

Faculty of
Science,
Engineering
and
Information
Technology

Undergraduate
Award Requirements

Undergraduate
Courses and Majors

FACULTY OF SCIENCE, ENGINEERING AND INFORMATION TECHNOLOGY — UNDERGRADUATE AWARD REQUIREMENTS

GENERAL

1.1 *The degrees shall be:*

Bachelor of Applied Modelling ¹	BAppModel
Bachelor of Applied Modelling (Advanced) ²	BAppModel(Adv)
Bachelor of Applied Science	BAppSc
Bachelor of Applied Science with Honours	BAppSc(Hons)
Bachelor of Biotechnology	BBiotech
Bachelor of Business and Environmental Science	BBus&EnvSc
Bachelor of Conservation Biology	BConsBiol
Bachelor of Conservation Biology with Honours	BConsBiol(Hons)
Bachelor of Conservation Biology (Advanced)	BConsBiol(Adv)
Bachelor of Conservation Biology (Advanced) with Honours	BConsBiol(Adv)(Hons)
Bachelor of Engineering	BEng
Bachelor of Engineering with Honours	BEng(Hons)
Bachelor of Environmental Science	BEnvSc
Bachelor of Environmental Science with Honours	BEnvSc(Hons)
Bachelor of Geology	BGeol
Bachelor of Geology with Honours	BGeol(Hons)
Bachelor of Information Technology	BInfTech
Bachelor of Information Technology with Honours	BInfTech(Hons)
Bachelor of Marine Science	BMarSc
Bachelor of Planning	BPlan
Bachelor of Planning with Honours	BPlan(Hons)
Bachelor of Science	BSc
Bachelor of Science with Honours	BSc(Hons)
Bachelor of Science (Advanced)	BSc(Adv)
Bachelor of Tropical Agricultural Science	BTropAgSc
Bachelor of Tropical Agricultural Science with Honours	BTropAgSc(Hons)

1. Course not offered in 2009.
2. Course not offered in 2009.

1.2 *Joint degrees involving Science shall be:*

Bachelor of Arts-Bachelor of Science	BA-BSc
Bachelor of Arts-Bachelor of Science with Honours	BA-BSc(Hons)
Bachelor of Arts with Honours-Bachelor of Science	BA(Hons)-BSc
Bachelor of Arts with Honours-Bachelor of Science with Honours	BA(Hons)-BSc(Hons)
Bachelor of Business-Bachelor of Information Technology	BBus-BInfTech
Bachelor of Commerce-Bachelor of Information Technology ¹	BCom-BInfTech
Bachelor of Education-Bachelor of Science	BEd-BSc
Bachelor of Education-Bachelor of Science with Honours	BEd-BSc(Hons)
Bachelor of Engineering-Bachelor of Science	BEng-BSc
Bachelor of Engineering with Honours-Bachelor of Science	BEng(Hons)-BSc
Bachelor of Psychology-Bachelor of Science	BPsych-BSc
Bachelor of Psychology-Bachelor of Science with Honours	BPsych-BSc(Hons)
Bachelor of Psychology with Honours-Bachelor of Science	BPsych(Hons)-BSc
Bachelor of Psychology with Honours-Bachelor of Science with Honours	BPsych(Hons)-BSc(Hons)
Bachelor of Science-Bachelor of Laws	BSc-LLB
Bachelor of Science-Bachelor of Laws with Honours	BSc-LLB(Hons)
Bachelor of Science with Honours-Bachelor of Laws	BSc(Hons)-LLB
Bachelor of Science with Honours-Bachelor of Laws with Honours	BSc(Hons)-LLB(Hons)

1. Course suspended. No new enrolments will be accepted in this course.

1.3 *There shall be awards of:*

Diploma of Introductory Engineering Studies	DipIntroEngStud
Diploma of Science	DipSc

DEGREES AND DIPLOMAS IN SCIENCE

Application of Requirements

- 2.1 In addition to the Faculty Award Requirements candidates for Awards of the Faculty must comply with the University Requirements for Undergraduate or Postgraduate Coursework Awards listed in this handbook and specific Degree or Certificate Award Requirements.
- 2.2 In exceptional circumstances the Pro-Vice-Chancellor, with the approval of the relevant Head of School, may dispense with or amend any requirements of or prescription by, the University Requirements for Undergraduate and Postgraduate Coursework Awards, Faculty Award Requirements and Degree or Certificate Award Requirements.

Enrolment in Awards

3. A person who holds an award listed in General Requirement 1.1 may not be a candidate for that award in the same discipline.

