

The Degree of Bachelor of Science (BSc – 360 points)

These regulations must be read in conjunction with the General Regulations for the University.

1. Version

These Regulations came into force on 1 January 2020.

2. Variations

In exceptional circumstances the Amo Pūtaiao | Academic Dean of Science may approve a personal programme of study which does not conform to these Regulations.

3. The structure of the qualification

- (a) To qualify for the Degree of Bachelor of Science a student must:
 - i. be credited with a minimum of 360 points towards the qualification; and
 - ii. be credited with the course listed in Schedule C to these Regulations and
 - iii. satisfy the requirements for a major as listed in Schedule S to these Regulations and may optionally satisfy the requirements for a minor as listed in Schedule S to these Regulations or those minors provided for in the General Conditions for Credit Regulations.
- (b) At least 255 of the 360 points must be from courses listed in Schedule V of these Regulations; and up to 105 of the 360 points may be for courses from any degree of the University.
- (c) In addition to these requirements a student must be credited with courses to the value of:
 - i. at least 225 points above 100-level and
 - ii. at least 90 points at 300-level.

4. Admission to the qualification

A student must satisfy the Admission Regulations for the University to be admitted to this qualification.

5. Subjects

- (a) The Degree of Bachelor of Science must be awarded in at least one of the subject areas listed in Schedule S to the Regulations for this degree.
- (b) This qualification may be endorsed in the following subject(s): Biosecurity, Biotechnology and Ecology. Requirements for these are given in the Schedule of Endorsements of these Regulations.
- (c) Any given course that is listed as a majoring requirement in Schedule S to these Regulations at 200 or 300-level may only be counted towards one major or minor.
- (d) In addition, this qualification may be awarded with a minor as stipulated in Schedule S to the Regulations for this degree.
- (e) Any major and minor must be in separate subject areas as listed in Schedule S.
- (f) Any given course must contribute to only one major or minor.

6. Time limits

The qualification adheres to the General Regulations for the University with a time limit of 10 years.

7. Transfers of credit, substitutions and cross-credits

This qualification adheres to the Credit Recognition and Transfer Regulations, with the following stipulations:

- (a) Cross-credits between the BE(Hons) and BSc
In order to be awarded both qualifications, a student who studies the BE(Hons) and BSc concurrently:
 - i. must obtain 180 points above 100-level from the Schedule to these Regulations which have not been credited to the BE(Hons), or used to obtain exemption from a course in that degree. Of these points, at least 90 must be at 300-level and must include at least 60 points for a single subject major;
 - ii. may also be required to complete 100-level prerequisite courses from the Schedule to these Regulations, if admitted directly into the BE(Hons) First Professional Year and their qualifications on entry to the University were not in appropriate subjects;
 - iii. must have passed all subjects and met the requirements of a BE(Hons) to be eligible to graduate BSc under this cross credit Regulation.
- (b) Cross Credits and Substitution between BSc and BForSc

A student for the BSc who is, or has been enrolled for BForSc must:

- i. obtain 180 points above 100-level in courses selected from the Schedule to these Regulations which have not been credited or used to obtain exemption from the BForSc. Of these points, 90 must be from 300-level courses and at least 60 from a single subject major.
- ii. A student must have met the requirements of a BForSc to be eligible to graduate BSc under this cross credit Regulation.

(c) Credit for the Bachelor of Nursing

A student who has completed a Bachelor of Nursing may be credited with up to 75 points at 100-level which will be considered as equivalent to University courses under Regulation 3(a).

8. Progression

This qualification adheres to the General Regulations for progression and direct entry with no additional stipulations.

9. Honours, Distinction and Merit

Honours, Distinction and Merit are not awarded for the qualification.

10. Exit and Upgrade Pathways to other Qualifications

- (a) There are no advancing qualifications for this degree.
- (b) A student for the BSc who has not met the requirements for the degree but who has satisfied all requirements for the Certificate in Science or Graduate Diploma in Science may apply to the Amo Pūtaiao Academic Dean of Science to withdraw from the degree and be awarded the alternate qualification.

11. Transition regulation

A student who enrolled in the Degree of Bachelor of Science for the first time prior to 1 January 2018 is not required to include a course from Schedule C in their degree.

Schedule C: Compulsory Courses for the Degree of Bachelor of Science

For full course information, go to www.canterbury.ac.nz/courses

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
SCIE 101	Science, Society and Me	15	S2	Campus	

Schedule S: Major and Minor requirements for the Degree of Bachelor of Science

Group 1: Major and Minor requirements

Astronomy

Major

100-level

Required: ASTR 112, PHYS 101, PHYS 102, MATH 102, MATH 103. PHYS 101 is offered in Semesters 1 and 2 and PHYS 102 is offered in Semester 2 and as a Summer Course.

Strongly recommended: MATH 170 or COSC 121.

200-level

Required: (1) ASTR 211 or ASTR 212; (2) PHYS 285; (3) 45 points from PHYS 201-209; (4) MATH 201.

Strongly recommended: MATH 202 and/or MATH 203.

300-level

Required: (1) ASTR 323 or ASTR 325 or ASTR 326; (2) PHYS 310, ASTR 381; (3) 15 points from PHYS 311-313.

Note: A student who has taken PHYS 204 is exempt from taking PHYS 310, but must select an additional 15 points from PHYS 301-379, ASTR 301-379.

Required for postgraduate: A student intending to proceed to BSc(Hons) or MSc in Physics, Medical Physics or Astronomy should take (1) an additional two courses from 300-level PHYS or ASTR; and (2) an additional two courses from 300-level MATH or STAT. All advancing students should take PHYS 311, PHYS 313, and PHYS 326.

Minor

A student intending to minor in Astronomy must be credited with the following:

At least 75 points in Astronomy or Physics, including at least 45 points at 200-level or above.

Biochemistry

Major

100-level

Required: BIOL 111 (BCHM 111) and BCHM 112 (CHEM 112).

Recommended: BIOL 112, BIOL 113, and CHEM 111.

200-level

Required: BCHM 202 (BIOL 231), BCHM 212 (CHEM 212), BCHM 222, BCHM 253 (BIOL 253) and either BCHM 281, or CHEM 281.

Recommended: BCHM 206 (CHEM 242).

300-level

Required: 60 points from BCHM 301, BCHM 302, BCHM 305, BCHM 306, BCHM 338 and BCHM 339.

Required for postgraduate study: BCHM 381.

Recommended for honours: At least one of CHEM 301-399, BIOL 313, BIOL 333, BIOL 335, BIOL 351, BIOL 353, BIOL 354.

Minor

A student intending to minor in Biochemistry must be credited with the following:

At least 75 points in Biochemistry including at least 45 points at 200-level or above.

Biological Sciences

Major

100-level

Required: BIOL 111 (BCHM 111) and BIOL 112 and BIOL 113 and STAT 101 (or an excellence endorsement in NCEA Level 3 Mathematics).

Recommended: 15 points of 100-level Chemistry; and 15 points of 100-level Mathematics. A student who has not taken chemistry in Year 13 should take 100-level Chemistry (eg, CHEM 114). A student who has not taken mathematics with calculus in Year 13 should take 100-level Mathematics (eg, MATH 101).

200-level

Required: BIOL 209, or equivalent background (eg, STAT 201/222 or PSYC 206).

Required for honours: Biotechnology: BIOL 252 or BIOL 254, and as specified below.

300-level

Required: at least 60 points from 300-level courses selected from: BCHM 305, BCHM 306, and BIOL courses (excluding BIOL 309).

Required for honours: at least 60 points from 300-level courses selected from: BCHM 305, BCHM 306, and BIOL courses, and including the courses as specified below:

Biotechnology: BIOL 352 and at least 45 points from BIOL 313, BIOL 330, BIOL 333, BIOL 335

Cellular and Molecular Biology: at least 60 points from BCHM 305, BCHM 306, BIOL 313, BIOL 333, BIOL 351, BIOL 352

Ecology: 60 points from BIOL 370-384; and BIOL 309 or equivalent

Microbiology: BIOL 313 and at least 45 points from BIOL 330, BIOL 333, BIOL 335, BIOL 352

A student who is considering 400-level study must normally have gained 90 points in 300-level BIOL.

A student admitted to the honours programme or intending to proceed to a master's degree should consider including BIOL 309 (or equivalent).

Minor

A student intending to minor in Biology must be credited with the following:

At least 75 points in Biology including at least 45 points at 200-level or above.

Chemistry

Major

100-level

Required: CHEM 111 and CHEM 112 (BCHM 112).

200-level

Required: CHEM 211, either CHEM 212 or BCHM 212, CHEM 251, either CHEM 281 or BCHM 281, and either CHEM 242 or BCHM 206.

300-level

Required: 60 points from CHEM 300-level courses, BCHM 338 and BCHM 339, including at least one of CHEM 381 and CHEM 382.

Required for postgraduate study: 60 points from CHEM 321–373, BCHM 338 and BCHM 339, plus at least one of CHEM 381 or CHEM 382.

Students may not complete a double major in Medicinal Chemistry and Chemistry.

Minor

A student intending to minor in Chemistry must be credited with the following:

At least 75 points in Chemistry, including at least 45 points at 200-level or above. CHEM 114 may not be counted in the minor.

Computer Science

Major

100-level

Required: COSC 122, MATH 120, MATH 102, and one of (COSC 121, COSC 131).

Recommended: COSC 101, STAT 101.

200-level

Required: COSC 261 and 30 points from: COSC 262, COSC 264, COSC 265, ENCE 260, SENG 201.

300-level

Required: At least 60 points from the following list of courses: all COSC 300-level courses (except COSC 366), ENCE 360, ENCE 361, SENG 301, SENG 302, SENG 365, DATA 301.

Minor

A student intending to minor in Computer Science must be credited with the following:

At least 75 points from the Computer Science courses in Schedule V to these Regulations including at least 45 points at 200-level or above.

Data Science

Not open to new enrolments in 2021.

Major

100-level

Required: COSC 122, MATH 102, MATH 120, STAT 101, and one of (COSC 121, COSC 131).

200-level

Required: COSC 262, COSC 265, DATA 201, DATA 203, and any one course from STAT 211–299.

300-level

Required: COSC 367, DATA 301, MATH 303, STAT 318, STAT 315. With the permission of the Kaihautū Hōtaka Programme Director, a student who has a double major in Data Science and a second related subject may graduate with a minimum of 60 points from the list of required 300-level courses, one of which must be DATA 301.

Minor

There is no minor in Data Science.

Economics

Major

A student has not been credited with the MATH or STAT prerequisite courses shown in Te Rāangi Akoranga Course Catalogue may be admitted to courses if they have reached a standard satisfactory to the Tumuaki Tari | Head of Department in the prerequisites of other approved courses. Refer to the Economics Department for further information.

100-level

Required: ECON 104 and ECON 105.

Recommended: MATH 102 and MATH 103 and STAT 101.

Required for honours: MATH 102 and STAT 101.

200-level

Required:

- i. ECON 202 or ECON 207; and
- ii. ECON 203 or ECON 208; and
- iii. ECON 201 or ECON 206.

300-level

Required: At least 60 points of 300-level Economics.

Required for honours: ECON 321, 324, and 326.

Note: A student who enrolled in the BSc prior to 2015 may graduate under the 2014 regulations.

Minor

As specified in Schedule S to the Bachelor of Commerce.

Environmental Science

Major

100-level

Required: ENVR 101, GEOG 106, STAT 101 or MATH 102 or equivalent, plus a minimum of 30 points in a second major or as required by that major.

Recommended: SCIM 101.

200-level

Required: ENVR 201, GEOG 206, BIOL 209 or equivalent, plus a minimum of 30 points in a second major or as required by that major.

300-level

Required: ENVR 301, GEOG 309, plus a minimum of 60 points in a second major or as required by that major.

Minor

A student intending to minor in Environmental Science must be credited with the following:

STAT 101 and at least 60 points in Environmental Science including at least 45 points at 200-level or above.

*Finance***Major****100-level**

Required: (STAT 101 or MSCI 110), MATH 102, and (ACCT 102 or ACIS 102).

Strongly recommended: ECON 104, MATH 103.

200-level

Required: FINC 201 and FINC 203.

Recommended: FINC 205 and ECON 213 or 30 points from 200-level Statistics courses.

300-level

Required: FINC 331 and a further 45 points from 300-level Finance.

Minor

As specified in Schedule S to the Bachelor of Commerce.

*Financial Engineering***Major****100-level**

Required: COSC 122, ECON 104, MATH 102, MATH 103, STAT 101, and one of (COSC 121, COSC 131).

Recommended: ACCT 102 and INFO 125.

200-level

Required: ECON 213, FINC 201, (FINC 203 or ECON 207), MATH 201, SENG 201, (STAT 211 or STAT 221) and STAT 213.

Recommended: INFO 213.

300-level

Required: (FINC 311 or FINC 312), (FINC 331 or ECON 331) and (STAT 317 or ECON 323). Any other 300-level course from those listed in Schedule S for Financial Engineering.

Minor

There is no minor in Financial Engineering.

*Geography***Major****100-level**

Required: 30 points of 100-level Geography.

200-level

Required: 45 points of 200-level Geography.

Only one of GEOG 213 or GEOG 224 may count towards the required 45 points.

300-level

Required: 60 points of 300-level Geography.

Required for postgraduate study: Students intending to proceed to the BA(Hons), MA, BSc(Hons), PGDipSc, or MSc degree must have passed:

- i. 90 points in 300-level courses approved by the Tumuaki Kura, Te Kura Aronukurangi | Head of the School of Earth and Environment (including GEOG 309 and at least 30 other points in 300-level Geography courses), or
- ii. 120 points at 300-level of which 60 points are in Geography and 60 points are in subjects approved by the Tumuaki Kura | Head of School.

Minor

A student intending to minor in Geography must be credited with the following:

At least 75 points in Geography, including at least 45 points at 200-level or above.

*Geology***Major****100-level**

Required: GEOL 111, and either GEOL 113 or GEOL 115.

Required for honours:

Geology: 60 points from 100-level Astronomy, Biological Sciences, Chemistry, Computer Science, Geography, Mathematics, Physics or Statistics.

200-level

Required: 45 points from 200-level GEOL.

Recommended: GEOL 240 and GEOL 241.

300-level

Required: 60 points from 300-level Geology.

Recommended: GEOL 351 or GEOL 352.

Required for BSc(Hons) in Geology, PGDipSc in Geology, or MSc in Geology or PMEG in Engineering Geology: a minimum of 90 points of 300-level GEOL, including GEOL 351 and GEOL 352 (105 points are recommended). At least 15 points each of 100-level MATH and 100-level STAT, or a demonstrably equivalent standard in Mathematics, are a prerequisite for entry to 400-level ENGE.

