

Bachelor of Mathematics (Advanced)

INFORMATION FOR STUDENTS WHO COMMENCED IN THE BACHELOR OF MATHEMATICS (ADVANCED) [40212] PRIOR TO 2023

The University is incorporating Work Integrated Learning (WIL) into all undergraduate programs as a 10-unit Core Course, for students commencing in the program from 2023 onwards. WIL provides students from all disciplines and backgrounds with the opportunity to gain real world work experience and improve employability outcomes.

Students who commenced the program prior to 2023 are not required to complete WIL.

Transition Arrangements

Pre-2023 students who have yet to commence or successfully complete SCIE3003A/B, must complete SCIE3003, plus 10 units of courses available from a Bachelor of Mathematics Major Directed Course list.

Students who have **successfully completed SCIE3003A** but **not completed SCIE3003B**, will need to complete SCIE3003B in **Semester 1 2023**, which will be the last offering of this course.

Students who have completed SCIE3003A and SCIE3003B will continue with the current program structure.

The table below provides a summary of the changes to the Bachelor of Mathematics (Advanced):

2022 Program Requirements	2023 Program Requirements	Equivalencies
Core Courses (130 Units)	Core Courses (130 Units)	
MATH1110 – Mathematics for Engineering, Science and Technology 1 (10 units)	MATH1110 – Mathematics for Engineering, Science and Technology 1 (10 units)	No change
MATH1120 – Mathematics for Engineering, Science and Technology 2 (10 units)	MATH1120 – Mathematics for Engineering, Science and Technology 2 (10 units)	No change
MATH1800 – Mathematical Modelling (10 units)	MATH1800 – Mathematical Modelling (10 units)	No change
SCIE1003 – Advanced Scientific Thinking (10 units)	SCIE1003 – Advanced Scientific Thinking (10 units)	No change
STAT1100 – Data Wrangling and Visualisation (10 units)	STAT1100 – Data Wrangling and Visualisation (10 units)	No change
STAT1300 – Fundamentals of Statistics (10 units)	STAT1300 – Fundamentals of Statistics (10 units)	No change
MATH2310 – Calculus of Science and Engineering (10 units)	MATH2310 – Calculus of Science and Engineering (10 units)	No change

2022 Program Requirements	2023 Program Requirements	Equivalencies
MATH2340 – Linearity and Continuity 1 (10 units)	MATH2340 – Linearity and Continuity 1 (10 units)	No change
MATH2350 – Linearity and Continuity 2 (10 units)	MATH2350 – Linearity and Continuity 2 (10 units)	No change
SCIE2003 – Advanced Interdisciplinary Challenges (10 units)	SCIE2003 – Advanced Interdisciplinary Challenges (10 units)	No change
STAT2020 – Predictive Analytics (10 units)	STAT2020 – Predictive Analytics (10 units)	No change
SCIE3003A – Advanced Transdisciplinary Capstone: Planning and Implementing (10 units)		Discontinued Students who have not successfully completed SCIE3003A/B must complete SCIE3003, plus an additional 10 units from a B Math major directed course list.
SCIE3003B – Advanced Transdisciplinary Capstone: Implementing and Communicating (10 units)		Discontinued Students who have successfully completed SCIE3003A and not completed SCIE3003B, will need to complete SCIE3003B in Semester 1 2023 (last offering of this course).
	SCIE3003 – Advanced Transdisciplinary Capstone (10 units)	New core course Students who have not successfully completed SCIE3003A/B must complete SCIE3003, plus an additional 10 units from a B Math major directed course list.
	Work Integrated Learning Placement MATH3600 – Work Integrated Learning for Mathematical Science (10 Units)	New core course Students who have not successfully completed SCIE3003A/B must complete SCIE3003, plus an additional 10 units from a B Math major directed course list or MATH3600. Students who self-select may complete MATH3600 as part of their program.
Programming Directed Courses (10 Units) Complete 10 units from the following directed courses.	Programming Directed Courses (10 Units) Complete 10 units from the following directed courses.	
ENGG1003 – Introduction of Procedural Programming (10 units)	ENGG1003 – Introduction of Procedural Programming (10 units)	No change
INFT1004 – Introduction to Programming (10 units)	INFT1004 – Introduction to Programming (10 units)	No change

Information is correct as of November 2022 and subject to change.