Enrolment in Subjects

4. Except with faculty permission, granted on the advice of the Head of the appropriate School, a candidate may not:
 - 4.1 enrol for any subject unless a passing grade for any prerequisites listed in the Master Schedule of Subjects has been obtained within the previous four years, or
 - 4.2 enrol for any subject unless the candidate concurrently enrolls for any corequisites listed in the Master Schedule of Subjects for which passing grades have not been obtained in a previous year.

Advanced Standing

- 5.1 Candidates for awards of the faculty may apply to obtain advanced standing as detailed in the Advanced Standing for Previous Studies and Recognised Prior Learning Policy and associated procedures.
- 5.2 Candidates are advised that degree specific Award Requirements may specify advanced standing provisions unique to that degree.
- 5.3 Candidates are advised that such advanced standing obtained may be subject to cancellation as specified within degree specific Award Requirements.

The Grade of Pass Conceded

- 6.1 The grade of Pass Conceded may be recommended by the school directly on the basis of the particular examination. This grade may also be awarded by the faculty following consideration of the student's overall result for the year.
- 6.2 A candidate who is granted the grade of Pass Conceded in a subject shall, for the purposes of Requirement 4.1, be deemed to have passed the subject and shall be credited with the appropriate credit points, but may not enrol for a more advanced subject in any discipline requiring the first as a prerequisite except with the approval of the appropriate Head of School.
- 6.3 The number of credit points that may be credited at Pass Conceded level shall not exceed 18 for a three year degree and the equivalent for degrees of greater length.
- 6.4 A candidate awarded the grade of Pass Conceded may apply to the Head of the School concerned for permission, at the next regular examination in that subject, to attempt to convert that grade to a Pass grade. Such re-examination will not be counted towards aggregate credit points work load for an academic year.
7. The faculty will publish annually a list of subjects available to candidates. The list appears as the Schedule of Science Subjects.
8. In exceptional circumstances the Pro-Vice-Chancellor with the approval of the relevant Head of School, may permit a candidate to graduate with fewer than the minimum stipulated credit points of study for an award offered in the faculty.

DEGREES IN ENGINEERING**Application of requirements**

1. Candidates for Awards in Engineering must comply with (i) the University Requirements for Undergraduate Coursework Awards, (ii) general Faculty Award Requirements and (iii) specific Degree or Diploma Award Requirements.
2. In exceptional circumstances and notwithstanding the University Requirements for Undergraduate Coursework Awards and the Degree or Diploma Award Requirements the faculty may dispense with or amend any conditions specified in the Requirements.

Enrolment in Bachelor degrees

- 3.1 Candidates enrolled in the Bachelor of Engineering, Bachelor of Engineering with Honours, Bachelor of Engineering-Bachelor of Science or Bachelor of Engineering with Honours-Bachelor of Science must specialise in one of the following majors:
 - Chemical
 - Civil
 - Computer Systems
 - Electrical and Electronic
 - Environmental
 - Mechanical.
- 3.2 The engineering thesis topic of a Bachelor of Engineering, Bachelor of Engineering with Honours, Bachelor of Engineering-Bachelor of Science or Bachelor of Engineering with Honours-Bachelor of Science candidate, must be specific to the candidate's chosen engineering major.
- 3.3 Some subjects in each of the majors may require candidates to participate in field trips, site visits or other off-campus activities. A fee may be charged by the School of Engineering for transport or subsistence associated with these trips.

Advanced Standing

- 4.1 Candidates for Bachelor degrees within the School of Engineering may apply to obtain advanced standing for previous study.
- 4.2 The maximum amount of advanced standing granted will be 50% of the credit points required for the award. If the candidate requests advanced standing approaching this maximum level, then the advanced standing should be predominantly from the first two levels of the Bachelor of Engineering program.
- 4.3 A minimum of 18 credit points should be completed at James Cook University for each of levels 3 and 4. The fourth year thesis (six credit points) must be included in this minimum requirement.

- 4.4 Students or prospective students wishing to apply for advanced standing are required to submit a detailed proposal to the School of Engineering. Details of the process can be obtained from:
 - School of Engineering
 - James Cook University Qld 4811

Honours

- 5.1 The Engineering Board of Studies will invite selected candidates to enter either the Bachelor of Engineering with Honours degree or the Bachelor of Engineering with Honours-Bachelor of Science degree at the beginning of their final year of study.
- 5.2 Selections will be based on the weighted Grade Point Average from the first three levels of their engineering study.
Weighted average GPA = (1 x level 1 GPA + 2 x level 2 GPA + 3 x level 3 GPA)/6.
- 5.3 Candidates anticipating First Class Honours must pursue a thesis with a significant research component..
- 5.4 The award of Honours (I, IIA, IIB) or Pass degrees will be determined by the Engineering Board of Studies, after consideration of the weighted Grade Point Average achieved by a candidate over all four levels of engineering study.
Weighted average GPA = (1 x level 1 GPA + 2 x level 2 GPA + 3 x level 3 GPA + 4 x level 4 GPA)/10.