Minor

A student intending to minor in Geology must be credited with the following:

At least 75 points in Geology, including at least 45 points at 200-level or above.

*Linguistics***Major**

A student intending to complete the BSc with a major in Linguistics must be credited with at least 135 points in Linguistics, which must include the following:

100-level

Required: 30 points at 100-level.

200-level

Required: 45 points at 200-level, which must include LING 215 and LING 217.

300-level

Required: 60 points at 300-level, which must include LING 310.

Required for postgraduate study: An average grade of at least B in all Linguistics courses beyond 100-level. A student must have at least 15 points in a language other than English. The required 15 points in a language other than English may be satisfied by proficiency in a language other than English at the discretion of the Kairuruku Hōtaka | Programme Coordinator.

Minor

A student intending to minor in Linguistics must be credited with the following:

At least 75 points in Linguistics, including at least 45 points at 200-level or above.

*Mathematics***Major****100-level**

Required: MATH 103, MATH 109, or MATH 199.

200-level

Required: 45 points from MATH 201, MATH 202, MATH 203, MATH 220, and MATH 240.

Note: *EMTH 210 may replace MATH 201, and, EMTH 211 may replace MATH 203.*

300-level

Required: 60 points from MATH 301-394.

Required for honours: An additional 30 points from MATH 301-394 or STAT 301-394 or other approved courses.

Recommended for honours: MATH 343.

Minor

A student intending to minor in Mathematics must be credited with the following:

At least 75 points in Mathematics including at least 45 points at 200-level or above.

*Medicinal Chemistry***Major****100-level**

Required: CHEM 111, either CHEM 112 or BCHM 112, either BCHM 111 or BIOL 111, BIOL 116.

200-level

Required: Either CHEM 212 or BCHM 212, either CHEM 281 or BCHM 281, either CHEM 242 or BCHM 206, and CHEM 246.

300-level

Required: CHEM 342, CHEM 346, CHEM 381, and CHEM 347.

Students may not complete a double major in Medicinal Chemistry and Chemistry.

Minor

There is no minor in Medicinal Chemistry.

Philosophy

Major

100-level

Recommended: 30 points of 100-level Philosophy (or equivalent).

Note: MATH 130 may be counted as Philosophy points towards a BSc in Philosophy.

200-level

Required: At least 45 points of 200-level Philosophy (or equivalent) including PHIL 233. A student may include HAPS 201, HAPS 202, HAPS 203, or HAPS 210.

300-level

Required: At least 60 points of 300-level Philosophy (or equivalent), including at least one of PHIL 305, PHIL 310, PHIL 311, or PHIL 317. A student may include HAPS 302 or HAPS 310.

Minor

A student intending to minor in Philosophy must be credited with the following:

At least 75 points in Philosophy, including at least 45 points at 200-level or above.

Physics

Major

100-level

Required: PHYS 101, PHYS 102, MATH 102, MATH 103. PHYS 101 is offered in Semesters 1 and 2 and PHYS 102 is offered in Semester 2 and as a Summer Course.

Strongly recommended: COSC 131 or COSC 121.

200-level

Required: (1) PHYS 285; (2) 45 points from PHYS 201-209; (3) MATH 201.

Strongly recommended: MATH 202 and/or MATH 203.

300-level

Required: PHYS 310, PHYS 311, PHYS 313, and PHYS 381.

Notes:

1. A student who has taken PHYS 204 is exempt from taking PHYS 310, but must select an additional 15 points from PHYS 301-379, ASTR 301-379;
2. A student may be permitted by the HOD to obtain a double major in Physics and Mathematics with PHYS 381 replaced by PHYS 326 as a required course.

Required for postgraduate: A student intending to proceed to BSc(Hons) or MSc in Physics, Medical Physics, or Astronomy should take (1) an additional two courses from 300-level PHYS or ASTR; and (2) an additional two courses from 300-level MATH or STAT. All advancing students should take PHYS 326.

Minor

A student intending to minor in Physics must be credited with the following:

At least 75 points in Physics, including at least 45 points at 200-level or above.

Psychology

Major

100-level

Required: PSYC 105 (15 points) and PSYC 106 (15 points).

200-level

Required: PSYC 206 (15 points) and at least three courses from PSYC 207-213 (15 points each).

300-level

Note: With the permission of the Tumuaki Kura | Head of School, a student who has a double major in Psychology and a second related subject may graduate with a minimum of 60 points in PSYC 300-level courses.

Required: 75 points of 300-level PSYC courses.

PSYC 344 is required for postgraduate study in Psychology and Applied Psychology.

PSYC 336 (or equivalent) is required for MSc in Applied Psychology.

PSYC 335 (or equivalent) is required for Postgraduate Diploma in Clinical Psychology.

Minor

A student intending to minor in Psychology must be credited with the following:

At least 75 points in Psychology, including at least 45 points at 200-level or above.

*Statistics***Major****100-level**

Required: MATH 103 or MATH 199. Either of these courses can be replaced with DATA 203.

200-level

Required: 45 points from STAT 201-294.

300-level

Required: At least 60 points from STAT 301-394.

Required for entry to honours: An additional 30 points from MATH 301-394 or STAT 301-394, or other approved courses.

Minor

A student intending to minor in Statistics must be credited with the following:

At least 75 points in Statistics (or from other relevant subjects with the approval of the Tumuaki Tari | Head of Department), including at least 45 points at 200-level or above.

Group 2: Endorsements

Closed to new enrolments.

Biosecurity

To qualify for an endorsement in Biosecurity a student must be enrolled for a Bachelor of Science in Biological Sciences and must complete the 360 point requirement for the BSc.

Required courses

The following courses are required for the endorsement:

100-level

BIOL 111 Cellular Biology and Biochemistry (15 points)

BIOL 112 Ecology, Evolution and Conservation (15 points)

BIOL 113 Diversity of Life (15 points) **and**

CHEM 114 Foundations of Chemistry (15 points) **or**

BCHM 112 Structure and Reactivity in Chemistry and Biochemistry (15 points)

STAT 101 Statistics 1

Total 100-level points required: 75 points

200-level

BIOL 209 Introduction to Biological Data Analysis (15 points) **or**

STAT 201 Applied Statistics (15 points) **or**

STAT 202 Regression Modelling (15 points) **and**

BIOL 231 Foundations in Molecular Biology (15 points)

BIOL 270 Ecology (30 points)

BIOL 271 Evolution (15 points)

BIOL 273 New Zealand Biodiversity and Biosecurity (15 points)

BIOS 201 Issues in New Zealand Biosecurity (15 points)

Total 200-level points required: 105 points

300-level

BIOL 332 Genetics and Evolution of Invasive Species (15 points)

BIOL 377 Global Change and Biosecurity (15 points) **and**

BIOL 352 Plant Development and Biotechnology (15 points)

Total 300-level points required: 45 points

Recommended courses

Students will normally follow one of two pathways: a molecular/genetics pathway or an ecological/applied pathway. Recommended courses should be selected from:

Molecular/genetics pathway

100-level

LAWS 101 The Legal System: Legal Method and Institutions

200-level

BIOL 203 Introduction to Forensic Biology

BIOL 213 Microbiology and Genetics

BIOL 254 Principles of Plant Physiology

CHEM 224 Analytical and Environmental Chemistry

ANTA 201 Antarctica and Global Change

POLS 206 Public Policy: An Introduction

300-level

BIOL 309 Experimental Design and Data Analysis for Biologists

BIOL 313 Advanced Molecular and Industrial Microbiology

BIOL 330 Advanced Concepts in Genetics

BIOL 333 Molecular Genetics

BIOL 335 Bioinformatics and Genomics

Ecological/applied pathway

100-level

LAWS 101 The Legal System

SCIM 101 Science, Māori and Indigenous Knowledge

200-level

BIOL 211 Insect Biology
 BIOL 212 Marine Biology
 BIOL 215 Plant Diversity and Systematics
 FORE 218 Forest Biology
 ANTA 201 Antarctica and Global Change
 POLS 206 Public Policy: An Introduction

300-level

BIOL 305 Practical Field Botany
 BIOL 309 Experimental Design and Data Analysis for Biologists
 BIOL 371 Evolutionary Ecology
 BIOL 384 Marine Ecosystems
 BIOL 375 Freshwater Ecosystems
 BIOL 378 Population Ecology and Conservation
 FORE 443 Biosecurity Risk Management
 FORE 444 Sustaining Native Biodiversity on Private Land

Biotechnology

To qualify for an endorsement in Biotechnology a student must be enrolled for a Bachelor of Science in Biological Sciences and must complete the 360 point requirement for the BSc.

Required courses

The following courses are required for the endorsement:

100-level

BIOL 111 Cellular Biology and Biochemistry
 BIOL 112 Ecology, Evolution and Conservation
 BIOL 113 Diversity of Life
 BCHM 112 Structure and Reactivity in Chemistry and Biochemistry
 STAT 101 Statistics 1
 Total 100-level required points: 75 points

200-level

BIOL 209 Introduction to Biological Data Analysis
 BIOL 213 Microbiology and Genetics
 BIOL 231 Foundations in Molecular Biology **or**
 BCHM 202 Molecular Genetics
 BIOL 271 Evolution
 BIOL 253 Cell Biology 1 **or**
 BIOL 254 Principles of Plant Physiology
 Total 100-level required points: 75 points

300-level

BIOL 352 Plant Development and Biotechnology **and**
 BIOL 313 Advanced Molecular and Industrial Microbiology

BIOL 333 Molecular Genetics

and a minimum of 30 points from the following:

BIOL 330 Advanced Concepts in Genetics

BIOL 332 Genetics and Evolution of Invasive Species

BIOL 335 Bioinformatics and Genomics

BIOL 351 Cell Biology

BIOL 371 Evolutionary Ecology

Total 300-level required points: 75 points

Recommended courses

100-level

MATH 101 Introductory Mathematics with Applications **or**

MATH 102 Mathematics

LAWS 101 The Legal System

SCIM 101 Science, Māori and Indigenous Knowledge

ENGR 101 Foundations of Engineering

200-level

BIOS 201 Issues in New Zealand Biosecurity

BIOL 215 Plant Diversity and Systematics

BIOL 250 Principles of Animal Physiology

BIOL 273 New Zealand Biodiversity and Biosecurity

POLS 206 Public Policy: An Introduction

BCHM 222 Biochemistry B

BCHM 281 Practical Biochemistry

PHIL 249 Environmental Ethics

300-level

BCHM 303 Special Topic: Toxicology

BIOL 331/BCHM 301 Biochemistry 3

SCIE 301/302 Science and Entrepreneurship

Suggested pathways

A student will normally follow one of two pathways: an environmental pathway or a plant pathway.

Recommended combinations of courses are:

Environmental Biotechnology

100-level

BIOL 111 Cellular Biology and Biochemistry

BIOL 112 Ecology, Evolution and Conservation

BIOL 113 Diversity of Life

BCHM 112 Structure and Reactivity in Chemistry and Biochemistry

STAT 101 Statistics 1

Plus recommended courses from list above

200-level

BIOL 209 Introduction to Biological Data Analysis

BIOL 253 Cell Biology 1 **or**

BIOL 254 Plant Developmental Biology

BIOL 213 Microbiology and Genetics

BIOL 231 Foundations in Molecular Biology

BIOL 271 Evolution

BIOL 215 Plant Diversity and Systematics **or**

BIOL 273 NZ Biodiversity and Biosecurity

BCHM 281 Practical Biochemistry

Plus recommended courses from lists above

300-level

BIOL 313 Advanced Molecular and Industrial Microbiology

BIOL 330 Advanced Concepts in Genetics

BIOL 333 Molecular Genetics (15 points)

BIOL 334 Evolutionary Genetics (15 points)

BIOL 332 Genetics and Evolution of Invasive Species

BIOL 371 Evolutionary Ecology

Plus recommended courses from lists above

Plant Biotechnology

100-level

BIOL 111 Cellular Biology and Biochemistry

BIOL 112 Ecology, Evolution and Conservation

BIOL 113 Diversity of Life

BCHM 112 Structure and Reactivity in Chemistry and Biochemistry

STAT 101 Statistics 1

Plus recommended courses from list above

200-level

BCHM 281 Practical Biochemistry

BIOL 209 Introduction to Biological Data Analysis

BIOL 213 Microbiology and Genetics

BIOL 231 Foundations in Molecular Biology

BIOL 254 Principles of Plant Physiology

BIOL 253 Cell Biology 1

BIOL 271 Evolution

Plus recommended courses from lists above

300-level

BIOL 333 Molecular Genetics (15 points)

BIOL 334 Evolutionary Genetics (15 points)

BIOL 335 Bioinformatics and Genomics

BIOL 352 Plant Development and Biotechnology

BIOL 330 Advanced Concepts in Genetics

BIOL 351 Cell Biology

Plus recommended courses from lists above

Ecology

To qualify for an endorsement in Ecology a student must be enrolled for a Bachelor of Science in Biological Sciences and must complete the 360 point requirement for the BSc.

Required courses

The following courses are required for the endorsement:

100-level

BIOL 111 Cellular Biology and Biochemistry

BIOL 112 Ecology, Evolution and Conservation

BIOL 113 Diversity of Life

STAT 101 Statistics 1

200-level

BIOL 209 Introduction to Biological Data Analysis, **or**

STAT 201 Applied Statistics, **or**

STAT 202 Regression Modelling

BIOL 270 Ecology

BIOL 271 Evolution

300-level

BIOL 309 Experimental Design and Data Analysis for Biologists

And at least 60 points from:

BIOL 354 Animal Ecophysiology

BIOL 371 Evolutionary Ecology

BIOL 383 Behaviour

BIOL 384 Marine Ecosystems

BIOL 375 Freshwater Ecosystems

BIOL 377 Global Change and Biosecurity

BIOL 378 Population Ecology and Conservation

BIOL 379 Sustaining Native Biodiversity in Primary Production Systems

Recommended courses

100-level

CHEM 114 Foundations of Chemistry

GEOG 106 Global Environmental Change

GEOG 109 Forces in Nature

GEOL 111 Planet Earth: An Introduction to Geology

GEOL 112 Understanding Earth History

200-level

BIOL 210 Vertebrate Biology

BIOL 211 Insect Biology

BIOL 212 Marine Biology
 BIOL 215 Plant Diversity
 BIOL 272 Principles of Animal Behaviour
 BIOL 273 New Zealand Biodiversity and Biosecurity
 GEOG 205 Introduction to Geographic Information Systems

300-level

FORE 444 Sustaining Native Biodiversity on Private Land
 GEOG 323 Geospatial Analysis in the Social and Environmental Sciences

Schedule V: Valid Courses for the Degree of Bachelor of Science*Accounting*

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
ACCT 311	Financial Accounting: Theory & Practice	15	S1	Campus	P: ACCT 211 R: AFIS 301, ACIS 311, AFIS 311, AFIS 501.