Program Code: 40212

CRICOS Code: 0100472

CRICOS Provider: 00109J

2022 Program Requirements	2023 Program Requirements	Equivalencies
SENG1110 – Object Orientation Programming (10 units)	SENG1110 – Object Orientation Programming (10 units)	No change
Pure and Applied Mathematics Major (60 Units)		
Compulsory Courses (20 Units) Complete the following compulsory courses to fulfil the requirements of this major	Compulsory Courses (20 Units) Complete the following compulsory courses to fulfil the requirements of this major	
MATH2242 – Complex Analysis (10 units)	MATH2242 – Complex Analysis (10 units)	No change
MATH2800 – Ordinary Differential Equations (10 units)	MATH2800 – Ordinary Differential Equations (10 units)	No change
Directed Courses (40 Units) Complete 40 units from the following directed courses.	Directed Courses (40 Units) Complete 40 units from the following directed courses.	
MATH3120 – Algebra (10 units)	MATH3120 – Algebra (10 units)	No change
MATH3170 – Number Theory (10 units)	MATH3170 – Number Theory (10 units)	No change
MATH3205 – Fourier Analysis (10 units)	MATH3205 – Fourier Analysis (10 units)	No change
MATH3700 – Partial Differential Equations (10 units)	MATH3700 – Partial Differential Equations (10 units)	No change
MATH3820 – Numerical Methods (10 units)	MATH3820 – Numerical Methods (10 units)	No change
Statistics Major (60 Units)		
Compulsory Courses (60 Units) Complete the following compulsory courses to fulfil the requirements of this major	Compulsory Courses (60 Units) Complete the following compulsory courses to fulfil the requirements of this major	
STAT2000 – Applied Statistics and Research Methods (10 units)	STAT2000 – Applied Statistics and Research Methods (10 units)	No change
STAT2300 – Statistical Inference (10 units)	STAT2300 – Statistical Inference (10 units)	No change
STAT3030 – Generalised Linear Models (10 units)	STAT3030 – Generalised Linear Models (10 units)	No change
STAT3040 – Forecasting with Linear Time Series Models (10 units)	STAT3040 – Forecasting with Linear Time Series Models (10 units)	No change

Information is correct as of November 2022 and subject to change.

Program Code: 40212

CRICOS Code: 0100472

CRICOS Provider: 00109J

2022 Program Requirements	2023 Program Requirements	Equivalencies
STAT3100 – Systems Thinking for an Integrated Workforce (10 units)	STAT3100 – Systems Thinking for an Integrated Workforce (10 units)	No change
STAT3800 – Deterministic and Stochastic Optimisation (10 units)	STAT3800 – Deterministic and Stochastic Optimisation (10 units)	No change
Studies in Mathematics and Statistics Major (60 Units)		
2000 Level Directed Courses (20 Units) Complete 20 units from the following directed courses.	2000 Level Directed Courses (20 Units) Complete 20 units from the following directed courses.	
MATH2242 – Complex Analysis (10 units)	MATH2242 – Complex Analysis (10 units)	No change
MATH2800 – Ordinary Differential Equations (10 units)	MATH2800 – Ordinary Differential Equations (10 units)	No change
STAT2000 – Applied Statistics and Research Methods (10 units)	STAT2000 – Applied Statistics and Research Methods (10 units)	No change
STAT2300 – Statistical Inference (10 units)	STAT2300 – Statistical Inference (10 units)	No change
3000 Level Directed Courses (40 Units) Complete 40 units from the following directed courses.	3000 Level Directed Courses (40 Units) Complete 40 units from the following directed courses.	
MATH3120 – Algebra (10 units)	MATH3120 – Algebra (10 units)	No change
MATH3170 – Number Theory (10 units)	MATH3170 – Number Theory (10 units)	No change
MATH3205 – Fourier Analysis (10 units)	MATH3205 – Fourier Analysis (10 units)	No change
MATH3700 – Partial Differential Equations (10 units)	MATH3700 – Partial Differential Equations (10 units)	No change
MATH3820 – Numerical Methods (10 units)	MATH3820 – Numerical Methods (10 units)	No change
STAT3030 – Generalised Linear Models (10 units)	STAT3030 – Generalised Linear Models (10 units)	No change
STAT3040 – Forecasting with Linear Time Series Models (10 units)	STAT3040 – Forecasting with Linear Time Series Models (10 units)	No change
STAT3100 – Systems Thinking for an Integrated Workforce (10 units)	STAT3100 – Systems Thinking for an Integrated Workforce (10 units)	No change

Information is correct as of November 2022 and subject to change.

Program Code: 40212

CRICOS Code: 0100472

CRICOS Provider: 00109J

2022 Program Requirements	2023 Program Requirements	Equivalencies
STAT3800 – Deterministic and Stochastic Optimisation (10 units)	STAT3800 – Deterministic and Stochastic Optimisation (10 units)	No change
<p>Electives (40 Units) Complete 40 units of electives to fulfil the requirements of this program. Students who do not meet the enrolment requisite for MATH1110 must take MATH1002 Foundational Studies in Mathematics. For these students MATH1002 will count for 10 units of electives. Students undertaking this pathway will need to be aware of the 1000 level unit restrictions when enrolling in their remaining elective courses. Electives can be used to extend and complement your core studies with more courses in the same field of study, or from areas that might be of interest to you. Electives can be chosen from all courses available at the University that do not have any other conditions (such as a course requisite) applied to them.</p>	<p>Electives (40 Units) Complete 40 units of electives to fulfil the requirements of this program. Students who do not meet the enrolment requisite for MATH1110 must take MATH1002 Foundational Studies in Mathematics. For these students MATH1002 will count for 10 units of electives. Students undertaking this pathway will need to be aware of the 1000 level unit restrictions when enrolling in their remaining elective courses. Electives can be used to extend and complement your core studies with more courses in the same field of study, or from areas that might be of interest to you. Electives can be chosen from all courses available at the University that do not have any other conditions (such as a course requisite) applied to them.</p>	No change

If you have any questions regarding your remaining program, please email ProgramAdvice@newcastle.edu.au.