Vacation Practice and Senior First Aid

6. Candidates must meet the following additional requirements before their degrees will be conferred:
 - 6.1 candidates are required to work a minimum of 60 days of vacation practice; and
 - 6.2 candidates will obtain a Senior First Aid Certificate that is current at the time of graduation.

BACHELOR OF APPLIED MODELLING AND BACHELOR OF APPLIED MODELLING (ADVANCED)

Note: The Bachelor of Applied Modelling and Bachelor of Applied Modelling (Advanced) are not offered in 2009. No new enrolments will be accepted.

refer to Bachelor of Applied Modelling on page 143

Requirements for the course

1. A candidate for the degree shall follow an approved course of study as specified in the program shown under Undergraduate Courses and Majors to obtain 72 credit points. This shall include the specified core subjects and elective subjects so that:
 - 1.1 a minimum of 24 and maximum of 30 credit points of level 1 subjects are passed;
 - 1.2 a minimum of 15 credit points of level 2 subjects; and
 - 1.3 at least 18 credit points of level 3 subjects are passed.

Majors

2. A candidate may select one of the following majors offered within the course:
 - Aquaculture
 - Archaeology
 - Biochemistry/Molecular Biology
 - Botany
 - Chemistry
 - Computer Science
 - Economics and Regional Development
 - Environmental Earth Science
 - Environmental Science
 - Financial Management
 - Genetics and Genomics
 - Geography
 - Geology/Economic Geology
 - Hydrology and Water Resources
 - Marine Biology
 - Marine Biology (Advanced)
 - Mathematics
 - Microbiology
 - Pharmacology
 - Physics
 - Physiology
 - Psychology
 - Spatial Science
 - Zoology

Period of candidature/completion

3. The normal time for completion of the course is three years full-time study or six years part-time.
4. The maximum time for completion is normally 10 years.

Progression

5. In selecting the subjects for which a candidate seeks to enrol in any year the candidate shall adhere as far as possible to the order in which the subjects of the course are set out in the Undergraduate Courses and Majors.

Pass Conceded

6. The grade of Pass Conceded for a subject may be awarded at the examiners' meeting if the subject is not core or part of a major. This grade may also be awarded by the faculty following consideration of the student's overall result for the year.
7. Unless otherwise approved by the Head of School, a candidate may not enrol in any subject for which prerequisite subjects have not satisfactorily completed.
8. A candidate who is awarded the grade of Pass Conceded for a subject shall be deemed to have passed the subject and shall be credited with the appropriate credit points but may not enrol for a more advanced subject in any discipline requiring the first as a prerequisite except with the approval of the relevant Head of School.
9. The number of credit points that may be credited at Pass Conceded level shall not exceed 18 for the course.

Advanced standing for prior study

10. Candidates for awards of the faculty may apply to obtain advanced standing for previous tertiary study as detailed in the Advanced Standing for Previous Studies and Recognised Prior Learning Policy and associated procedures.

Cancellation of advanced standing

11. Unless the faculty otherwise determines, advanced standing gained for any subject shall be cancelled 10 years after the date of the examination upon which the advanced standing is based if by then the candidate has not completed the course.

Supplementary examination for final subject towards the degree

12. A candidate who has failed the final subject towards the degree and who gained 40% or more of the marks for that subject, may be granted a supplementary examination in that subject.

Administration of the degree

13. The degree shall be administered by the Faculty of Science, Engineering and Information Technology.

BACHELOR OF APPLIED SCIENCE AND BACHELOR OF APPLIED SCIENCE WITH HONOURS

see also *Courses and Majors, Bachelor of Applied Modelling on page 143*

- A candidate for the pass or honours degree shall, unless admitted with advanced status, follow an approved course of study to obtain 96 credit points. The normal time for completion of the degree is four years full-time study.
- The maximum period of candidature for the degree is normally 10 years.
- The 96 credit points from Requirement 1 shall be obtained by passing subjects from the Schedule of Science Subjects, according to the following:
 - at least 18 credit points from science level 1 subjects; of these, at least 3 credit points must be obtained from each of the following subject groups:

Group 1:	All first year MA and PH subjects except PH1001
Group 2:	All first year CH and CP subjects together with BM1000, but excluding CH1020 and CP1030
Group 3:	All first year BT/BZ/MB/ZL subjects
Group 4:	All first year EA and EV subjects
 - at least 15 credit points from science level 2 subjects;
 - at least 15 credit points from science level 3 subjects;
 - at least 18 credit points from science level 4 and 5 subjects.
- Not more than 24 credit points may be credited from subjects from other faculties listed in the Master Schedule of Subjects.
- Not more than 33 credit points may be credited from level 1 subjects.
- A candidate may not, except with the approval of the Pro-Vice-Chancellor:
 - enrol for any science level 2 subject until 12 credit points from science level 1 subjects have been obtained; or
 - enrol for any science level 3 subject until 18 credit points from science level 1 and level 2 subjects have been obtained; or

- enrol for any science level 4 subject until 72 credit points have been obtained; or
 - enrol for any science level 5 subject until 12 credit points from science level 3 have been obtained.
- For the degree to be awarded in a major listed in Schedule 1, the candidate must complete the requirements laid down by the faculty for that major.
 - A candidate who has satisfied the school requirements relating to the necessary standard of academic achievement may enrol in the Honours degree.
 - Students may articulate from the Bachelor of Science degree at this University into the Bachelor of Applied Science or the Bachelor of Applied Science (Honours) and complete the degree in the minimum time according to the following:
 - satisfy the requirements 3.3, 3.4 and 4 above; and
 - relinquish an existing Bachelor of Science degree prior to graduating with the degree of Bachelor of Applied Science.
 - Students who have completed a Bachelor of Science or equivalent degree at this or another higher education institution recognised by the faculty may complete a Bachelor of Applied Science or Bachelor of Applied Science (Honours) degree according to the following:
 - obtain a minimum of 36 credit points; and
 - satisfy the requirements 3.3, 3.4 and 4 above.

Schedule 1

Majors

Aquaculture.

BACHELOR OF ARTS-BACHELOR OF SCIENCE

Requirements for the joint degree are shown in the Faculty of Arts, Education and Social Sciences section of this handbook.

refer to Bachelor of Arts-Bachelor of Science on page 27

BACHELOR OF ARTS-BACHELOR OF SCIENCE WITH HONOURS IN BOTH OR EITHER DISCIPLINES

Requirements for the joint degree are shown in the Faculty of Arts, Education and Social Sciences section of this handbook.

refer to Bachelor of Arts-Bachelor of Science with Honours in both or either disciplines on page 27

BACHELOR OF BIOTECHNOLOGY

see also *Courses and Majors, Bachelor of Biotechnology on page 145*

- A candidate for the pass degree shall, unless admitted with advanced status, follow a course of study as detailed in the specific program shown under Undergraduate Courses and Majors to obtain 72 credit points.
- The normal time for the completion of the degree is three years full-time study. The maximum period of candidature for the degree is normally 10 years.
- Unless otherwise approved by the Pro-Vice-Chancellor of the Faculty of Science, Engineering and Information Technology, the 72 credit points from Requirement 1 shall be obtained by following a course of study shown under Undergraduate Courses and Majors according to the following:
 - at least 18 credit points of level 1 subjects;
 - at least 15 credit points of level 2 subjects; and
 - at least 18 credit points of level 3 subjects.
 A grade of Pass (P) or higher must be obtained in all core subjects.
- Not more than 30 credit points may be credited from level 1 subjects.
- A candidate may not, except with the prior approval of the Pro-Vice-Chancellor of the Faculty of Science, Engineering and Information Technology, enrol:
 - for any subject at level 2 until 12 credit points from subjects at level 1 have been obtained;
 - for any subject at level 3 until 18 credit points from subjects at level 2 have been obtained.

BACHELOR OF BUSINESS-BACHELOR OF INFORMATION TECHNOLOGY

Requirements for the joint degree are shown in the Faculty of Law, Business and the Creative Arts section of this handbook.

refer to Bachelor of Business-Bachelor of Information Technology on page 83

BACHELOR OF BUSINESS AND ENVIRONMENTAL SCIENCE

see also Courses and Majors, Bachelor of Business and Environmental Science on page 145

Requirements for the course

1. A candidate for the degree shall follow an approved course of study as specified in the program shown under Undergraduate Courses and Majors to obtain 72 credit points. This shall include the specified core subjects and optional subjects.
2. The course of study must include four subjects in business and four subjects in science in each of levels 1, 2 and 3.
3. At level 1, the four science subjects must be from four discipline areas (eg mathematics, chemistry, biology and marine science, environmental and earth sciences).
4. Students must attend lectures, laboratory classes, tutorials and field excursions as described in the subject schedules.