Antarctic Studies

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
ANTA 101	Antarctica	15	SU2	Distance Learning	R: INCO 103, ANTA 102 and ANTA 103, ANTA 112 and ANTA 113
			SU2	Distance Learning	
ANTA 102	Antarctica: The Cold Continent	15	S1	Campus	
ANTA 103	Antarctica: Life in the Cold	15	S2	Campus	
ANTA 201	Antarctica and Global Change	15	S2	Campus	P: 30 points from 100-level Antarctic Studies, Biology, Geography or Geology courses

Astronomy

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
ASTR 109	The Cosmos: Birth and Evolution	15	S1	Campus	R: (1) PHYS 109. (2) Students who have been credited with ASTR 112 cannot subsequently be credited with ASTR 109. EQ: PHYS 109
			S1	Distance Learning	
ASTR 112	Astrophysics	15	S1	Campus	
ASTR 211	Observational Astronomy	15	S2	Campus	P: (1) ASTR 112; and (2) COSC 131 or COSC 121. R: ASTR 231 RP: PHYS 285
ASTR 212	Dynamical Astronomy and the Solar System	15	NO		P: 30 points from ASTR 112, MATH 100-level, STAT 100-level, PHYS 101-102, or PHYS 111. These prerequisites may be replaced by a high level of achievement in NCEA Level 3 Physics and Mathematics with Calculus or other background as approved by the Head of School.
ASTR 231	Observational Astronomy	30	SU2	Campus	P: Subject to approval of the Head of School. R: ASTR 211

ASTR 323	Stellar Structure and Evolution	15	S2	Campus	P: (1) 30 points from PHYS 203-206, ASTR 211-212; and (2) MATH 103 or MATH 109 or EMTH 119 or MATH 201. R: PHYS 323, ASTR 423 EQ: PHYS 323
ASTR 324	Special Topic	15	NO		P: (1) 30 points from PHYS 203-206, ASTR 211-212; (2) MATH 103 or MATH 109 or EMTH 119 or MATH 201, or Entry by permission of the Head of School, School of Physical and Chemical Sciences.
ASTR 325	The Structure and Evolution of Galaxies	15	NO		P: (1) 30 points from PHYS 203-206, ASTR 211-212; and (2) MATH 103 or MATH 109 or EMTH 119 or MATH 201. R: PHYS 325, ASTR 425 EQ: PHYS 325
ASTR 332	Theoretical and Observational Cosmology	15	S1	Campus	P: (1) PHYS 205 and PHYS 203; and (2) MATH 103 or MATH 109 or EMTH 119 or MATH 201. R: ASTR 422, ASTR 322 RP: MATH 202
ASTR 381	Advanced Experiments in Physics and Astronomy	15	S2	Campus	P: (1) PHYS 285; (2) 30 points from PHYS 201-206 including either PHYS 202 or PHYS 205). (3) MATH 103 or EMTH 119 or MATH 201. R: PHYS 381 RP: MATH 201 EQ: PHYS 381
ASTR 391	Introductory Astronomy Research	15	SU2	Campus	P: (1) MATH 103 or MATH 109 or equivalent (2) 44 points from PHYS 200 or ASTR 200 (3) Entry subject to a supervisor approved by the Head of School, being available R: ASTR 392, ASTR 393
			S1	Campus	
			S2	Campus	

Biochemistry

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
BCHM 111	Cellular Biology and Biochemistry	15	S1	Campus	R: BIOL 111 and ENCH 281 EQ: BIOL 111
BCHM 112	Structure and Reactivity in Chemistry and Biochemistry	15	S2	Campus	P: (1) NCEA: at least 14 credits NCEA Level 3 Chemistry, or (2) CIE: at least D grade in CIE AL Chemistry or A grade in CIE ASL Chemistry, or (3) IB: at least Grade 4 in IB HL Chemistry or Grade 6 in IB SL Chemistry, or (4) CHEM 114, or at least B Grade in BRDG 023. R: CHEM 112 EQ: CHEM 112
BCHM 202	Foundations in Molecular Biology	15	S1	Campus	P: BCHM 111 (BIOL 111) or ENCH 281. R: BIOL 230, BIOL 231, ENCH 480 RP: CHEM 112 or BCHM 112 or CHEM 114 EQ: BIOL 231, ENCH 480
BCHM 206	Organic Chemistry	15	S2	Campus	P: CHEM 212 or BCHM 212 R: CHEM 242 EQ: CHEM 242
BCHM 207	Special Topic	15	NO		P: Entry subject to approval of the Coordinator, Biochemistry
BCHM 212	Chemical Reactivity	15	S1	Campus	P: BCHM 112 (CHEM 112) or ENCH 241 R: CHEM 212 EQ: CHEM 212

BCHM 222	BIOCHEMISTRY B - Metabolism; the reactions of molecules in cells	15	S2	Campus	P: BCHM 221 or BCHM 253 or BIOL 253 R: BCHM 201, ENCH 323
BCHM 253	Cell Biology I	15	S1	Campus	P: BIOL 111 (BCHM 111) or ENCH 281. R: BIOL 253 RP: 15 points of CHEM at 100-level EQ: BIOL 253
BCHM 281	Practical Biochemistry	15	S2	Campus	P: CHEM 111 or CHEM 112 (BCHM 112) R: CHEM 281
BCHM 303	Special Topic	15	NO		P: Entry subject to approval of the Coordinator, Biochemistry.
BCHM 304	Special Topic	15	NO		P: Entry subject to approval of the Coordinator, Biochemistry
BCHM 305	Protein Science	15	S1	Campus	P: BCHM 253/BIOL 253 and BCHM 222. R: BCHM 301 RP: BCHM 202/BIOL 231, BCHM 206/CHEM 242, BCHM 212/CHEM 212.
BCHM 306	Biochemical Pathology	15	S2	Campus	P: BCHM 253/BIOL 253 and BCHM 222, and 15 points from BCHM 206, BCHM 212/CHEM 212. R: BCHM 301, BCHM 302 RP: BCHM 202/BIOL 231.
BCHM 335	Biochemical and Environmental Toxicology	15	NO		P: (1) CHEM 244 or CHEM 211 or CHEM 281 or BCHM 281, (2) BCHM 111 (BIOL 111) or ENCH 281. R: BCHM 302; CHEM 325 RP: CHEM 112 or BCHM 112
BCHM 338	Chemical Biology and Protein Chemistry	15	S1	Campus	P: CHEM 212 or BCHM 212 Recommended preparation: BCHM 202 (BIOL 231) and/or CHEM 242 (BCHM 206) R: CHEM 325; BCHM 302; CHEM 338 RP: BCHM 202 (BIOL 231) and/or CHEM 242 (BCHM 206) EQ: CHEM 338
BCHM 339	Bioinorganic and Bioorganic Chemistry	15	S2	Campus	P: CHEM 212 or BCHM 212. R: CHEM 339; CHEM 325; BCHM 302 RP: CHEM 242 (BCHM 206) EQ: CHEM 339
BCHM 381	Biochemical Techniques	15	S2	Campus	P: BCHM 201 (if taken prior to 2005) or BCHM 281 or CHEM 281

Biological Sciences

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
BIOL 111	Cellular Biology and Biochemistry	15	S1	Campus	R: ENCH 281 and BCHM 111 EQ: BCHM 111
BIOL 112	Ecology, Evolution and Conservation	15	S2	Campus	
BIOL 113	Diversity of Life	15	S1	Campus	
BIOL 116	Human Biology	15	S2	Campus	
BIOL 209	Biological Data Analysis	15	S1	Campus	P: STAT 101 or 15 points of 100-level MATH
BIOL 210	Vertebrate Biology	15	S2	Campus	P: BIOL 113
BIOL 211	Insect Biology	15	NO		P: BIOL 113
BIOL 212	Marine Biology and Ecology	15	S1	Campus	P: BIOL 112 and BIOL 113
BIOL 213	Microbiology	15	S2	Campus	P: BIOL 111 or BIOL 113. RP: BIOL 231/BCHM 202

BIOL 215	Origins and Classification of Life	15	S2	Campus	P: BIOL 113 (RP: BIOL 111 & BIOL 112
BIOL 231	Foundations in Molecular Biology	15	S1	Campus	P: BIOL 111 (=BCHM 111) or ENCH 281 R: BCHM 202, ENCH 480, BIOL 230 EQ: BCHM 202, ENCH 480
BIOL 250	Principles of Animal Physiology	15	S1	Campus	P: BIOL 111 (=BCHM 111) or ENCH 281
BIOL 253	Cell Biology I	15	S1	Campus	P: BIOL 111 (=BCHM 111) or ENCH 281 R: BCHM 253 EQ: BCHM 253
BIOL 254	Principles of Plant Physiology	15	S2	Campus	P: BIOL 111 (=BCHM 111) or ENCH 281 R: BIOL 252
BIOL 271	Evolution	15	S1	Campus	P: BIOL 112
BIOL 272	Principles of Animal Behaviour	15	S2	Campus	P: BIOL 112 or PSYC 105
BIOL 273	New Zealand Biodiversity and Biosecurity	15	S2	Campus	P: BIOL 112 or BIOL 113 R: BIOL 114
BIOL 274	Principles of Ecology	15	S1	Campus	P: BIOL 112 R: BIOL 270
			S1	Distance Learning	
BIOL 275	Field Ecology	15	S1	Campus	C: BIOL 274 R: BIOL 270
BIOL 305	Practical Field Botany	15	SU1	Campus	P: (1) BIOL 215 or (2) BIOL 273 or (3) BIOL 270 or (4) BIOL 274 and BIOL 275 or (5) subject to approval by the Head of the School of Biological Sciences
BIOL 306	Special Topic	15	NO		P: Entry subject to approval by the Head of School.
BIOL 307	Special Topic	15	NO		P: Entry subject to approval by the Head of School.
BIOL 308	Special Topic	30	NO		P: Entry subject to approval by the Head of School.
BIOL 309	Experimental Design and Data Analysis for Biologists	15	S2	Campus	P: BIOL 209 or appropriate statistical background as determined by the Head of School
			S2	Distance Learning	
BIOL 313	Advanced Microbiology	15	S2	Campus	P: BIOL 213
BIOL 332	Genetics, Evolution and Ecology of Invasive Species	15	S2	Campus	P: BIOL 215 or BIOL 271
BIOL 333	Molecular Genetics	15	S1	Campus	P: BIOL 231 (=BCHM 202) R: BIOL 330
BIOL 334	Evolutionary Genetics and Genomics	15	S2	Campus	P: BIOL 215 and BIOL 271 R: BIOL 330
BIOL 336	Ecological and Evolutionary Models	15	S1	Campus	P: BIOL 209 or 15 Points of 200-level COSC or DATA or EMTH or ENCE or PHYS or MATH or STAT. RP: BIOL 270, BIOL 271 or BIOL 274
BIOL 337	Bioinformatics	15	S1	Campus	P: BIOL 231 and DATA 201 and [STAT 201 or BIOL 209]
BIOL 338	Bioinformatics Project	30	S2	Campus	P: BIOL 337
BIOL 351	Cell Biology 2	15	S2	Campus	P: BIOL 253 (=BCHM 253)
BIOL 352	Plant Development and Biotechnology	15	S1	Campus	P: BIOL 254 or BIOL 253 (=BCHM 253) or BIOL 231 (=BCHM 202)
BIOL 354	Animal Ecophysiology	15	S2	Campus	P: BIOL 250
BIOL 355	Neurons, Hormones and Behaviour	15	S1	Campus	P: BIOL 250 RP: BIOL 272

BIOL 371	Evolutionary Ecology	15	S1	Campus	P: BIOL 271
BIOL 375	Freshwater Ecosystems	15	S2	Campus	P: BIOL 209 and either (1) BIOL 270 or (2) BIOL 274 and BIOL 275
BIOL 377	Global Change and Biosecurity	15	S1	Campus	P: BIOL 209 and either (1) BIOL 270 or (2) BIOL 274 and BIOL 275
BIOL 378	Population Ecology and Conservation	15	S1	Campus	P: BIOL 209 and either (1) BIOL 270 or (2) BIOL 274 and BIOL 275
BIOL 383	Behavioural Ecology	15	S1	Campus	P: BIOL 209 and BIOL 272 R: BIOL 373
BIOL 384	Marine Ecosystems	15	S2	Campus	P: BIOL 209 and either (1) BIOL 270 or (2) BIOL 274 and BIOL 275. R: BIOL 374 RP: BIOL 212

Biosecurity

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
BIOS 201	Issues in New Zealand Biosecurity	15	S2	Campus	P: 60 points at 100-level R: BIOS 101

Chemistry

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
CHEM 111	Chemical Principles and Processes	15	S1	Campus	P: (1) NCEA: at least 14 credits NCEA Level 3 Chemistry, or (2) CIE: at least D grade in CIE AL Chemistry or A grade in CIE ASL Chemistry, or (3) IB: at least Grade 4 in IB HL Chemistry or Grade 6 in IB SL Chemistry, or (4) CHEM 114, or at least B Grade in BRDG 023.
			S2	Campus	
CHEM 112	Structure and Reactivity in Chemistry and Biochemistry	15	S2	Campus	P: (1) NCEA: at least 14 credits NCEA Level 3 Chemistry, or (2) CIE: at least D grade in CIE AL Chemistry or A grade in CIE ASL Chemistry, or (3) IB: at least Grade 4 in IB HL Chemistry or Grade 6 in IB SL Chemistry, or (4) CHEM 114, or at least B Grade in BRDG 023. R: BCHM 112 EQ: BCHM 112
CHEM 114	Foundations of Chemistry	15	S1	Campus	R: (1) NCEA: 14 credits NCEA Level 3 Chemistry, or (2) CIE: at least D grade in CIE AL Chemistry or A grade in CIE ASL Chemistry, or (3) IB: at least Grade 4 in IB HL Chemistry or Grade 6 in IB SL Chemistry, or (4) at least B Grade in BRDG 022 or BRDG 023. Students who have been credited with any of CHEM 111, CHEM 112 or BCHM 112 cannot subsequently be credited with CHEM 114. Concurrent enrolment in CHEM 114 and CHEM 111 is not permitted.
CHEM 211	Molecules	15	S1	Campus	P: CHEM 111
CHEM 212	Chemical Reactivity	15	S1	Campus	P: CHEM 112 or BCHM 112 or ENCH 241 R: BCHM 212 EQ: BCHM 212
CHEM 242	Organic Chemistry	15	S2	Campus	P: CHEM 212 or BCHM 212 R: BCHM 206 EQ: BCHM 206

