

Bachelor of Mathematical Sciences

1 General

There shall be a degree of Bachelor of Mathematical Sciences and an Honours degree of Bachelor of Mathematical Sciences. A candidate may obtain either degree or both.

2 Duration of program

The program of study for the Bachelor degree shall extend over three years of full-time study or the equivalent part-time study.

3 Assessment and examinations

3.1 A candidate shall not be eligible to attend for examination unless the prescribed work has been completed to the satisfaction of the teaching staff concerned.

3.2 In determining a candidate's final result in a course (or part of a course) the examiners may take into account oral, written, practical and other work, provided that the candidate has been given adequate notice at the commencement of the teaching of the course of the way in which such work will be taken into account and of its relative importance in the final result.

3.3 There shall be four classifications of pass in the final assessment of any course for the Bachelor degree, as follows: Pass with High Distinction, Pass with Distinction, Pass with Credit, Pass.

3.4 A candidate who fails a course for the Bachelor degree and who desires to take that course again shall, unless exempted wholly or partially therefrom by the Head of the School concerned, again complete the required work in that course to the satisfaction of the teaching staff concerned.

3.5 A candidate who has twice failed any course for the Bachelor degree may not enrol for that course again or for any other course which in the opinion of the Faculty contains a substantial amount of the same material, except by permission of the Faculty and then only under such conditions as the Faculty may prescribe.

4 Qualification requirements

4.1 General: Bachelor of Mathematical Sciences

4.1.1 To qualify for the Bachelor degree a candidate shall, subject to the conditions and modifications specified under 3.3 above, pass courses from 4.2 below to the value of at least 72 units which satisfy the following requirements:

a A candidate shall pass Level I courses to the value of at least 18 units including:

COMP SCI 1012 Scientific Computing	3
MATHS 1008 Mathematics for Information Technology I.....	3
MATHS 1011 Mathematics IA	3
MATHS 1012 Mathematics IB	3
STATS 1005 Statistical Analysis & Modelling I	3

b A candidate shall pass Level II courses to the value of at least 21 units including:

MATHS 2100 Real Analysis	3
MATHS 2101 Multivariable & Complex Calculus	3
MATHS 2102 Differential Equations	3
MATHS 2103 I Probability and Statistics	3

Electives may be chosen from courses offered by Mathematical Sciences, Computer Science, Humanities and Social Sciences (these will be Advanced level courses), Economics, Commerce and Sciences

c A candidate shall pass Level III courses to the value of at least 24 units including:

i at least 18 units of study chosen from Applied Mathematics, and/or Pure Mathematics, and/or Statistics	18
ii Communication Skills III.....	3

Other courses may also be chosen from 4.2.3.3, 4.2.3.4, 4.2.3.5, 4.2.3.6 below.

4.1.2 A graduate who wishes to qualify for the degree of Bachelor of Mathematical Sciences and to count towards that degree courses which have already been presented for another degree may do so providing such a candidate presents a range of courses which fulfils the requirements of 4.1.1 above, and undertakes Level II and III courses to the value of at least 24 units from 4.2.2 and 4.2.3 below that have not been presented for any other degree. Of these 24 units, 21 must comprise Level III courses.

4.1.3 No candidate will be permitted to count for the degree any course together with any other course which, in the opinion of the Faculty, contains a substantial amount of the same material; and no course may be counted twice towards the degree. No candidate may present the same section of a course in more than one course for the degree.

4.1.4 Except with permission of the Faculty, students who have completed at another institution part of the equivalent of the requirements for the Adelaide degree of Bachelor of Mathematical Sciences will be required as a minimum to complete Level III courses from 4.2.3 with an aggregate units value of 24.

4.1.5 With special permission of the Faculty a student who has completed most of the courses for the degree of Bachelor of Mathematical Sciences at the University of Adelaide including Level III courses with an aggregate units value of 12 may be permitted to complete the requirements for the degree at another institution. All applications must be made in writing to the Faculty.

4.1.6 To complete a major in a Mathematical Sciences discipline, a candidate shall satisfy the criteria specified below and present Pass or better in the required courses.

Applied Mathematics

Level III courses offered in Applied Mathematics to the value of at least 12 units.

Mathematical Sciences

Candidates who do not otherwise qualify for a major in Applied Mathematics, Pure Mathematics or Statistics and who have successfully completed at least 12 units of Level III courses offered across those disciplines will qualify for the award of a major in Mathematical Sciences.

Pure Mathematics

Level III courses offered in Pure Mathematics to the value of at least 12 units.

Statistics

Level III courses in Statistics to the value of at least 12 units, including STATS 3001 Statistical Modelling III, and STATS 3006 Mathematical Statistics III, and at least 3 units chosen from:

APP MTH 3001 Applied Probability III*

APP MTH 3016 Random Processes III*

STATS 3003 Sampling Theory and Practice III

STATS 3005 Time Series III

STATS 3008 Biostatistics III

* These courses may be presented towards a major in Statistics or a major in Applied Mathematics but not both.