Period of candidature/completion

5. The normal time for completion of the course is three years full-time study or six years part-time.
6. The maximum time for completion is normally 10 years.
7. The maximum amount of time a student can take as leave of absence from the course is two years.

Progression

8. In selecting the subjects for which a candidate seeks to enrol in any year the candidate shall adhere as far as possible to the order in which the subjects of the course are set out in Undergraduate Courses and Majors.
9. A candidate may not, except with the approval of the relevant Pro-Vice-Chancellor:
 - 9.1 enrol in any level 2 subject until 12 credit points from level 1 subjects have been obtained; or
 - 9.2 enrol in any level 3 subject until 18 credit points from level 1 and level 2 subjects have been obtained.

Pass Conceded

10. The grade of Pass Conceded for a subject may be awarded at the examiners' meeting. The grade may also be awarded by the faculty following consideration of the student's overall result for the year.
11. A candidate who is awarded the grade of Pass Conceded for a subject shall be deemed to have passed the subject and shall be credited with the appropriate credit points but may not enrol for a more advanced subject in any discipline requiring the first as a prerequisite except with the approval of the relevant Associate Dean/Faculty Registrar.
12. The number of credit points that may be credited at Pass Conceded level shall not exceed six.

Advanced standing for prior study

13. Candidates for awards of the faculty may apply to obtain advanced standing for previous tertiary study as detailed in the Advanced Standing for Previous Studies and Recognised Prior Learning Policy and associated procedures.
14. Advanced standing for previous study may only be granted for study undertaken in the previous four years.
15. Not more than 24 credit points may be credited from level 1 subjects.
16. Advanced standing may not be granted for any subjects from level 2 or level 3.

Cancellation of advanced standing

17. Unless the faculty otherwise determines, advanced standing granted for any subject shall be cancelled 10 years after the date of the examination upon which the advanced standing is based if by then the candidate has not completed the course.

Supplementary examination for final subject towards the degree

18. A candidate who has failed the final subject towards the degree and who gained 40% or more of the marks for that subject, may be granted a supplementary examination in that subject.

Administration of the degree

19. The degree shall be administered by the Faculty of Science, Engineering and Information Technology.

BACHELOR OF COMMERCE-BACHELOR OF INFORMATION TECHNOLOGY

Note: The Bachelor of Commerce-Bachelor of Information Technology has been suspended. No new enrolments will be accepted. Students currently enrolled may continue their studies in the course and should refer to previous editions of this handbook.

Requirements for the joint degree are shown in the Faculty of Law, Business and the Creative Arts section of this handbook.

BACHELOR OF CONSERVATION BIOLOGY

see also Courses and Majors, Bachelor of Conservation Biology and Bachelor of Conservation Biology with Honours on page 146

Requirements for the course

1. A candidate for the degree shall follow an approved course of study as specified in the program shown under Undergraduate Courses and Majors to obtain 72 credit points. This shall include the specified core subjects and elective subjects.

Period of candidature/completion

2. The normal time for completion of the course is three years full-time study or six years part-time.
3. The maximum time for completion is normally 10 years.

Progression

4. In selecting the subjects for which a candidate seeks to enrol in any year the candidate shall adhere as far as possible to the order in which the subjects of the course are set out in the Undergraduate Courses and Majors.
5. A candidate may not, except with the approval of the Pro-Vice-Chancellor:
 - 5.1 enrol in any science level 2 subjects until 12 credit points from science level 1 subjects have been obtained; or
 - 5.2 enrol in any science level 3 subjects until 18 credit points from science level 1 and level 2 subjects have been obtained.

Pass Conceded

6. The grade of Pass Conceded for a subject may be awarded at the examiners' meeting. The grade may also be awarded by the faculty following consideration of the student's overall result for the year.
7. A candidate who is awarded the grade of Pass Conceded for a subject shall be deemed to have passed the subject and shall be credited with the appropriate credit points but may not enrol for a more advanced subject in any discipline requiring the first as a prerequisite except with the approval of the relevant Head of School.
8. The number of credit points that may be credited at Pass Conceded level shall not exceed 18 for the Bachelor of Conservation Biology.

Advanced standing for prior study

9. Candidates for awards of the faculty may apply to obtain advanced standing for previous tertiary study as detailed in the Advanced Standing for Previous Studies and Recognised Prior Learning Policy and associated procedures.
10. Except with faculty permission, granted on the advice of the Head of School, a candidate may not enrol for any subject unless a passing grade for any prerequisites has been obtained within the previous four years.

