

PROGRAM PLAN

BACHELOR OF MATHEMATICS/BACHELOR OF SCIENCE

To be eligible to graduate make sure you have completed 320 units (10 units = 1 course unless otherwise specified) which meet the following criteria:

- Core courses – 100 units.
- A 10 unit Bachelor of Mathematics programming directed course.
- Mathematics Major – 80 units, with a minimum of 40 units at 3000 level. 20 units of 1000 level Math Directed will count toward the Mathematics Major.
- Standard Pathway – includes MATH1210 and MATH1220.
- Physics Major – 120 units (20 units of 1000 level Math Directed will count toward the Physics Major, and MATH2310)
- Electives - 40 units. Electives can be chosen from Science Elective Pathways or any unrestricted courses offered within the university. Refer to the Science Elective Pathway Documents located on the [Program Handbook](#) or visit the [Course Handbook](#) to see a list of available Electives.
- Students must not exceed 120 units at 1000 level in this program.
- The duration of this program is 4 year full-time (40 units per semester) or part-time equivalent.
- The maximum time to complete this program is 10 years.



Some courses have assumed knowledge and/or requisites, please refer to the individual [Course Handbook](#). Please refer to the [Program Handbook](#) for specific information on program structure. If you are intending varying from this program plan please seek advice from your [Program Advisor](#).

PROGRAM PLAN

BACHELOR OF MATHEMATICS/BACHELOR OF SCIENCE

B SCIENCE MAJOR

PHYSICS MAJOR

COMPULSORY COURSES

PHYS1210: Advanced Physics I
PHYS1220: Advanced Physics II
MATH2310: Calculus of Science and Engineering
PHYS2111: Classical Physics 1
PHYS2112: Classical Physics 2
PHYS2211: Modern Physics 1
PHYS3111: Biophysics
PHYS3112: Photonics
PHYS3211: Quantum Information Science

DIRECTED COURSES

Students without sufficient mathematical background must complete MATH1002 prior to MATH1110

DIRECTED COURSES – LIST A

Complete 10 units from:

MATH1110: Mathematics for Engineering, Science and Technology 1
MATH1210: Mathematical Discovery 1

DIRECTED COURSES – LIST B

Complete 10 units from:

MATH1120: Mathematics for Engineering, Science and Technology 2
MATH1220: Mathematical Discovery 2

DIRECTED COURSES – LIST C

Complete 10 units from:

MATH3242: Complex Analysis
MATH3820: Numerical Methods

DIRECTED MATH PROGRAMMING COURSE

DIRECTED COURSES

Complete 10 units from:

ENGG1003: Introduction to Procedural Programming
INFT1004: Introduction to Programming
SENG1110: Object Oriented Programming

B MATHEMATICS MAJORS

APPLIED MATHEMATICS MAJOR

COMPULSORY COURSES

Complete the following compulsory courses:

MATH2330: Analysis
MATH2800: Ordinary Differential Equations

DIRECTED COURSES – 3000 LEVEL

Complete 40 units from:

MATH3210: Directed Studies in Mathematics
MATH3242: Complex Analysis
MATH3700: Partial Differential Equations
MATH3800: Optimisation
MATH3820: Numerical Methods
MATH3840: Optimisation in Business and Industry
MATH3850: Industrial Project

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BACHELOR OF MATHEMATICS/BACHELOR OF SCIENCE

PURE MATHEMATICS MAJOR

COMPULSORY COURSES

Complete the following compulsory course:

MATH2330: Analysis

DIRECTED COURSES – 2000 LEVEL

Complete 10 units from:

MATH2600: Introduction to Modern Mathematical Computation
MATH2800: Ordinary Differential Equations

DIRECTED COURSES – 3000 LEVEL

Complete 40 units from:

MATH3010: Logic and Set Theory
MATH3120: Algebra
MATH3170: Number Theory
MATH3180: Topology
MATH3205: Fourier Analysis
MATH3210: Directed Studies in Mathematics
MATH3242: Complex Analysis
MATH3510: Combinatorics and Graph Theory
MATH3700: Partial Differential Equations
MATH3820: Numerical Methods

STATISTICS MAJOR

COMPULSORY COURSES

Complete the following compulsory courses:

STAT2000: Applied Statistics and Research Methods
STAT2020: Predictive Analytics
STAT3010: Statistical Inference

DIRECTED COURSES

Complete 30 units from:

STAT3030: Generalised Linear Models
STAT3040: Time Series Analysis
STAT3100: Systems Thinking for an Integrated Workforce
STAT3120: Applied Bayesian Methods
STAT3170: Surveys and Experiments

STUDIES IN MATHEMATICS AND STATISTICS MAJOR

COMPULSORY COURSES

Complete 20 units, including at least one of MATH2330 or STAT2000 from:

MATH2330: Analysis
MATH2600: Introduction to Modern Mathematical Computation
MATH2800: Ordinary Differential Equations
STAT2000: Applied Statistics and Research Methods
STAT2020: Predictive Analytics

DIRECTED COURSES

Complete 40 units from:

MATH3120: Algebra
MATH3170: Number Theory
MATH3180: Topology
MATH3205: Fourier Analysis
MATH3210: Directed Studies in Mathematics
MATH3242: Complex Analysis
MATH3400: Research Topics in Mathematics
MATH3510: Combinatorics and Graph Theory
MATH3700: Partial Differential Equations
MATH3800: Optimisation
MATH3820: Numerical Methods
MATH3840: Optimisation in Business and Industry
MATH3850: Industrial Project
STAT3010: Statistical Inference
STAT3030: Generalised Linear Models
STAT3040: Forecasting with Linear Time Series Models
STAT3100: Systems Thinking for an Integrated Workforce
STAT3120: Applied Bayesian Methods
STAT3170: Surveys and Experiments
STAT3990: Topics in Statistics