4.1.7 To complete a double major in Mathematical Sciences disciplines, a candidate shall satisfy the criteria specified below and present Pass or better in the required courses:

Applied Mathematics and Pure Mathematics

Level III courses offered in Applied Mathematics to the value of at least 12 units and Level III courses offered in Pure Mathematics to the value of at least 9 units.

Applied Mathematics and Statistics

Level III courses offered in Applied Mathematics to the value of at least 12 units and Level III courses offered in Statistics to the value of at least 9 units.

Pure Mathematics and Applied Mathematics

Level III courses offered in Pure Mathematics to the value of at least 12 units and Level III courses offered in Applied Mathematics to the value of at least 9 units including STATS 3001 Statistical Modelling III and STATS 3006 Mathematical Statistics III.

Pure Mathematics and Statistics

Level III courses offered in Pure Mathematics to the value of at least 12 units including STATS 3001 Statistical Modelling III and STATS 3006 Mathematical Statistics III, and Level III courses offered in Statistics to the value of at least 9 units.

Statistics and Applied Mathematics

Level III courses offered in Statistics to the value of at least 12 units including STATS 3001 Statistical Modelling III and STATS 3006 Mathematical Statistics III, and Level III courses offered in Applied Mathematics to the value of at least 9 units.

Statistics and Pure Mathematics

Level III courses offered in Statistics to the value of at least 12 units including STATS 3001 Statistical Modelling III and STATS 3006 Mathematical Statistics III, and Level III courses offered in Pure Mathematics to the value of at least 9 units.

4.2 Program of study for the degree of Bachelor of Mathematical Sciences

Notwithstanding the Academic Program Rules and syllabuses published in this volume, a number of the courses listed in the program leading to the degree of Bachelor of Mathematical Sciences may not be offered within a given calendar year.

4.2.1 Level I courses

4.2.1.1 Mathematical Sciences courses

MATHS 1008 Mathematics for Information Technology I	3
MATHS 1011 Mathematics IA	3
MATHS 1012 Mathematics IB	3
STATS 1005 Statistical Analysis and Modelling I.....	3

4.2.1.2 Computer Science courses

COMP SCI 1012 Scientific Computing	3
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COMP SCI 1003 Internet Computing	3
COMP SCI 1102 Object Oriented Programming.....	3
COMP SCI 1103 Algorithm Design & Data Structures.....	3
4.2.1.3 Humanities and Social Sciences courses	
Level I courses listed for the degree of B.A. and approved by the Faculty Program Adviser.	
4.2.1.4 Economics and Commerce courses	
Courses listed for the degree of B.Ec. and approved by the Faculty Program Adviser.	
4.2.1.5 Science courses	
Level I Science courses listed for the degree of B.Sc. in the Faculty of Sciences.	
4.2.1.6 Design Studies courses	
Level I Design Studies courses listed for the degree of Bachelor of Design Studies.	
4.2.2 Level II courses	
4.2.2.1 Mathematical Sciences courses	
<i>Applied Mathematics</i>	
APP MTH 2105 Optimisation and Operations Research	3
MATHS 2104 Numerical Methods	3
<i>Mathematical Physics</i>	
PHYSICS 2532 Classical Physics II	3
PHYSICS 2534 Electromagnetism II	3
<i>Mathematics</i>	
MATHS 2100 Real Analysis	3
MATHS 2101 Multivariable & Complex Calculus	3
MATHS 2102 Differential Equations	3
MATHS 2103 Probability and Statistics	3
<i>Pure Mathematics</i>	
PURE MTH 2106 Algebra	3
<i>Statistics</i>	
STATS 2107 Statistical Modelling & Inference	3
4.2.2.2 Computer Science	
COMP SCI 2000 Computer Systems.....	3
COMP SCI 2002 Database & Information Systems.....	3
COMP SCI 2004 Data Structures & Algorithms	3
COMP SCI 2005 Systems Programming C and C++	3
COMP SCI 2006 Introduction to Software Engineering	3
4.2.2.3 Humanities and Social Sciences courses	
Advanced level courses or Level II language courses listed for the degree of B.A. and approved by the Faculty Program Adviser.	
4.2.2.4 Economics and Commerce courses	
Level II courses listed for the degree of B.Ec. and approved by the Faculty Program Adviser.	
4.2.2.5 Science courses	
Level II Science courses listed for the degree of B.Sc. in the Faculty of Sciences	
4.2.3 Level III courses	
4.2.3.1 Mathematical Sciences courses	
<i>Applied Mathematics</i>	
APP MTH 3000 Computational Mathematics III.....	3
APP MTH 3001 Applied Probability III	3
APP MTH 3002 Fluid Mechanics III	3
APP MTH 3004 Mathematical Biology III	3
APP MTH 3010 Variational Methods & Optimal Control III.....	3
APP MTH 3012 Financial Modelling: Tools & Techniques III	3
APP MTH 3013 Differential Equations III.....	3
APP MTH 3014 Optimisation III.....	3
APP MTH 3016 Random Processes III	3
APP MTH 3017 Waves III.....	3