Cancellation of advanced standing

11. Unless the faculty otherwise determines, advanced standing gained for any subject shall be cancelled 10 years after the date of the examination upon which the credit is based if by then the candidate has not completed the course.

Supplementary examination for final subject towards the degree

12. A candidate who has failed the final subject towards the degree and who gained 40% or more of the marks for that subject, may be granted a supplementary examination in that subject.

Administration of the degree

13. The degree shall be administered by the Faculty of Science, Engineering and Information Technology.

BACHELOR OF CONSERVATION BIOLOGY WITH HONOURS

see also Courses and Majors, Bachelor of Conservation Biology and Bachelor of Conservation Biology with Honours on page 146

1. A person may enrol for the honours degree if that person has:
 - 1.1 completed the requirements of the pass degree or been admitted by the faculty to equivalent status; and
 - 1.2 satisfied the school requirements relating to the standard of academic achievement necessary to proceed to an honours degree.

Requirements for the course

2. The honours degree studies shall comprise 24 credit points and, except with the approval of the faculty on the advice of the Head of School, shall follow on directly from the pass degree and no later than two years following completion of the pass degree.
3. A candidate for the honours degree shall undertake such subjects as are shown under the Faculty of Science, Engineering and Information Technology Undergraduate Courses and Majors.

4. Except with the approval of the faculty, there shall be no re-examination.

Period of candidature/completion

5. The normal time for completion of the course is one year full-time study.

Administration of the degree

6. The degree shall be administered by the Faculty of Science, Engineering and Information Technology.

BACHELOR OF CONSERVATION BIOLOGY (ADVANCED)

see also *Courses and Majors, Bachelor of Conservation Biology (Advanced) and Bachelor of Conservation Biology (Advanced) with Honours on page 147*

Special entry requirements

1. Students enrolled in a JCU Bachelor of Science or a Bachelor of Conservation Biology may be eligible to transfer into the Bachelor of Conservation Biology (Advanced) at level 2 or level 3 if they have successfully completed the necessary subject combinations and have achieved a GPA of 5.5 or greater.

Requirements for the course

2. A candidate for the degree shall follow an approved course of study as specified in the program shown under Undergraduate Courses and Majors to obtain 72 credit points. This shall include the specified core subjects and elective subjects.

Period of candidature/completion

3. The normal time for completion of the course is three years full-time study or six years part-time.
4. The maximum time for completion is normally 10 years.
5. The maximum amount of time a student can take as leave of absence from the course is two years.

Progression

6. In selecting the subjects for which a candidate seeks to enrol in any year the candidate shall adhere as far as possible to the order in which the subjects of the course are set out in the Undergraduate Courses and Majors.
7. A candidate may not, except with the approval of the Pro-Vice-Chancellor:
 - 7.1 enrol in any science level 2 subjects until 12 credit points from science level 1 subjects have been obtained;
 - 7.2 enrol in any science level 3 subjects until 18 credit points from science level 1 and level 2 subjects have been obtained.
8. In addition to requirements of the Academic Progression Policy, other than where special circumstances apply, students who do not achieve an annual GPA of at least 5.5 or who fail a subject will be withdrawn from the course but will be permitted to enrol in the Bachelor of Conservation Biology or Bachelor of Science.

Pass Conceded

9. The grade of Pass Conceded for a subject may be awarded at the examiners' meeting. The grade may also be awarded by the faculty following consideration of the student's overall result for the year.
10. A candidate who is awarded the grade of Pass Conceded for a subject shall be deemed to have passed the subject and shall be credited with the appropriate credit points but may not enrol for a more advanced subject in any discipline requiring the first as a prerequisite except with the approval of the relevant Associate Dean/Faculty Registrar.
11. The number of credit points that may be credited at Pass Conceded level shall not exceed three for the Bachelor of Conservation Biology (Advanced).

Advanced standing for prior study

12. Candidates for awards of the faculty may apply to obtain advanced standing for previous tertiary study as detailed in the Advanced Standing for Previous Studies and Recognised Prior Learning Policy and associated procedures.
13. Except with faculty permission, granted on the advice of the Head of School, a candidate may not enrol for any subject unless a passing grade for any prerequisites have been obtained within the previous four years.

Cancellation of advanced standing

14. Unless the faculty otherwise determines, advanced standing gained for any subject shall be cancelled 10 years after the date of the examination upon which the credit is based if by then the candidate has not completed the course.

Supplementary examination for final subject towards the degree

15. A candidate who has failed the final subject towards the degree and who gained 40% or more of the marks for that subject, may be granted a supplementary examination in that subject.

