREREQ: SP2016-Exercise prescription/delivery and SP2207-Dynamics of sport/exercise*	👟🧪💻	**SP3017**:03 Principles of Clinical Exercise Physiology Practice *PREREQ: SP3008-Practicum in sport/exercise science*	💻
SP3011:03 Sports Training and Rehabilitation *PREREQ: SP2016-Exercise prescription/delivery*	🧪💻		
SP3015:03 Advanced Motor Learning and Motor Control *PREREQ: Sport science and approval from Director of Institute of Sport & Exercise Science required*	🧪💻		
SP3106:03 Applied Physiological Basis for Exercise and Sport *PREREQ: SP2007-Physiological basis for exercise/sport and SP2016-Exercise prescription/delivery*	🧪		

Research Projects and Work-Integrated Learning (2024)

SC3901: Special Topic 1-UG An independent study and/or research devoted to a topic not available through structured coursework. The subject is to be developed in consultation with a member of staff from the College of Science and Engineering and the student's course coordinator. To request enrolment in this subject student's should (1) attain approval from a research supervisor (usually an academic or research staff member in the College), (2) identify a project in consultation with the supervisor, and (3) email confirmation from supervisor and a brief description of the project to the subject coordinator.	
SC3902: Special Topic 2-UG	
SC5901: Special Topic 1-PG	
SC5902: Special Topic 2-PG	
SC5902: Special Topic 2-PG	
SC3008: Professional Placement **Prerequisites: STUDENTS MUST HAVE SUCCESSFULLY COMPLETED 12 SECOND YEAR CREDIT POINTS. ENROLMENT IS RESTRICTED TO STUDENTS WITH AN APPROVED PLACEMENT.** This is the Work Integrated Learning subject for multiple undergraduate science degrees in the final year of study. The subject is designed to integrate knowledge and skills developed throughout the degree in a practical workplace setting. Students undertake a professional placement in a relevant, approved industry workplace or via an industry relevant project (minimum 130 hours). Students may source their own professional placements to meet their career goals or apply for a sourced placement. Through a number of tasks students will reflect upon personal and professional growth and evaluate the theory/practice nexus. Enrolment is restricted to students with an approved placement.	**Work-Integrated Learning (WIL)**
SC5008: Professional Placement ==Available to students only with permission of the subject coordinator.== **Inadmissible Subject Combinations: SC5009** Enrolment may only be approved by the subject coordinator. Please contact directly to discuss eligibility and enrolment conditions. This subject is designed to integrate knowledge and skills developed throughout the degree in a practical workplace setting. Students undertake a professional placement in a relevant, approved industry workplace (minimum 140 hours) and through a number of tasks reflect upon personal and professional growth and evaluate the theory/practice nexus.	**Work-Integrated Learning (WIL)**