APP MTH 3019 Mathematical Modelling in Nanotechnology III	3
APP MTH 3020 Stochastic Decision Theory III	3
<i>Mathematical Physics</i>	
PHYSICS 3004 Quantum Mechanics IIIA	3
PHYSICS 3006 Advanced Dynamics and Relativity III.....	3
PHYSICS 3542 Physics III	6
<i>Pure Mathematics</i>	
PURE MTH 3002 Topology and Analysis III	3
PURE MTH 3003 Number Theory III	3
PURE MTH 3007 Groups and Rings III.....	3
PURE MTH 3009 Integration and Analysis III.....	3
PURE MTH 3012 Fields and Geometry III	3
PURE MTH 3018 Coding and Cryptology III	3
PURE MTH 3019 Complex Analysis III.....	3
PURE MTH 3020 Methods of Modern Mathematics III.....	3
PURE MTH 3021 Logic and Computability	3
PURE MTH 3022 Geometry of Surfaces III	3
<i>Statistics</i>	
STATS 3001 Statistical Modelling III.....	3
STATS 3003 Sampling Theory and Practice III.....	3
STATS 3005 Time Series III.....	3
STATS 3006 Mathematical Statistics III	3
STATS 3008 Biostatistics III	3
4.2.3.2 Miscellaneous (non Maths & Comp Sc courses)	
MATHS 3015 Communication Skills III	3
4.2.3.3 Computer Science	
COMP SCI 3001 Computer Networks & Applications.....	3
COMP SCI 3002 Programming Techniques.....	3
COMP SCI 3004 Operating Systems.....	3
COMP SCI 3005 Computer Architecture.....	3
COMP SCI 3006 Software Engineering & Project	3
COMP SCI 3007 Artificial Intelligence	3
COMP SCI 3009 Advanced Programming Paradigms	3
COMP SCI 3012 Distributed Systems	3
COMP SCI 3013 Event Driven Computing	3
COMP SCI 3014 Computer Graphics	3
4.2.3.4 Humanities and Social Sciences courses	
Advanced Level or Level III Language courses listed for the degree of B.A, and approved by the Faculty Program Adviser.	
4.2.3.5 Economics and Commerce courses	
Level III courses listed for the degree of B.Ec. and approved by the Faculty Program Adviser.	
4.2.3.6 Science courses	
Level III Science courses listed for the degree of B.Sc. in the Faculty of Sciences.	
4.3 The Honours degree of Bachelor of Mathematical Sciences	
To be eligible to be admitted to an Honours degree program, a candidate shall complete the requirements for a Bachelor degree or equivalent to a standard that is acceptable to the Faculty for the purpose of admission to the Honours degree. A candidate who satisfies the requirements for Honours shall be awarded the Honours degree, but the Faculty shall decide within which of the following classes and divisions the degree shall be awarded:	
1	First Class
2A	Second Class div A
2B	Second Class div B
3	Third Class
NAH	Not awarded.
4.3.1 The Honours degree of Bachelor of Mathematical Sciences	

4.3.1.1 A candidate may, subject to the approval of the Head of the Discipline concerned, proceed to the Honours degree in one of the following courses, each with the value of twenty-four units:

APP MTH 4015A/B Honours Applied Mathematics

APP MTH 4017A/B Honours Applied Mathematics and Statistics

MATHS 4000A/B Honours Mathematical Sciences

PHYSICS 4001A/B Honours Mathematical Physics

PURE MTH 4001A/B Honours Pure Mathematics and Statistics

PURE MTH 4002A/B Honours Mathematical Physics and Pure Mathematics

PURE MTH 4003A/B Honours Pure and Applied Mathematics

PURE MTH 4005A/B Honours Pure Mathematics

STATS 4000A/B Honours Statistics

4.3.1.2 A candidate may, subject to the approval of the Faculty in each case, proceed to the Honours degree in a program taught in a school in another faculty. Such candidates must consult the Head of the School concerned and apply in writing to the Faculty for admission to the Honours program.

4.3.1.3 The work of the Honours program must be completed in one year of full-time study, save that on the recommendation of the Head of the School concerned, the Faculty may permit a candidate to spread the work over two years, but no more, under such conditions as it may determine.

4.3.1.4 A candidate may not enrol a second time for the Honours program in the same course if he/she:

a has already qualified for Honours in that course,

or

b has presented himself/herself for examination in that course but has failed to obtain Honours,

or

c has withdrawn from the program unless the Faculty under 4.3.1.5 permits re-enrolment.

4.3.1.5 If a candidate is unable to complete the program for the Honours degree within the time allowed, or if a candidate's work is unsatisfactory at any stage of the program, or if a candidate withdraws from the program, such fact shall be reported to Faculty. The Faculty may permit the candidate to re-enrol for an Honours degree under such conditions (if any) as it may determine.

4.4 Graduation

Subject to Chapter 89 of the Statutes, candidates who have satisfied the requirements for any award of the University shall be admitted to that award.

5 Special circumstances

When in the opinion of the relevant Faculty special circumstances exist, the Council, on the recommendation of the Faculty in each case, may vary any of the provisions of the Academic Program Rules for any particular award.