Administration of the degree

16. The degree shall be administered by the Faculty of Science, Engineering and Information Technology.

BACHELOR OF CONSERVATION BIOLOGY (ADVANCED) WITH HONOURS

see also *Courses and Majors, Bachelor of Conservation Biology (Advanced) and Bachelor of Conservation Biology (Advanced) with Honours on page 147*

1. A person may enrol for the honours degree if that person has:
 - 1.1 completed the requirements of the pass degree or been admitted by the faculty to equivalent status; and
 - 1.2 satisfied the school requirements relating to the standard of academic achievement necessary to proceed to an honours degree.

Requirements for the course

2. The honours degree studies shall comprise 24 credit points and, except with the approval of the faculty on the advice of the Head of School, shall follow on directly from the pass degree and no later than two years following completion of the pass degree.
3. A candidate for the honours degree shall undertake such subjects as are shown under the Faculty of Science, Engineering and Information Technology Undergraduate Courses and Majors.
4. Except with the approval of the faculty, there shall be no re-examination.

Period of candidature/completion

5. The normal time for completion of the course is one year full-time study.

Administration of the degree

6. The degree shall be administered by the Faculty of Science, Engineering and Information Technology.

BACHELOR OF EDUCATION-BACHELOR OF SCIENCE

Requirements for the joint degree are shown in the Faculty of Arts, Education and Social Sciences section of this handbook.

refer to *Joint degrees with Bachelor of Education on page 31*

BACHELOR OF EDUCATION WITH HONOURS-BACHELOR OF SCIENCE

Requirements for the joint degree are shown in the Faculty of Arts, Education and Social Sciences section of this handbook.

refer to *Bachelor of Education with Honours-Bachelor of Science on page 33*

BACHELOR OF EDUCATION-BACHELOR OF SCIENCE WITH HONOURS

Requirements for the joint degree are shown in the Faculty of Arts, Education and Social Sciences section of this handbook.

refer to *Joint degrees with Bachelor of Education on page 31*

BACHELOR OF ENGINEERING AND BACHELOR OF ENGINEERING WITH HONOURS

see also *Courses and Majors, Bachelor of Engineering on page 148*

1. Candidates for the degree shall pursue an approved course of study to obtain 96 credit points, as specified in the Undergraduate Courses and Majors, and obtain passing grades in all prescribed subjects.
2. The requirements for the Bachelor of Engineering or Bachelor of Engineering with Honours are normally completed in four years of full-time study. The maximum period of candidature for both degrees is 10 years.

BACHELOR OF ENGINEERING-BACHELOR OF SCIENCE AND BACHELOR OF ENGINEERING WITH HONOURS-BACHELOR OF SCIENCE

see also *Courses and Majors, Bachelor of Engineering-Bachelor of Science on page 150*

1. The joint degree shall be administered by the Pro-Vice-Chancellor of the Faculty of Science, Engineering and Information Technology.
2. Candidates for the degree shall pursue an approved course of study to obtain 120 credit points, as specified in the Undergraduate Courses and Majors, and obtain passing grades in all prescribed subjects.
3. Bachelor of Engineering-Bachelor of Science and Bachelor of Engineering with Honours-Bachelor of Science candidates must

specialise an approved Engineering major plus one of the following Science majors:

- Aquaculture
- Archaeology
- Biochemistry/Molecular Biology
- Botany
- Chemistry
- Computer Science
- Environmental Earth Science
- Environmental Science
- Genetics and Genomics
- Geography
- Geology/Economic Geology
- Hydrology and Water Resources
- Marine Biology
- Marine Biology - Advanced
- Mathematics
- Microbiology
- Pharmacology
- Physics
- Physiology
- Spatial Science
- Zoology

4. The degree will be structured such that:
 - 4.1 candidates must enrol in level 1 Engineering studies in their first year of the degree;
 - 4.2 candidates must pass 30 credit points of Science, including an approved Science major;
 - 4.3 it is recommended that at least one subject from the Science major be taken in each teaching period of years 2 through 5 of the degree;
 - 4.4 candidates will pass at least 90 credit points from their chosen Engineering major, foregoing up to six credit points as listed in the Undergraduate Courses and Majors;
 - 4.5 in cases where there is overlap between the core subjects of the Science and Engineering majors, it is highly recommended that candidates undertake the remaining six credit points of their chosen Engineering major.
5. The requirements for the Bachelor of Engineering-Bachelor of Science or Bachelor of Engineering with Honours-Bachelor of Science degrees are normally completed in five years of full-time study. The maximum period of candidature for these degrees is 10 years.