CHEM 245	Special Topic	15	NO		P: CHEM 211 and one of CHEM 241 and 243. R: Restricted against CHEM 251 and 255, and cannot be taken if both of CHEM 241 and 243 have been credited.
CHEM 246	Introduction to Medicinal Chemistry	15	S2	Campus	P: CHEM 212 or BCHM 212
CHEM 247	Special Topic: Analytical Chemistry	15	NO		P: CHEM 111 or CHEM 112 (BCHM 112)
CHEM 251	Foundations of Materials Science and Nanotechnology	15	S2	Campus	P: CHEM 211 or (CHEM 111 and PHYS 102) R: CHEM 241 and CHEM 245
CHEM 255	Contemporary Chemistry: Technology, Environment, and Health	15	S2	Campus	P: 30 points from CHEM 111, CHEM 112, BCHM 112, CHEM 211 and CHEM 212. R: CHEM 245 RP: CHEM 281
CHEM 281	Practical Chemistry	15	S1	Campus	P: CHEM 111 or CHEM 112 (BCHM 112) R: BCHM 281
CHEM 327	Special Topic	15	S1	Campus	P: Entry subject to approval of the Head of School.
			S2	Campus	
CHEM 328	Special Topic	15	S1	Campus	P: Entry subject to approval of the Head of School.
			S2	Campus	
CHEM 333	Chemical Physics and Spectroscopy	15	S2	Campus	P: CHEM 251 or CHEM 243
CHEM 335	Organometallic Chemistry and Catalysis	15	S2	Campus	P: CHEM 251 or CHEM 241 R: CHEM 321
CHEM 336	Supramolecular Chemistry and Molecular Engineering	15	S1	Campus	P: (CHEM 242 or BCHM 206) and (CHEM 251 or CHEM 241) R: CHEM 322
CHEM 337	Organic Synthesis	15	S2	Campus	P: CHEM 242 or BCHM 206 R: CHEM 322
CHEM 338	Chemical Biology	15	S1	Campus	P: CHEM 212 or BCHM 212 R: BCHM 338, CHEM 325, BCHM 302 RP: CHEM 242 or BCHM 206, and/or BCHM 202 (BIOL 231) EQ: BCHM 338
CHEM 339	Bioinorganic and Bioorganic Chemistry	15	S2	Campus	P: CHEM 212 or BCHM 212. R: BCHM 339, CHEM 325, BCHM 302 RP: CHEM 242 or BCHM 206 EQ: BCHM 339
CHEM 340	Environmental Chemistry and Toxicology	15	S1	Campus	P: 30 points from CHEM 281; BCHM 281; CHEM 211; CHEM 255; WATR 201 R: CHEM 324
CHEM 342	Aromatic, heterocyclic, and pharmaceutical chemistry	15	S1	Campus	P: CHEM 242 or BCHM 206 R: CHEM 322, CHEM 362
CHEM 343	Materials Science and Nanotechnology	15	S1	Campus	P: CHEM 251 or CHEM 243
CHEM 346	Contemporary Medicinal Chemistry	15	NO		P: CHEM 246. RP: CHEM 212, CHEM 242
CHEM 347	Drug Discovery and Development	15	NO		P: CHEM 342, CHEM 346. RP: CHEM 212, CHEM 242
CHEM 381	Advanced Synthetic Techniques	15	S1	Campus	P: (CHEM 281 or BCHM 281) and CHEM 212. RP: Additional 30 points from CHEM 211, CHEM 242 and CHEM 251.
CHEM 382	Instrumental Methods	15	S2	Campus	P: (CHEM 281 or BCHM 281) and (CHEM 211 or CHEM 251 or (CHEM 111 and CHEM 255)). RP: 30 points from CHEM 211–CHEM 255.

Communication Disorders

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
HEAR 243	Introduction to Audiologic Assessment and Management	15	S1	Campus	R: HEAR 663
SPSC 113	Introduction to Communication Disorders	15	S2	Campus	R: CMDS 111 and CMDS 112
SPSC 161	Anatomy and Physiology of the Speech, Hearing and Swallowing Mechanism	15	S1	Campus	
SPSC 262	Neuroscience of Swallowing and Communication	15	S1	Campus	R: SPSC 667, CMDS 162

Computer Science

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
COSC 101	Working in a Digital World	15	S1	Campus	R: COSC 110, DIGI 101 EQ: DIGI 101
COSC 121	Introduction to Computer Programming	15	S1	Campus	R: COSC 131
			S2	Campus	
COSC 122	Introduction to Computer Science	15	SU2	Campus	P: COSC 121 R: COSC 112, CMIS 112
COSC 122	Introduction to Computer Science	15	SU2	Campus	P: COSC 121 R: COSC 112, CMIS 112
COSC 131	Introduction to Programming for Engineers	15	S1	Campus	R: COSC 121
			S2	Campus	
			SU2	Campus	
COSC 241	Special Topic	15	NO		P: Entry subject to approval by the Head of Department.
COSC 242	Special Topic	15	NO		P: Entry subject to approval by the Head of Department.
COSC 243	Special Topic	15	NO		P: Entry subject to approval by the Head of Department.
COSC 260	Turing: From the Computer Revolution to the Philosophy of AI	15	S2	Campus	P: Any 15 points at 100-level in PHIL, COSC, LING, MATH, or PSYC, or any 60 points at 100-level from the Schedule V of the BA or the BSc. R: PHIL 250
COSC 261	Formal Languages and Compilers	15	S1	Campus	P: (1) COSC 121 or COSC 131; (2) COSC 122; (3) MATH 120
COSC 262	Algorithms	15	S1	Campus	P: (1) COSC 121; (2) COSC 122; RP: MATH 120
COSC 264	Introduction to Computer Networks and the Internet	15	S2	Campus	P: (1) COSC 121 or COSC 131; (2) COSC 122; (3) EMTH 119 or (MATH 102 and MATH 120) or (MATH 102 and STAT 101)
COSC 265	Relational Database Systems	15	S2	Campus	P: COSC 121 or COSC 131 or INFO 125
COSC 362	Data and Network Security	15	S2	Campus	P: COSC 264 or INFO 333. R: COSC 332, ACIS 323, AFIS 323 RP: It is recommended that COSC 362 and COSC 364 be taken together.
COSC 363	Computer Graphics	15	S1	Campus	P: (1) ENCE 260, (2) 30 points of 200-level Computer Science, (3) 15 points of 100-level MATH/STAT/EMTH (MATH 120) recommended). MATH 101 is not acceptable.

COSC 364	Internet Technology and Engineering	15	S1	Campus	P: COSC 264
COSC 366	Research Project	15	SU2	Campus	P: (1)45 points of 200-level Computer Science (2) 30 points from Mathematics, Statistics or Engineering Mathematics or 15 points of Math/Stat (MATH 120 recommended) and COSC 262. MATH 101 is not acceptable. (3) approval of the Head of Department RP: COSC 110 OR COSC 101, ENCE 260, COSC 261, COSC 262, SENG 201
COSC 367	Artificial Intelligence	15	S2	Campus	P: COSC 262
COSC 368	Humans and Computers	15	S2	Campus	P: (1) 45 points of (200-level Computer Science and ENCE 260), (2) 30 points of EMTH or 15 points of MATH/STAT (MATH 120 recommended). MATH 101 is not acceptable. R: COSC 225 RP: COSC 110 OR COSC 101, COSC 263 OR SENG 201
COSC 371	Special Topic	15	NO		P: Subject to approval by the Head of Department.
COSC 372	Special Topic	15	NO		P: Subject to approval by the Head of Department.
ENCE 260	Computer Systems	15	S2	Campus	P: COSC 121 or COSC 131 R: ENEL 206; both COSC 208/ENCE 208 and COSC 221/ENCE 221
ENCE 360	Operating Systems	15	S2	Campus	P: ENCE 260. R: COSC 321 RP: COSC 110 or COSC 101, COSC 262.
ENCE 361	Embedded Systems 1	15	S1	Campus	P: ENCE 260 R: ENEL 353, ENEL 323, COSC 361, ELEC 361, ENEL 340
LING 315	Special Topic: Natural Language Processing	15	NO		P: COSC 262
SENG 201	Software Engineering I	15	S1	Campus	P: (1) COSC 121 or COSC 131; (2) COSC 122; (3) 15 points from MATH, STAT or EMTH. MATH 120/STAT 101 are strongly recommended.
SENG 301	Software Engineering II	15	S1	Campus	P: SENG 201. R: COSC 314, COSC 324 RP: COSC 110 OR COSC 101, ENCE 260.
SENG 302	Software Engineering Group Project	30	W	Campus	P: SENG 201 and COSC 265 C: SENG 301
SENG 365	Web Computing Architectures	15	S1	Campus	P: COSC 265 or two courses out of (INFO 223, INFO 253, INFO 263). R: COSC 365 RP: SENG 201 is strongly recommended.

Data Science

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
COSC 101	Working in a Digital World	15	S1	Campus	R: COSC 110, DIGI 101 EQ: DIGI 101
COSC 121	Introduction to Computer Programming	15	S1	Campus	R: COSC 131
			S2	Campus	
COSC 122	Introduction to Computer Science	15	SU2	Campus	P: COSC 121 R: COSC 112, CMIS 112
COSC 262	Algorithms	15	S1	Campus	P: (1) COSC 121; (2) COSC 122; RP: MATH 120

COSC 265	Relational Database Systems	15	S2	Campus	P: COSC 121 or COSC 131 or INFO 125
COSC 367	Artificial Intelligence	15	S2	Campus	P: COSC 262
DATA 201	Data Wrangling	15	S2	Campus	P: 15 Points of 100-level COSC, MATH or STAT or INFO 125
DATA 301	Big Data Computing and Systems	15	S1	Campus	P: COSC 262
MATH 101	Methods of Mathematics	15	S1	Campus	R: MATH 199
			S2	Campus	
MATH 102	Mathematics 1A	15	S1	Campus	P: 1. MATH 101, or 2. NCEA 14 Credits at level 3 Mathematics, or 3. Cambridge: D at A level or an A at AS level in Mathematics, or 4. IB: 4 at HL or 5 at SL in Mathematics, or 5. Approval of the Head of School based on alternative prior learning. R: MATH 108, MATH 199, EMTH 118
			S2	Campus	
MATH 120	Discrete Mathematics	15	SU2	Campus	P: 1. MATH 101 or MATH 102 or EMTH 118, or 2. NCEA 14 Credits (18 strongly recommended) at level 3 Mathematics, or 3. Cambridge: D at A level or an A at AS level in Mathematics, or 4. IB: 4 at HL or 5 at SL in Mathematics, or 5. approval of the Head of School based on alternative prior learning. R: MATH 115
			S2	Campus	
MATH 203	Linear Algebra	15	S1	Campus	P: MATH 103 or EMTH 119 or MATH 199 R: MATH 252, MATH 254, EMTH 203, EMTH 204, EMTH 211, DATA 203
MATH 303	Applied Matrix Algebra	15	S2	Campus	P: One of MATH 203, EMTH 211, or DATA 203 R: MATH 352, EMTH 412
SENG 201	Software Engineering I	15	S1	Campus	P: (1) COSC 121 or COSC 131; (2) COSC 122; (3) 15 points from MATH, STAT or EMTH. MATH 120/ STAT 101 are strongly recommended.
STAT 101	Statistics 1	15	SU2	Campus	R: STAT 111, STAT 112, DIGI 103 EQ: STAT 111, STAT 112, DIGI 103
			S1	Campus	
			S2	Campus	
STAT 211	Random Processes	15	S1	Campus	P: 15 points from MATH 102, EMTH 118 or MATH 199; and another 15 points from 100-level STAT, MATH or EMTH (excluding MATH 101 & MATH 110) R: STAT 216
STAT 213	Statistical Inference	15	S2	Campus	P: 15 points from MATH 102, EMTH 118 or MATH 199; and another 15 points from 100-level STAT, MATH or EMTH (excluding MATH 101 & MATH 110) R: STAT 214
STAT 221	Introduction to Statistical Computing Using R	15	S2	Campus	P: 15 points from MATH 102, EMTH 118 or MATH 199; and another 15 points from 100-level STAT, MATH or EMTH (excluding MATH 101 & MATH 110) R: STAT 218
STAT 315	Multivariate Statistical Methods	15	S1	Campus	P: 15 points from MATH 102, EMTH 118 or MATH 199; and 15 points from 200-level STAT; and a further 15 points from 200-level STAT, or DATA 203 or MATH 103.
STAT 318	Data Mining	15	S1	Campus	P: 15 points from MATH 102, EMTH 118 or MATH 199; and another 30 points from 200-level STAT, COSC, DATA, MATH or EMTH
			S2	Campus	
STAT 319	Generalised Linear Models	15	S1	Campus	P: 30 points from STAT 200-299

Economics

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
ECON 104	Introduction to Microeconomics	15	S1	Campus	R: ECON 199
			S2	Campus	
ECON 105	Introduction to Macroeconomics	15	X	Distance Learning	
			S1	Distance Learning	
			S2	Campus	
ECON 199	Introduction to Microeconomics	15	X	Distance Learning	P: Subject to approval of the Head of Department. R: ECON 104
ECON 206	Intermediate Macroeconomics	15	S2	Campus	P: ECON 104 and ECON 105 R: ECON 201
ECON 207	Intermediate Microeconomics - Households and Government	15	SU2	Distance Learning	P: ECON 104 R: ECON 202, ECON 203
			S1	Campus	
ECON 208	Intermediate Microeconomics - Firms and Markets	15	S2	Campus	P: ECON 104 R: ECON 202, ECON 203
ECON 213	Introduction to Econometrics	15	S1	Campus	P: (i) ECON 104 or ECON 105; and (2) 15 points from STAT. R: ECON 214 RP: MATH 101 or Year 13 Math with Calculus.
ECON 214	Data Analytics for Business Economics	15	S1	Campus	P: (i) ECON 104 or ECON 105; and (2) 15 points from STAT R: ECON 213
ECON 222	International Trade	15	S2	Campus	P: ECON 104
ECON 223	Introduction to Game Theory for Business, Science and Politics	15	SU2	Campus	P: Any 60 points
ECON 225	Environmental Economics	15	S1	Campus	P: ECON 104
ECON 228	Study Tour to South America	15	NO		P: (i) ECON 104 (2) Subject to the Head of Department approval.
ECON 310	Economic Thinking for Business	15	S2	Campus	P: (i) ECON 207; and (2) ECON 208; and (3) ECON 213 or ECON 214
ECON 314	Economic Analysis of "Big Data"	15	S2	Campus	P: (i) ECON 105 ; and (2) ECON 213 or ECON 214
ECON 321	Microeconomic Analysis	15	S1	Campus	P: (i) ECON 207; and (2) MATH 102 or MATH 199; and (3) 15 points from STAT RP: ECON 208
ECON 323	Time Series Methods	15	S2	Campus	P: (i) ECON 213; and (2) ECON 207 or FINC 205; and (3) MATH 102 R: FINC 323, STAT 317 EQ: FINC 323, STAT 317
ECON 324	Econometrics	15	S1	Campus	P: (i) ECON 213 or STAT 202; and (2) MATH 102 or MATH 199
ECON 325	Macroeconomic Analysis	15	NO		P: (i) ECON 105; and (2) ECON 208; and (3) ECON 321 R: ECON 201
ECON 326	Macro and Monetary Economics	15	S2	Campus	P: (i) ECON 206; (2) MATH 102 or MATH 199. RP: ECON 207
ECON 327	Economic Analysis of Law	15	NO		P: ECON 207
ECON 329	Industrial Organisation	15	S1	Campus	P: ECON 207 or ECON 208 RP: ECON 208

ECON 330	Strategic Behaviour of Firms	15	NO		P: ECON 208
ECON 331	Financial Economics	15	S2	Campus	P: (1) ECON 207; and (2) FINC 201; and (3) MATH 102 or MATH 199; R: FINC 331 RP: FINC 205 or MATH 103 EQ: FINC 331
ECON 332	Economics and Psychology	15	NO		P: ECON 207
ECON 333	Experimental Economics	15	NO		P: ECON 207
ECON 334	Labour Economics	15	NO		P: ECON 208. RP: ECON 206
ECON 335	Public Economics 1	15	S1	Campus	P: ECON 207 RP: ECON 208
ECON 338	Health Economics Overview	15	S1	Campus	P: ECON 207 RP: ECON 208
ECON 339	The Economics of European Integration	15	SU1	Distance Learning	P: Any 30 points at 200-level in EURA or ECON, or any 60 points at 200-level from the Schedule V of the BA R: EURO 339, EURA 339 EQ: EURA 339
			SU1	Campus	
ECON 340	Development Economics	15	S2	Campus	P: ECON 207 or ECON 208 RP: ECON 208
ECON 341	Economics of Education	15	NO		P: ECON 207 or ECON 208
ECON 342	Economic History	15	NO		P: (1) ECON 104; and (2) ECON 105; and (3) ECON 206 or ECON 207
ECON 343	The Economics of Innovation, Creativity and Intellectual Property	15	NO		P: ECON 208 RP: MATH 102 or MATH 199
ECON 344	International Finance	15	S2	Campus	P: ECON 206 or FINC 201 or FINC 203 R: ECON 210 and FINC 315 and FINC 344 RP: 15 points in MATH or Year 13 Math with Calculus EQ: FINC 344
ECON 345	The Economics of Risk and Insurance	15	NO		P: ECON 207 RP: ECON 208 EQ: FINC 345
ECON 390	Internship or Consultancy Project	15	S1	Campus	P: (1) ECON 207 or ECON 208; and (2) Subject to the Head of Department approval R: FINC 390, ARTS 395, PACE 395
			S2	Campus	

Engineering

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
ENGR 101	Foundations of Engineering	15	SU2	Campus	
			S1	Campus	
ENGR 102	Engineering Mechanics	15	SU2	Campus	P: EMTH 118 C: EMTH 119, PHYS 101
			S2	Campus	

Environmental Science

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
BIOL 209	Biological Data Analysis	15	S1	Campus	P: STAT 101 or 15 points of 100-level MATH
ENVR 101	Introduction to Environmental Science	15	S2	Campus	
ENVR 201	Environmental Science and Practice	15	S2	Campus	P: ENVR 101

ENVR 301	Environmental Science: Cities and Coasts	30	S1	Campus	P: ENVR 201
ENVR 356	Field-focused Research Methods in Environmental Science	30	X	Campus	P: Enrolment in the Frontiers Abroad programme and Head of School approval. R: GEOL 356. This course is not open to non-Frontiers Abroad students RP: Completion of course(s) at home institution in the broader field of Earth Systems Science and Environmental Science and Studies.
			S2	Campus	
GEOG 106	Global Environmental Change	15	S2	Campus	R: GEOG 103
GEOG 206	Resource and Environmental Management	15	S2	Campus	P: Any 30 points of 100-level geography, or GEOG 106 and ENVR 101, or entry with approval of the Head of School.
GEOG 309	Research for Resilient Environments and Communities	30	S2	Campus	P: 30 points of GEOG at 200-level, or GEOG 206 and ENVR 201 R: GEOG 204, GEOG 303
MATH 102	Mathematics 1A	15	S1	Campus	P: 1. MATH 101, or 2. NCEA 14 Credits at level 3 Mathematics, or 3. Cambridge: D at A level or an A at AS level in Mathematics, or 4. IB: 4 at HL or 5 at SL in Mathematics, or 5. Approval of the Head of School based on alternative prior learning. R: MATH 108, MATH 199, EMTH 118
			S2	Campus	
SCIM 101	Science, Māori and Indigenous Knowledge	15	S2	Campus	R: MAOR 172 EQ: MAOR 172
STAT 101	Statistics 1	15	SU2	Campus	R: STAT 111, STAT 112, DIGI 103 EQ: STAT 111, STAT 112, DIGI 103
			S1	Campus	
			S2	Campus	

Finance

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
FINC 101	Personal Finance	15	SU1	Campus	
			S1	Campus	
FINC 201	Business Finance	15	SU2	Distance Learning	P: (1) ACCT 102 or MATH 103; and (2) STAT 101; and (3) a further 30 points R: FINC 202, AFIS 204 RP: Students without a mathematics background equivalent to NCEA Level 2 should pass MATH 101 before enrolling in this course. EQ: AFIS 204
FINC 203	Financial Markets, Institutions and Instruments	15	S1	Campus	P: (1) STAT 101; and (2) A further 45 points. R: AFIS 214 EQ: AFIS 214
FINC 205	Quantitative Finance	15	NO		P: (1) MATH 102 or MATH 199; and (2) STAT 101 RP: MATH 103
FINC 301	Corporate Finance Theory and Policy	15	S2	Campus	P: FINC 201 C: FINC 203 R: FINC 354, AFIS 304
FINC 302	Applied Corporate Finance	15	NO		P: (1) FINC 201 and FINC 203; and (2) MATH 101 or MATH 102 or MATH 199

FINC 305	Financial Modelling	15	S1	Campus	P: (1) FINC 201; and (2) MATH 101 or MATH 102 or MATH 199 C: FINC 203 or MATH 103 R: FINC 616
FINC 308	Applied Financial Analysis and Valuation	15	S2	Campus	P: FINC 201 C: FINC 203 R: FINC 394 and AFIS 314
FINC 311	Investments	15	S1	Campus	P: (1) FINC 201; and (2) MATH 101 or MATH 102 or MATH 199 C: FINC 203 or MATH 103 R: FINC 364, AFIS 314
FINC 312	Derivative Securities	15	S1	Campus	P: (1) FINC 201; and (2) MATH 101 or MATH 102 or MATH 199 C: FINC 203 or MATH 103 R: FINC 612
FINC 316	Fixed Income Securities	15	NO		P: (1) FINC 201 and FINC 203; and (2) MATH 102 or MATH 199 RP: FINC 205
FINC 323	Time Series Methods	15	NO		P: (1) ECON 213; and (2) ECON 207 or FINC 205; and (3) MATH 102 R: STAT 317, ECON 323 EQ: ECON 323, STAT 317
FINC 331	Financial Economics	15	S2	Campus	P: (1) ECON 207; and (2) FINC 201; and (3) MATH 102 or MATH 199 R: ECON 331 RP: FINC 205 or MATH 103 EQ: ECON 331
FINC 344	International Finance	15	S2	Campus	P: ECON 206 or FINC 201 or FINC 203 R: FINC 315, ECON 344, ECON 210 RP: 15 points in MATH or Year 13 Math with Calculus EQ: ECON 344
FINC 345	The Economics of Risk and Insurance	15	NO		P: ECON 207 RP: ECON 208 EQ: ECON 345
FINC 370	Special Topic: Energy Financing	15	NO		P: (1) FINC 201 (2) FINC 203 (3) MATH 101
FINC 390	Internship or Consultancy Project	15	S1	Campus	P: (1) FINC 201 and FINC 203 (2) Subject to approval of the Head of Department R: ECON 390, ARTS 395, PACE 395
			S2	Campus	

Financial Engineering

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
COSC 121	Introduction to Computer Programming	15	S1	Campus	R: COSC 131
			S2	Campus	
COSC 122	Introduction to Computer Science	15	SU2	Campus	P: COSC 121 R: COSC 112, CMIS 112
COSC 262	Algorithms	15	S1	Campus	P: (1) COSC 121; (2) COSC 122; RP: MATH 120
COSC 367	Artificial Intelligence	15	S2	Campus	P: COSC 262
ECON 104	Introduction to Microeconomics	15	S1	Campus	R: ECON 199
			S2	Campus	

ECON 105	Introduction to Macroeconomics	15	X	Distance Learning	
			S1	Distance Learning	
			S2	Campus	
ECON 207	Intermediate Microeconomics - Households and Government	15	SU2	Distance Learning	P: ECON 104 R: ECON 202, ECON 203
			S1	Campus	
ECON 208	Intermediate Microeconomics - Firms and Markets	15	S2	Campus	P: ECON 104 R: ECON 202, ECON 203
ECON 213	Introduction to Econometrics	15	S1	Campus	P: (1) ECON 104 or ECON 105; and (2) 15 points from STAT. R: ECON 214 RP: MATH 101 or Year 13 Math with Calculus.
ECON 321	Microeconomic Analysis	15	S1	Campus	P: (1) ECON 207; and (2) MATH 102 or MATH 199; and (3) 15 points from STAT RP: ECON 208
ECON 323	Time Series Methods	15	S2	Campus	P: (1) ECON 213; and (2) ECON 207 or FINC 205; and (3) MATH 102 R: FINC 323, STAT 317 EQ: FINC 323, STAT 317
ECON 324	Econometrics	15	S1	Campus	P: (1) ECON 213 or STAT 202; and (2) MATH 102 or MATH 199
ECON 331	Financial Economics	15	S2	Campus	P: (1) ECON 207; and (2) FINC 201; and (3) MATH 102 or MATH 199; R: FINC 331 RP: FINC 205 or MATH 103 EQ: FINC 331
FINC 201	Business Finance	15	SU2	Distance Learning	P: (1) ACCT 102 or MATH 103; and (2) STAT 101; and (3) a further 30 points R: FINC 202, AFIS 204 RP: Students without a mathematics background equivalent to NCEA Level 2 should pass MATH 101 before enrolling in this course. EQ: AFIS 204
FINC 203	Financial Markets, Institutions and Instruments	15	S1	Campus	P: (1) STAT 101; and (2) A further 45 points. R: AFIS 214 EQ: AFIS 214
FINC 205	Quantitative Finance	15	NO		P: (1) MATH 102 or MATH 199; and (2) STAT 101 RP: MATH 103
FINC 305	Financial Modelling	15	S1	Campus	P: (1) FINC 201; and (2) MATH 101 or MATH 102 or MATH 199 C: FINC 203 or MATH 103 R: FINC 616
FINC 311	Investments	15	S1	Campus	P: (1) FINC 201; and (2) MATH 101 or MATH 102 or MATH 199 C: FINC 203 or MATH 103 R: FINC 364, AFIS 314
FINC 312	Derivative Securities	15	S1	Campus	P: (1) FINC 201; and (2) MATH 101 or MATH 102 or MATH 199 C: FINC 203 or MATH 103 R: FINC 612

FINC 331	Financial Economics	15	S2	Campus	P: (1) ECON 207; and (2) FINC 201; and (3) MATH 102 or MATH 199 R: ECON 331 RP: FINC 205 or MATH 103 EQ: ECON 331
FINC 345	The Economics of Risk and Insurance	15	NO		P: ECON 207 RP: ECON 208 EQ: ECON 345
MATH 102	Mathematics 1A	15	S1	Campus	P: 1. MATH 101, or 2. NCEA 14 Credits at level 3 Mathematics, or 3. Cambridge: D at A level or an A at AS level in Mathematics, or 4. IB: 4 at HL or 5 at SL in Mathematics, or 5. Approval of the Head of School based on alternative prior learning. R: MATH 108, MATH 199, EMTH 118
			S2	Campus	
MATH 103	Mathematics 1B	15	S2	Campus	P: MATH 102 or EMTH 118 R: MATH 109, MATH 199, EMTH 119
MATH 120	Discrete Mathematics	15	SU2	Campus	P: 1. MATH 101 or MATH 102 or EMTH 118, or 2. NCEA 14 Credits (18 strongly recommended) at level 3 Mathematics, or 3. Cambridge: D at A level or an A at AS level in Mathematics, or 4. IB: 4 at HL or 5 at SL in Mathematics, or 5. approval of the Head of School based on alternative prior learning. R: MATH 115
			S2	Campus	
MATH 170	Mathematical Modelling and Computation	15	NO		R: MATH 171, EMTH 171 RP: It is strongly recommended that students should have passed EMTH 118 or MATH 102 before taking EMTH 171/MATH 170. A prior or concurrent enrolment in EMTH 119 or MATH 103 is also recommended. If you are taking EMTH 171/MATH 170 concurrently with EMTH 118 or MATH 102, you are likely to experience difficulties and need to put in extra work.
MATH 201	Multivariable Calculus	15	S1	Campus	P: MATH 103 or MATH 199 or EMTH 119 R: MATH 261, MATH 264, EMTH 202, EMTH 204, EMTH 210
MATH 202	Differential Equations	15	S2	Campus	P: MATH 103 or MATH 199 or EMTH 119 R: MATH 262, MATH 264, EMTH 202, EMTH 204
MATH 203	Linear Algebra	15	S1	Campus	P: MATH 103 or EMTH 119 or MATH 199 R: MATH 252, MATH 254, EMTH 203, EMTH 204, EMTH 211, DATA 203
MATH 270	Mathematical Modelling and Computation 2	15	S2	Campus	P: (MATH 170 or EMTH 171 or MATH 280 or COSC 121 or Head of School approval) and (EMTH 119 or MATH 103 or MATH 199) R: EMTH 271, MATH 271
MATH 302	Partial Differential Equations	15	S1	Campus	P: (MATH 201 and MATH 202) or EMTH 210 R: MATH 361, EMTH 391, EMTH 413
MATH 303	Applied Matrix Algebra	15	S2	Campus	P: One of MATH 203, EMTH 211, or DATA 203 R: MATH 352, EMTH 412
MATH 353	Computational Mathematics and Applications	15	S1	Campus	P: 1) Either MATH 201 or EMTH 210; AND 2) One of MATH 202, MATH 203, MATH 240, MATH 270, EMTH 211 or EMTH 271. With the permission of the Head of School a high grade in either MATH 201 or EMTH 210 will suffice. R: EMTH 414

SENG 201	Software Engineering I	15	S1	Campus	P: (1) COSC 121 or COSC 131; (2) COSC 122; (3) 15 points from MATH, STAT or EMTH. MATH 120/ STAT 101 are strongly recommended.
SENG 301	Software Engineering II	15	S1	Campus	P: SENG 201. R: COSC 314, COSC 324 RP: COSC 110 OR COSC 101, ENCE 260.
STAT 101	Statistics 1	15	SU2	Campus	R: STAT 111, STAT 112, DIGI 103 EQ: STAT 111, STAT 112, DIGI 103
			S1	Campus	
			S2	Campus	
STAT 201	Applied Statistics	15	S1	Campus	P: STAT 101 or 15 points from 100-level MATH or EMTH (excluding MATH 110) R: FORE 210, STAT 220, FORE 222, STAT 222
STAT 202	Regression Modelling	15	S2	Campus	P: STAT 101 or 15 points from 100-level MATH or EMTH (excluding MATH 110) R: FORE 210, STAT 220, FORE 224, STAT 224
STAT 211	Random Processes	15	S1	Campus	P: 15 points from MATH 102, EMTH 118 or MATH 199; and another 15 points from 100-level STAT, MATH or EMTH (excluding MATH 101 & MATH 110) R: STAT 216
STAT 213	Statistical Inference	15	S2	Campus	P: 15 points from MATH 102, EMTH 118 or MATH 199; and another 15 points from 100-level STAT, MATH or EMTH (excluding MATH 101 & MATH 110) R: STAT 214
STAT 221	Introduction to Statistical Computing Using R	15	S2	Campus	P: 15 points from MATH 102, EMTH 118 or MATH 199; and another 15 points from 100-level STAT, MATH or EMTH (excluding MATH 101 & MATH 110) R: STAT 218
STAT 314	Bayesian Inference	15	S2	Campus	P: 15 points from 200-level MATH or EMTH, STAT 210-299 or DATA 203
STAT 315	Multivariate Statistical Methods	15	S1	Campus	P: 15 points from MATH 102, EMTH 118 or MATH 199; and 15 points from 200-level STAT; and a further 15 points from 200-level STAT, or DATA 203 or MATH 103.
STAT 317	Time Series Methods	15	S2	Campus	P: 15 points from MATH 102, EMTH 118 or MATH 199; and another 30 points from 200-level STAT or ECON 213 R: ECON 323, FINC 323
STAT 318	Data Mining	15	S1	Campus	P: 15 points from MATH 102, EMTH 118 or MATH 199; and another 30 points from 200-level STAT, COSC, DATA, MATH or EMTH
			S2	Campus	

Forestry Science

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
FORE 102	Forests and Societies	15	S1	Distance Learning	P: Head of School approval to enrol required. R: FORE 101, FORE 103, FORE 104, FORE 111, FORE 121
			S2	Distance Learning	
FORE 111	Trees, Forests and the Environment	15	S1	Campus	R: FORE 101, FORE 102, FORE 103, FORE 104, FORE 105, FORE 121

FORE 218	Forest Biology	30	S1	Campus	P: FORE 111 and BIOL 112; or subject to approval by the Chair Board of Studies. R: FORE 202 RP: BIOL 111 (BCHM 111), and/or BIOL 113, and/or BIOL 116
FORE 219	Introduction to Silviculture	15	S2	Campus	P: BIOL 112 and BIOL 113, or FORE 111, 131 and 141. R: PAMS 202, BIOL 252, FORE 214

Geography

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
GEOG 106	Global Environmental Change	15	S2	Campus	R: GEOG 103
GEOG 109	Physical Geography: Earth, Ocean, Atmosphere	15	NO		
GEOG 110	People, Places and Environments	15	S1	Campus	R: GEOG 107
GEOG 201	Environmental Processes: Principles and Applications	15	S1	Campus	P: Any 30 points of 100-level Geography, or entry with approval of the Head of School R: GEOG 201 prior to 2009.
GEOG 205	Introduction to Geographic Information Systems and Science	15	S1	Campus	P: 45 points at 100-level or above, from any degree schedule. R: DIGI 205 and GISC 422
GEOG 206	Resource and Environmental Management	15	S2	Campus	P: Any 30 points of 100-level geography, or GEOG 106 and ENVR 101, or entry with approval of the Head of School.
GEOG 208	Remote sensing for geospatial analysis	15	S2	Campus	P: Any 30 points of 100-level Science, Engineering or Commerce R: GEOG 313
GEOG 211	Environmental Processes: Research Practice	15	S1	Campus	P: Any 30 points of 100-level geography, or entry with the approval of the Head of School. C: GEOG 201 R: GEOG 201 prior to 2009
GEOG 213	The EU, Globalization and Migration	15	NO		P: Any 30 points of 100-level Geography, or any 90 points approved by the Head of School. R: EURO 223, EURA 223 EQ: EURA 223
GEOG 215	Environmental Hazards and Disasters	15	S2	Campus	P: 30 points of Geography or Geological Sciences at 100-level; or 30 points from Science, Arts, Commerce, or Engineering. R: GEOG 305
GEOG 217	Places for Wellbeing and Flourishing	15	S2	Campus	P: Any 30 points at 100-level from any subject, normally including GEOG 110 or GEOG 106.
GEOG 222	Transport, Urban Development and Wellbeing	15	S1	Campus	P: 45 pts of 100-level including GEOG 110 or GEOG 106
GEOG 224	Language and Space	15	NO		P: Any 15 points at 100-level from LING, GEOG or DIGI. R: DIGI 224, LING 224 EQ: DIGI 224, LING 224
GEOG 309	Research for Resilient Environments and Communities	30	S2	Campus	P: 30 points of GEOG at 200-level, or GEOG 206 and ENVR 201 R: GEOG 204, GEOG 303
GEOG 310	Weather Systems	15	NO		P: 30 points of 200-level Geography, including GEOG 201, or in special cases with approval of the Head of School.

GEOG 311	Coastal Studies	15	S1	Campus	P: 30 points of 200-level Geography, including GEOG 201, or in special cases with approval of the Head of School.
GEOG 312	Snow, Ice and Climate	15	S2	Campus	P: 30 points of 200-level Geography, including GEOG 201, or in special cases with approval of the Head of School.
GEOG 321	European Integration From Community to Union	30	S1	Campus	P: One of: (a) 15 points with a B average in any Arts subject; or (b) any 15 points in GEOG at 200-level; or (c) 15 points of EURO at 200-level with a B Pass; or (d) 30 points of EURO at 200-level; or (e) any 45 points from the Arts Schedule at 200-level. R: EURO 210, EURO 310, EURA 210, EURA 310 EQ: EURA 310
GEOG 323	Geospatial Analysis in the Social and Environmental Sciences	15	S1	Campus	P: 30 points of 200-level Geography, including GEOG 205, or in special cases with approval of the Head of School.
GEOG 324	Web GIS and Geoinformatics	15	S2	Campus	P: 30 points of 200-level Geography, including GEOG 205, or in special cases with approval of the Head of School. RP: COSC 121, or equivalent introductory programming course.
GEOG 325	Health, Wellbeing and Environment	15	S1	Campus	P: 30 points of Geography at 200-level; or 30 points from Science, Arts or Health Sciences. R: GEOG 322
GEOG 333	Geospatial sensing using embedded computers	15	NO		P: GEOG 205 and ENCE 260 (or equivalents/ relevant experience)
GEOG 340	Field Based Geomorphic Applications	15	NO		P: 30 points of 200-level Geography, including GEOG 201, or in special cases with approval of the Head of School.
GEOG 345	Special Topic	15	NO		P: 30 points of 200-level Geography or entry with the approval of the Head of School.
GEOG 351	Rethinking Development	15	S2	Campus	P: Any 30 points of 200-level Geography, or approval of the Head of School. R: GEOG 212
GISC 101	Introduction to Spatial Data Science	15	S2	Campus	

Geology

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
GEOL 111	Planet Earth: An Introduction to Geology	15	SU1	Campus	R: ENCI 271
			S1	Campus	
GEOL 113	GeoHazards	15	S2	Campus	
GEOL 115	The Dynamic Earth System	15	S2	Campus	R: GEOL 112 RP: GEOL 111
GEOL 237	Special Topic	15	S1	Campus	P: Subject to approval of the Head of School.
			S2	Campus	
GEOL 240	Field Studies A - Mapping	15	S1	Campus	P: GEOL 111 and any 15 points at 100-level from GEOL. C: 15 points from any of GEOL 242-246 offered in the same semester

GEOL 241	Field Studies B - Field Techniques	15	S2	Campus	P: GEOL 111 and any 15 points at 100-level from GEOL. C: 15 points from any of GEOL 242-246 offered in the same semester R: GEOL 231
GEOL 242	Rocks, Minerals and Ores	15	S1	Campus	P: GEOL 111 and any 15 points at 100-level from GEOL.
GEOL 243	Depositional Environments and Stratigraphy	15	S1	Campus	P: GEOL 111 and any 15 points at 100-level from GEOL.
GEOL 244	Structural Geology and Global Geophysics	15	S2	Campus	P: GEOL 111 and any 15 points at 100-level from GEOL.
GEOL 246	Earth Surface Dynamics	15	S2	Campus	P: 30 points from GEOL, MATH, EMTH, ENVR, PHYS at 100-level, or (GEOG 106 and 15 points from GEOL, MATH, EMTH, ENVR, PHYS at 100-level). RP: GEOL 111; GEOL 113; GEOG 106; 100-level MATH
GEOL 260	Independent Course of Study	15	NO		P: GEOL 111, and GEOL 113 or GEOL 115 R: GEOL 240
GEOL 331	Principles of Basin Analysis	15	S2	Campus	P: GEOL 243 and any 15 points at 200-level from GEOL
GEOL 336	Magmatic Systems and Volcanology	15	S2	Campus	P: GEOL 242 and any 15 points at 200-level from GEOL
GEOL 337	Geothermal and Ore Exploration	15	S1	Campus	P: GEOL 242 and any 15 points at 200-level from GEOL
GEOL 338	Engineering and Mining Geology	15	S2	Campus	P: GEOL 242 and GEOL 246
GEOL 339	Special Topic	15	S1	Campus	P: Subject to approval of the Head of School
GEOL 340	Special Topic	15	S1	Campus	P: Subject to approval of the Head of School
			S2	Campus	
GEOL 342	Special Topic	15	S1	Campus	P: Subject to approval of the Head of School
GEOL 343	Special Topic	15	S1	Campus	P: Subject to approval of the Head of School
			S2	Campus	
GEOL 351	Advanced Field Techniques	15	S1	Campus	P: (1) GEOL 240 and GEOL 241, and (2) GEOL 243 (3) 30 points from other GEOL 200-level courses. C: 15 points from GEOL 331-357 offered in the same semester.
GEOL 352	Advanced Field Mapping	15	X	Campus	P: (1) GEOL 240 and GEOL 241, and (2) GEOL 244 (3) 30 points from other GEOL 200-level courses. C: 15 points from GEOL 331-357 offered in the same semester.
GEOL 354	Geodynamics and Geohazards	15	S1	Campus	P: Any 45 points at 200-level from GEOL.
GEOL 356	Field-focused Research Methods	30	X	Campus	P: Subject to approval of the Head of School. R: ENVR 356
			S2	Campus	
GEOL 357	Topics in New Zealand Geology	15	S2	Campus	P: Any 45 points at 200-level from GEOL.

Health Sciences

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
HLTH 101	Introduction to Health Studies	15	S1	Campus	
			S1	Distance Learning	
HLTH 201	Health Promotion	15	S2	Campus	P: Any 60 points at 100-level from any subject, or any 30 points at 100-level from HLTH or SPCO
HLTH 301	Evidence in Health	30	S2	Campus	P: Any 30 points at 200-level from Health Science (HLTH, HLPa and HLED).

Linguistics

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
LING 101	The English Language	15	SU2	Distance Learning	R: ENGL 123, ENLA 101
			S1	Campus	
			S1	Distance Learning	
LING 102	Language and Society in New Zealand and Beyond	15	S2	Distance Learning	R: ENLA 102 EQ: ENLA 102
			S2	Campus	
LING 104	European Languages in Europe and Beyond	15	NO		R: EULC 104, EURO 104, EURA 104 EQ: EURA 104
LING 210	Sociolinguistic methods	15	S2	Campus	P: Any 15 points at any level from any subject. R: LING 203, ENLA 210
			S2	Distance Learning	
LING 215	Phonetics: The sounds of speech	15	S1	Campus	P: Any 15 points at any level from LING. R: CMDS 231
			S1	Distance Learning	
LING 216	Phonology and Morphology	15	S2	Campus	P: Any 15 points at any level from LING. R: LING 207, LING 302
			S2	Distance Learning	
LING 217	Grammatical structure	15	S2	Campus	P: Any 15 points at any level from LING. R: LING 201, LING 206, LING 211
			S2	Distance Learning	
LING 219	Language Acquisition	15	S1	Campus	P: Any 15 points at any level from any subject. R: CMDS 221, LING 205
			S1	Distance Learning	
LING 223	Text Analytics	15	S1	Campus	P: 15 points at any level from any subject. R: DIGI 223 EQ: DIGI 223
			S1	Distance Learning	
LING 224	Language and Space	15	NO		P: Any 15 points at 100-level from LING, GEOG or DIGI. R: DIGI 224, GEOG 224 EQ: DIGI 224, GEOG 224
LING 225	Forensic Linguistics	15	S2	Campus	P: Any 15 points at any level from any subject.
			S2	Distance Learning	
LING 230	Special Topics in Linguistics	15	NO		P: Any 15 points at any level from any subject.

LING 306	Topics in Syntactic Theory	30	S1	Campus	P: LING 217
			S1	Distance Learning	
LING 307	Topics in Phonetics and Phonology	30	S2	Campus	P: LING 215 R: LING 301, LING 311
			S2	Distance Learning	
LING 309	Topics in Morphology and Word Formation	30	NO		P: LING 201 or LING 206 or LING 211 or LING 216 or LING 217
LING 310	Linguistic Research and New Zealand English	30	S2	Campus	P: Any 15 points at 200-level from LING. R: ENLA 310
			S2	Distance Learning	
LING 315	Special Topic: Natural Language Processing	15	NO		P: COSC 262
LING 320	History of English	30	S1	Campus	P: LING 101 and any 15 points at 200-level from any subject. R: LING 220, ENLA 320 RP: Any LING 200-level course
			S1	Distance Learning	

Mathematics

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
MATH 101	Methods of Mathematics	15	S1	Campus	R: MATH 199
			S2	Campus	
MATH 102	Mathematics 1A	15	S1	Campus	P: 1. MATH 101, or 2. NCEA 14 Credits at level 3 Mathematics, or 3. Cambridge: D at A level or an A at AS level in Mathematics, or 4. IB: 4 at HL or 5 at SL in Mathematics, or 5. Approval of the Head of School based on alternative prior learning. R: MATH 108, MATH 199, EMTH 118
			S2	Campus	
MATH 103	Mathematics 1B	15	S2	Campus	P: MATH 102 or EMTH 118 R: MATH 109, MATH 199, EMTH 119
MATH 110	Foundations of Applied Mathematics and Statistics	15	S1	Campus	R: EMTH 118, MATH 101, MATH 102, MATH 199, STAT 101
			S2	Campus	
MATH 120	Discrete Mathematics	15	SU2	Campus	P: 1. MATH 101 or MATH 102 or EMTH 118, or 2. NCEA 14 Credits (18 strongly recommended) at level 3 Mathematics, or 3. Cambridge: D at A level or an A at AS level in Mathematics, or 4. IB: 4 at HL or 5 at SL in Mathematics, or 5. approval of the Head of School based on alternative prior learning. R: MATH 115
			S2	Campus	
MATH 130	Introduction to Logic and Computability	15	NO		R: MATH 134, PHIL 134, PHIL 138
MATH 170	Mathematical Modelling and Computation	15	NO		R: MATH 171, EMTH 171 RP: It is strongly recommended that students should have passed EMTH 118 or MATH 102 before taking EMTH 171/MATH 170. A prior or concurrent enrolment in EMTH 119 or MATH 103 is also recommended. If you are taking EMTH 171/MATH 170 concurrently with EMTH 118 or MATH 102, you are likely to experience difficulties and need to put in extra work.

MATH 199	AIMS - Advancing in Mathematical Sciences	30	W W	Campus Distance Learning	P: Subject to approval of the Head of School. R: MATH 102, MATH 103, EMTH 118, EMTH 119.
MATH 201	Multivariable Calculus	15	S1	Campus	P: MATH 103 or MATH 199 or EMTH 119 R: MATH 261, MATH 264, EMTH 202, EMTH 204, EMTH 210
MATH 202	Differential Equations	15	S2	Campus	P: MATH 103 or MATH 199 or EMTH 119 R: MATH 262, MATH 264, EMTH 202, EMTH 204
MATH 203	Linear Algebra	15	S1	Campus	P: MATH 103 or EMTH 119 or MATH 199 R: MATH 252, MATH 254, EMTH 203, EMTH 204, EMTH 211, DATA 203
MATH 220	Discrete Mathematics and Cryptography	15	S1	Campus	P: One of MATH 102, MATH 103, MATH 120, MATH 199, EMTH 118 or EMTH 119. R: MATH 221, MATH 231
MATH 230	Logic, Automata, and Computability	15	S2	Campus	P: 15 points from MATH 102-199, and a further 15 points from 100-level COSC, EMTH, MATH, PHIL or STAT courses, excluding COSC 110 and MATH 101. R: MATH 208, MATH 308, PHIL 208 (prior to 2014), PHIL 210, PHIL 308 (prior to 2014). EQ: PHIL 210
MATH 240	Analysis and Groups	15	S2	Campus	P: MATH 103, MATH 199 or EMTH 119. R: MATH 222, MATH 243
MATH 270	Mathematical Modelling and Computation 2	15	S2	Campus	P: (MATH 170 or EMTH 171 or MATH 280 or COSC 121 or Head of School approval) and (EMTH 119 or MATH 103 or MATH 199) R: EMTH 271, MATH 271
MATH 280	Introduction to Scientific Computation	15	NO		P: MATH 103, MATH 199 or EMTH 119 R: MATH 281, MATH 282
MATH 302	Partial Differential Equations	15	S1	Campus	P: (MATH 201 and MATH 202) or EMTH 210 R: MATH 361, EMTH 391, EMTH 413
MATH 303	Applied Matrix Algebra	15	S2	Campus	P: One of MATH 203, EMTH 211, or DATA 203 R: MATH 352, EMTH 412
MATH 320	Discrete Mathematics	15	S1	Campus	P: 30 points from MATH 201, MATH 202, MATH 203, MATH 220, MATH 240, EMTH 210, EMTH 211. R: MATH 333, MATH 334
MATH 321	Rings and Fields	15	S1	Campus	P: One of MATH 203, MATH 220, MATH 240, or EMTH 211, and a further 15 points from MATH 201-294. R: MATH 439, MATH 311
MATH 324	Cryptography and Coding Theory	15	S2	Campus	P: One of MATH 203, MATH 220 or MATH 240, and a further 15 points from MATH 201-294. R: MATH 391
MATH 335	Computability Theory	15	NO		P: 1) MATH 230 and (COSC 222 or COSC 261); or 2) 30 points in MATH or EMTH at 200-level, as approved by the Head of School; or 3) MATH 230 and, with the approval of the Head of School, an appropriate Philosophy course.
MATH 336	Foundations of Mathematics	15	NO		P: 30 points in MATH or EMTH at 200-level, as approved by the Head of School. R: MATH 208, MATH 308
MATH 343	Metric, Normed and Hilbert Spaces	15	S1	Campus	P: 30 points from MATH 201, MATH 202, MATH 203, MATH 240, MATH 270, EMTH 210, EMTH 211 or EMTH 271.

MATH 353	Computational Mathematics and Applications	15	S1	Campus	P: 1) Either MATH 201 or EMTH 210; AND 2) One of MATH 202, MATH 203, MATH 240, MATH 270, EMTH 211 or EMTH 271. With the permission of the Head of School a high grade in either MATH 201 or EMTH 210 will suffice. R: EMTH 414
MATH 363	Dynamical Systems	15	S2	Campus	P: MATH 201 or EMTH 210 and a further 15 points from (EMTH 211, EMTH 271, MATH 202, MATH 203, MATH 240, MATH 270). R: EMTH 415
MATH 365	Applications of Complex Variables	15	S2	Campus	P: MATH 201 or MATH 240; or, a high level of achievement in EMTH 210 with Head of School approval R: MATH 342
MATH 380	Mathematics in Perspective	15	S2	Campus	P: 30 points in Mathematics or Statistics or Engineering Mathematics at 100-level. 45 points from the BA or BSc Schedule at 200-level in Mathematics, Statistics, Engineering Mathematics, related subjects, or other subjects with good grades, as approved by the Head of School. R: MATH 301, MATH 433, HAPS 405
MATH 391	Special Topic	15	S1	Campus	P: Subject to the approval of the Head of School.
MATH 392	Special Topic	15	S2	Campus	P: Subject to the approval of the Head of School.
MATH 393	Independent Course of Study	15	S1	Campus	P: Subject to approval of the Head of School.
MATH 394	Independent Course of Study	15	S2	Campus	P: Subject to the approval of the Head of School.
MATH 395	Mathematics Project	15	SU2	Campus	P: Subject to approval of the Head of School R: MATH 305

Philosophy

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
PHIL 110	Science: Good, Bad, and Bogus	15	S1	Distance Learning	R: HAPS 110
				Campus	
PHIL 111	Philosophy, Sex, and Thinking	15	NO		
PHIL 132	God, Mind, and Freedom	15	S2	Campus	R: PHIL 101
PHIL 133	Philosophy and Human Nature	15	S2	Campus	
PHIL 137	Computers, Artificial Intelligence, and the Information Society	15	NO		R: POLS 137, DIGI 102 EQ: POLS 137, DIGI 102
PHIL 138	Logic and Critical Thinking	15	SU1	Distance Learning	R: PHIL 132 (prior to 2006), MATH 130, PHIL 134/ MATH 134
				Campus	
PHIL 139	Ethics, Politics and Justice	15	S2	Campus	
				Distance Learning	
PHIL 203	Dinosaurs, Quarks and Quasars: The Philosophy of Science	15	S1	Campus	P: Any 15 points at 100-level in PHIL, or any 60 points at 100-level from the Schedule V of the BA or the BSc. R: PHIL 223, PHIL 303
				Distance Learning	

PHIL 208	The Brain Gym: An Introduction to Logic	15	S1	Campus	P: Any 15 points at 100-level in PHIL, COSC, LING, MATH, or from the BE(Hons), or any 60 points at 100-level from any subject. R: PHIL 225, PHIL 246, PHIL 346, PHIL 308, MATH 208, MATH 308
PHIL 210	Logic, Automata, and Computability	15	NO		P: Any 15 points at 100-level from MATH or PHIL, or any 60 points at 100-level from the Schedule V of the BA. R: MATH 230
PHIL 224	Greek Philosophy	15	NO		P: Any 15 points at 100-level from CLAS or PHIL, or any 60 points at 100-level from the Schedule V of the BA. R: CLAS 224, CLAS 324, PHIL 314 EQ: CLAS 224
PHIL 229	Philosophy of Religion: Rationality, Science, and the God Hypothesis	15	S2	Campus	P: Any 15 points at 100-level in PHIL, or any 60 points at 100-level from the Schedule V of the BA or the BSc. R: RELS 210, PHIL 318
PHIL 233	Epistemology and Metaphysics	15	S2	Campus	P: Any 15 points at 100-level in PHIL, or any 60 points at 100-level from the Schedule V of the BA or the BSc.
			S2	Distance Learning	
PHIL 235	Cyberspace, Cyborgs, and the Meaning of Life	15	NO		P: Any 15 points at 100-level in PHIL, COSC, DIGI, or MATH, or any 60 points at 100-level from the Schedule V of the BA or the BSc. R: PHIL 335, DIGI 202, DIGI 302 EQ: DIGI 202
PHIL 236	Ethics	15	S1	Campus	P: Any 15 points at 100-level from PHIL, or any 60 points at 100-level from the Schedule V of the BA. R: PHIL 321
PHIL 240	Bioethics: Life, Death, and Medicine	15	S2	Campus	P: Any 15 points at 100-level in PHIL, HSRV, HLTH, LAWS, or POLS, or any 60 points at 100-level from the Schedule V of the BA or the BSc. R: PHIL 324, POLS 225
			S2	Distance Learning	
PHIL 249	Environmental Ethics	15	SU1	Distance Learning	P: Any 15 points at 100-level in PHIL, or any 60 points at 100-level from the Schedule V of the BA or the BSc. RP: 15 points of 100-level Philosophy, or 30 points or more of humanities, social science, science, engineering, economics, or commerce studies and an interest in reflective critical debate.
			SU1	Campus	
PHIL 250	Turing: From the Computer Revolution to the Philosophy of AI	15	S2	Campus	P: Any 15 points at 100-level in PHIL, COSC, LING, MATH, or PSYC, or any 60 points at 100-level from the Schedule V of the BA or the BSc. R: COSC 260 EQ: COSC 260
PHIL 303	Quarks, Quasars and Dinosaurs: The Philosophy of Science	15	S1	Campus	P: Any 30 points at 200-level in PHIL, or any 60 points at 200-level from the Schedule V of the BA or BSc. R: PHIL 203
			S1	Distance Learning	
PHIL 305	Paradoxes	30	S2	Campus	P: Any 30 points at 200-level in PHIL, COSC, or MATH, or any 60 points at 200-level from the Schedule V of the BA or BSc. R: PHIL 494, PHIL 444

PHIL 308	The Brain Gym: An Introduction to Logic	15	S1	Campus	P: Any 30 points at 200-level in PHIL, COSC, LING, MATH or from the BE(Hons), or any 60 points at 200-level from the Schedule V of the BA or BSc. R: PHIL 225, PHIL 246, PHIL 346, PHIL 208, MATH 208, MATH 308
PHIL 310	History of Philosophy	30	S2	Distance Learning	P: Any 30 points at 200-level from PHIL, or any 60 points at 200-level from the Schedule V of the BA. R: PHIL 464, PHIL 497
			S2	Campus	
PHIL 311	Meaning, Mind, and the Nature of Philosophy	30	S1	Campus	P: Any 30 points at 200-level from PHIL, or any 60 points at 200-level from the Schedule V of the BA or the BSc. R: PHIL 464, PHIL 497
			S1	Distance Learning	
PHIL 314	Greek Philosophy	30	NO		P: Any 30 points at 200-level from CLAS or PHIL, or any 60 points at 200-level from the Schedule V of the BA. R: PHIL 224, CLAS 224, CLAS 324 EQ: CLAS 324
PHIL 317	Contemporary Political Philosophy	30	NO		P: Any 30 points at 200-level from PHIL or POLS, or any 60 points at 200-level from the Schedule V of the BA. R: POLS 301, POLS 351
PHIL 318	Philosophy of Religion: Rationality, Science, and the God Hypothesis	30	S2	Campus	P: Any 30 points at 200-level from PHIL, or any 60 points at 200-level from the Schedule V of the BA or the BSc. R: RELS 210 and PHIL 229
PHIL 320	Special Topic	15	NO		P: Any 30 points at 200-level from PHIL, or any 60 points at 200-level from the Schedule V of the BA. R: HLTH 407
PHIL 321	Ethics	15	S1	Campus	P: Any 30 points at 200-level from PHIL, or any 60 points at 200-level from the Schedule V of the BA. R: PHIL 236
PHIL 324	Bioethics: Life, Death, and Medicine	15	S2	Campus	P: Any 30 points at 200-level in PHIL, LAWS, HLTH, or any 60 points at 200-level from the Schedule V of the BA. R: PHIL 240, POLS 225 RP: PHIL 139 or PHIL 236
			S2	Distance Learning	
PHIL 335	Cyberspace, Cyborgs and the Meaning of Life	15	NO		P: Any 30 points at 200-level in PHIL, PSYC, DIGI, MATH or COSC, or any 60 points at 200-level from the Schedule V of the BA or the BSc. R: PHIL 235, DIGI 202, DIGI 302 EQ: DIGI 302
PHIL 343	Landmarks of Analytic Philosophy	15	NO		P: Any 30 points at 200-level from PHIL, or any 60 points at 200-level from the Schedule B of the BA. R: PHIL 493

Physics

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
ASTR 332	Theoretical and Observational Cosmology	15	S1	Campus	P: (1) PHYS 205 and PHYS 203; and (2) MATH 103 or MATH 109 or EMTH 119 or MATH 201. R: ASTR 422, ASTR 322 RP: MATH 202
CHEM 251	Foundations of Materials Science and Nanotechnology	15	S2	Campus	P: CHEM 211 or (CHEM 111 and PHYS 102) R: CHEM 241 and CHEM 245
COSC 131	Introduction to Programming for Engineers	15	S1	Campus	R: COSC 121
			S2	Campus	
			SU2	Campus	
ENEL 270	Principles of Electronics and Devices	15	S1	Campus	P: PHYS 102, MATH 103 or EMTH 119; or Approval of the Dean of Engineering and Forestry R: ENEL 203
ENVR 356	Field-focused Research Methods in Environmental Science	30	X	Campus	P: Enrolment in the Frontiers Abroad programme and Head of School approval. R: GEOL 356. This course is not open to non-Frontiers Abroad students RP: Completion of course(s) at home institution in the broader field of Earth Systems Science and Environmental Science and Studies.
			S2	Campus	
PHYS 101	Engineering Physics A: Mechanics, Waves, Electromagnetism and Thermal Physics	15	S1	Campus	P: 1) a) PHYS 111 or NCEA 14 credits (18 credits strongly recommended) at level 3 Physics, and b) MATH 101 or 14 Credits (18 credits strongly recommended) at level 3 Mathematics (including the standards 'Apply differentiation methods in solving problems (91578)' and 'Apply integration methods in solving problems(91579)'), or 2) Cambridge: D at A level or an A at AS level in both Physics and Mathematics, or 3) IB: 4 at HL or 6 at SL in both Physics and Mathematics, or 4) approval of the Head of School based on alternative prior learning. R: PHYS 113, PHYS 112 EQ: PHYS 113
			S2	Campus	
PHYS 102	Engineering Physics B: Modern Physics and Electromagnetism (2)	15	SU2	Campus	P: PHYS 101. These prerequisites may be replaced by other background as approved by Head of School R: PHYS 114, PHYS 115 EQ: PHYS 114
			S2	Campus	
PHYS 109	The Cosmos: Birth and Evolution	15	NO		R: (1) ASTR 109. (2) Students who have been credited with ASTR 112 cannot subsequently be credited with PHYS 109. EQ: ASTR 109
PHYS 111	Introductory Physics for Physical Sciences and Engineering	15	S1	Campus	R: Students who have been credited with any of PHYS 101, PHYS 102, PHYS 113 or PHYS 114 cannot subsequently be credited with PHYS 111.
			S2	Campus	
PHYS 203	Relativistic and Quantum Physics	15	S2	Campus	P: (1) PHYS 102 or (PHYS 101 and CHEM 211); (2) MATH 102 or EMTH 118. These prerequisites may be replaced by a high level of achievement in Level 3 NCEA Physics and Mathematics with Calculus or other background approved by the Head of School. R: PHYS 222 RP: MATH 103 or EMTH 119.

PHYS 205	Waves, Optics and Mechanics	15	S1	Campus	P: (1) PHYS 101; (2) MATH 102 or EMTH 118. These prerequisites may be replaced by a high level of achievement in level 3 NCEA Physics and Mathematics with Calculus or other background approved by the Head of School. R: PHYS 201, PHYS 202 RP: (1) PHYS 102; (2) MATH 103 or EMTH 119; (3) COSC 131 or COSC 121.
PHYS 206	Electromagnetism and Materials	15	S2	Campus	P: (1) PHYS 102 or (PHYS 101 + CHEM 211); (2) MATH 102. These prerequisites may be replaced by a high level of achievement in level 3 NCEA Physics and Mathematics with Calculus or other background approved by the Head of School. R: PHYS 202, PHYS 314 RP: MATH 103 or EMTH 119.
PHYS 208	Special Topic	15	NO		P: Admission only by permission of the Head of School
PHYS 209	Special Topic	15	NO		P: Admission only by permission of the Head of School
PHYS 285	Technical and Professional Skills for Physicists	15	S1	Campus	P: (1) PHYS 101; and (2) MATH 102 or EMTH 118; and (3) COSC 131 or COSC 121 or another approved course in computer programming. These prerequisites may be replaced by a high level of achievement in level 3 NCEA Physics and Mathematics with Calculus or other background approved by the Head of School. R: PHYS 281, PHYS 282 RP: (1) PHYS 102; and (2) MATH 103 or EMTH 119
PHYS 310	Thermal, Statistical and Particle Physics	15	S1	Campus	P: (1) PHYS 203; (2) MATH 103 or EMTH 119 or MATH 201. R: PHYS 204, PHYS 440 RP: MATH 201
PHYS 311	Quantum Mechanics	15	S1	Campus	P: (1) PHYS 203 or (PHYS 206 and CHEM 251); (2) MATH 103 or EMTH 119 or MATH 201. RP: MATH 201 and MATH 203
PHYS 313	Advanced Electromagnetism and Materials	15	S2	Campus	P: (1) PHYS 206; (2) PHYS 203 or CHEM 211; (3) MATH 103 or EMTH 119 or MATH 201. R: PHYS 312, PHYS 314, PHYS 443 RP: MATH 201
PHYS 319	Atmospheric, Oceanic and Climate Dynamics	15	S2	Campus	P: (1) PHYS 201 or PHYS 205; (2) PHYS 202 or PHYS 203 or PHYS 206 (3) MATH 103 or EMTH 119 or MATH 201. R: PHYS 316, PHYS 418, PHYS 419 RP: MATH 202
PHYS 323	Laser Physics and Modern Optics	15	S1	Campus	P: 1) PHYS 203; (2) PHYS 206; (3) MATH 103 or MATH 109 or EMTH 119 or MATH 201. R: PHYS 413 RP: PHYS 205, MATH 201
PHYS 326	Classical Mechanics and Symmetry Principles	15	S1	Campus	P: (1) PHYS 202 or PHYS 205; (2) PHYS 203; (3) MATH 201 RP: MATH 202 and MATH 203
PHYS 327	Special Topic	15	NO		P: (1) Subject to approval of the Head of School; (2) MATH 103 or MATH 109 or equivalent.
PHYS 328	Special Topic	15	NO		P: (1) Subject to approval of the Head of School.; (2) MATH 103 or MATH 109 or equivalent.

PHYS 329	Special Topic: Physics in Industry Project	15	W	Campus	P: (1) Subject to approval of the Head of School; (2) MATH 103 or MATH 109 or equivalent. C: The Head of School approved programme of study for the year must include PHYS 381 or ASTR 381. R: ENME 408, ENEL 400, ENMT 401
PHYS 330	Environmental and climate modelling	15	NO		P: (COSC 121 or EMTH 171 or BIOL 209) AND (PHYS 285 or ENVR 201 or GEOG 201) R: PHYS 430
PHYS 381	Advanced Experimental Physics and Astronomy	15	S2	Campus	P: (1) PHYS 285; (2) 30 points from PHYS 201-206 including either PHYS 202 or PHYS 205; (3) MATH 103 or EMTH 119 or MATH 201. R: ASTR 381 RP: MATH 201 EQ: ASTR 381
PHYS 391	Introductory Physics Research	15	SU2	Campus	P: (1) MATH 103 or MATH 109 or equivalent (2) 44 points from PHYS 200 (3) Entry subject to a supervisor approved by the Head of School, being available
			S1	Campus	
			S2	Campus	

Product Design

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
PROD 131	Introduction to Formulation Science	15	S2	Campus	P: Any 15 points of CHEM

Psychology

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
PSYC 105	Introductory Psychology - Brain, Behaviour and Cognition	15	S1	Campus	R: PSYC 103, PSYC 104
PSYC 106	Introductory Psychology - Social, Personality and Developmental	15	SU1	Distance Learning	R: PSYC 103, PSYC 104
			S2	Campus	
PSYC 206	Research Design and Statistics	15	SU2	Distance Learning	P: At least 15 points in 100-level Psychology and at least 45 points overall
			S1	Campus	
PSYC 207	Developmental Psychology	15	S1	Campus	P: PSYC 104, or PSYC 105 and PSYC 106
PSYC 208	Cognition	15	S2	Campus	P: PSYC 104, or PSYC 105 and PSYC 106, or with the approval of the Head of School, a pass in a professional year of Engineering, or in approved courses in Computer Science, Linguistics, or Philosophy
PSYC 209	Sensation and Perception	15	S1	Campus	P: PSYC 104, or PSYC 105 and PSYC 106, or with the approval of the Head of School, a pass in a professional year of Engineering, or in approved courses in Art, Art History, or Computer Science
PSYC 211	Personality	15	S2	Campus	P: PSYC 104, or PSYC 105 and PSYC 106
PSYC 212	Foundations of Behavioural Neuroscience	15	NO		P: PSYC 105 and PSYC 106. RP: BIOL 111 (BCHM 111), and/or BIOL 113, and/or BIOL 116
PSYC 213	Introduction to Social Psychology	15	S2	Campus	P: PSYC 105 and PSYC 106 R: PSYC 332
PSYC 330	Forensic Psychology	15	S2	Campus	P: PSYC 206 or 60 points at 200-level from Schedules C or E of the Bachelor of Criminal Justice.

PSYC 333	Biological Psychology	30	S1	Campus	P: PSYC 206. RP: 15 further points from PSYC 200/300.
PSYC 334	Learning and Behaviour Analysis	30	NO		P: PSYC 206
PSYC 335	Abnormal Psychology	30	W	Campus	P: PSYC 206. RP: PSYC 207, PSYC 211
PSYC 336	Industrial and Organisational Psychology	15	S1	Campus	P: PSYC 206. RP: PSYC 211, 15 further points from PSYC 200
PSYC 339	Health Psychology and Behaviour Change	30	S1	Campus	P: PSYC 206
PSYC 340	Cognitive Psychology	15	S2	Campus	P: PSYC 208
PSYC 341	Environmental Psychology	15	S2	Campus	P: Any 120 points at 100-level from any subject. RP: Any of BIOL 112, GEOG 106, GEOG 107, GEOG 108
PSYC 344	Research Methods	30	S2	Campus	P: PSYC 206
PSYC 346	Judgement and Decision Making	15	S1	Campus	P: PSYC 206, or equivalent preparation
PSYC 348	Contemporary Issues in Family Psychology	15	S1	Campus	P: PSYC 206 or 60 points at 200-level from the Health Sciences or Arts schedule.
PSYC 349	Special Topic	15	S2	Campus	P: PSYC 206

Science

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
SCIE 101	Science, Society and Me	15	S2	Campus	
SCIE 303	Internship	15	NO		P: 105 points, including 45 points at 200-level. Special application and interview, with permission of Internship Manager. RP: Students should attend UC careers CV writing and interview skills workshop prior to submitting internship application

Science, Māori and Indigenous Knowledge

Note: This is an integrated multi-disciplinary course between the Aotahi - School of Māori and Indigenous Studies and Te Rāngai Pūtaiao | College of Science.

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
SCIM 101	Science, Māori and Indigenous Knowledge	15	S2	Campus	R: MAOR 172 EQ: MAOR 172

Soil Science

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
SOIL 203	Soil Fertility	15	S2	Campus	P: 30 points from CHEM, GEOL, BIOL, FORE or by approval Chair Forestry Board of Studies R: SOIL 201

Statistics

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
STAT 101	Statistics 1	15	SU2	Campus	R: STAT 111, STAT 112, DIGI 103 EQ: STAT 111, STAT 112, DIGI 103
				Campus	
				S2	
STAT 201	Applied Statistics	15	S1	Campus	P: STAT 101 or 15 points from 100-level MATH or EMTH (excluding MATH 110) R: FORE 210, STAT 220, FORE 222, STAT 222
STAT 202	Regression Modelling	15	S2	Campus	P: STAT 101 or 15 points from 100-level MATH or EMTH (excluding MATH 110) R: FORE 210, STAT 220, FORE 224, STAT 224
STAT 211	Random Processes	15	S1	Campus	P: 15 points from MATH 102, EMTH 118 or MATH 199; and another 15 points from 100-level STAT, MATH or EMTH (excluding MATH 101 & MATH 110) R: STAT 216
STAT 213	Statistical Inference	15	S2	Campus	P: 15 points from MATH 102, EMTH 118 or MATH 199; and another 15 points from 100-level STAT, MATH or EMTH (excluding MATH 101 & MATH 110) R: STAT 214
STAT 221	Introduction to Statistical Computing Using R	15	S2	Campus	P: 15 points from MATH 102, EMTH 118 or MATH 199; and another 15 points from 100-level STAT, MATH or EMTH (excluding MATH 101 & MATH 110) R: STAT 218
STAT 312	Data Collection and Sampling Methods	15	S1	Campus	P: 30 points from 200-level STAT
STAT 313	Computational Statistics	15	S1	Campus	P: 15 points from 200-level MATH or EMTH, STAT 210-299 or DATA 203
STAT 314	Bayesian Inference	15	S2	Campus	P: 15 points from 200-level MATH or EMTH, STAT 210-299 or DATA 203
STAT 315	Multivariate Statistical Methods	15	S1	Campus	P: 15 points from MATH 102, EMTH 118 or MATH 199; and 15 points from 200-level STAT; and a further 15 points from 200-level STAT, or DATA 203 or MATH 103.
STAT 316	Applied Stochastic Modelling	15	NO		P: 15 points from STAT 211, STAT 212, STAT 221 or MATH 201. R: MATH 376
STAT 317	Time Series Methods	15	S2	Campus	P: 15 points from MATH 102, EMTH 118 or MATH 199; and another 30 points from 200-level STAT or ECON 213 R: ECON 323, FINC 323
STAT 318	Data Mining	15	S1	Campus	P: 15 points from MATH 102, EMTH 118 or MATH 199; and another 30 points from 200-level STAT, COSC, DATA, MATH or EMTH
				S2	
STAT 319	Generalised Linear Models	15	S1	Campus	P: 30 points from STAT 200-299
STAT 391	Special Topic	15	S1	Campus	P: Subject to the approval of the Head of School.
STAT 392	Special Topic	15	S2	Campus	P: Subject to approval of the Head of School.
STAT 393	Independent Course of Study	15	S1	Campus	P: Subject to approval of the Head of School.
STAT 394	Independent Course of Study	15	S2	Campus	P: Subject to approval of the Head of School.
STAT 395	Statistics Project	15	SU2	Campus	P: Subject to approval of the Head of School

Water Resource Management

Course Code	Course Title	Pts	2021	Location	P/C/R/RP/EQ
WATR 201	Freshwater Resources	15	S2	Campus	P: Any 75 points at 100-level
WATR 203	Freshwater Science Field Skills	15	SU2	Campus	P: A freshwater-related course of study or appropriate freshwater-related work experience as determined by the Head of Programme.
WATR 301	Water Resource Management	15	S1	Campus	P: 45 points at 200-level in any subject area.