BACHELOR OF ENVIRONMENTAL SCIENCE

see also Courses and Majors, Bachelor of Environmental Science and Bachelor of Environmental Science with Honours on page 151

1. A candidate for the pass degree shall, unless admitted with advanced status, follow an approved course of study to obtain 72 credit points.
2. The normal time for completion of the degree is three years full-time study. The maximum period of candidature for the degree is normally 10 years.
3. The 72 credit points from Requirement 1 shall be obtained by passing subjects from the Schedule of Science Subjects according to the following:
 - 3.1 at least 18 credit points from science level 1 subjects in accordance with the course structure shown in the schedule under Undergraduate Courses and Majors;
 - 3.2 at least 21 credit points from science level 2 subjects in accordance with the course structure shown in the schedule under Undergraduate Courses and Majors;
 - 3.3 at least 18 credit points from science level 3 subjects in accordance with the course structure shown in the schedule under Undergraduate Courses and Majors.
4. Not more than six credit points may be credited from preparatory subjects, CH1020, MA1020, SC1021.
5. Not more than a total of 12 credit points may be credited from preparatory subjects listed in Requirement 4 above and subjects from other faculties listed in the Master Schedule of Subjects.
6. Not more than 30 credit points may be credited from level 1 subjects.
7. A candidate may not, except with the approval of the Pro-Vice-Chancellor:
 - 7.1 enrol for any science level 2 subject until 12 credit points from science level 1 subjects have been obtained; or

7.2 enrol for any science level 3 subject until 18 credit points from science level 1 and level 2 subjects have been obtained.

8. A candidate who has satisfied the school requirements relating to the necessary standard of academic achievement may enrol in the honours degree.
9. Students in the Bachelor of Environmental Science program will be required to attend a two day field trip during their first year of study.

BACHELOR OF ENVIRONMENTAL SCIENCE WITH HONOURS

see also Courses and Majors, Bachelor of Environmental Science and Bachelor of Environmental Science with Honours on page 151

1. A person may enrol for the honours degree if that person has:
 - 1.1 completed the requirements of the pass degree or been admitted by the faculty to equivalent status; and
 - 1.2 satisfied the school requirements relating to the standard of academic achievement necessary to proceed to an honours degree.
2. The honours degree studies shall comprise 24 credit points and, except with the approval of the faculty on the advice of the relevant Head of School, shall follow on directly from the pass degree and no later than two years following completion of the pass degree.
3. A candidate for the honours degree shall undertake such subjects, research and literature projects as the relevant Head of School designates.
4. With the approval of the relevant heads of schools, students may undertake an honours program involving more than one school.
5. Except with the approval of the faculty, there shall be no re-examination.

BACHELOR OF GEOLOGY

see also Courses and Majors, Bachelor of Geology and Bachelor of Geology with Honours on page 152

Requirements for the course

1. A candidate for the degree shall follow an approved course of study as specified in the program shown under Undergraduate Courses and Majors to obtain 72 credit points. This shall include the specified core subjects and elective subjects.

Period of candidature/completion

2. The normal time for completion of the course is three years full-time study or six years part-time.
3. The maximum time for completion is 10 years.
4. The maximum amount of time a student can take as leave of absence from the course is three years.

Pass Conceded

5. The grade of Pass Conceded may be awarded at the examiners' meeting. The grade may also be awarded by the faculty following consideration of the student's overall result for the year.
6. A candidate who is awarded the grade of Pass Conceded in a subject shall be deemed to have passed the subject and shall be credited with the appropriate credit points but may not enrol for a more advanced subject in any discipline requiring the first as a prerequisite except with the approval of the relevant Associate Dean/Faculty Registrar.
7. The number of credit points that may be credited at Pass Conceded level shall not exceed 18 for the Bachelor of Geology and no more than six credit points at level 3.

Advanced standing for prior study

8. Candidates for awards of the faculty may apply to obtain advanced standing for previous tertiary study as detailed in the Advanced Standing for Previous Studies and Recognised Prior Learning Policy and associated procedures.
9. Advanced standing for previous study granted towards the Bachelor of Geology may only be granted for study undertaken in the previous five years.

Cancellation of advanced standing

10. Unless the faculty otherwise determines, advanced standing gained for any subject shall be cancelled seven years after the date of the examination upon which the credit is based if by then the candidate has not completed the course.

Supplementary examination for final subject towards the degree

11. A candidate who has failed the final subject towards the degree and who gained 40% or more of the marks for that subject, may be granted a supplementary examination in that subject.

Administration of the degree

- The degree shall be administered by the Faculty of Science, Engineering and Information Technology.

BACHELOR OF GEOLOGY WITH HONOURS**Requirements for the course**

- A candidate for the degree shall follow an approved course of study as specified in the program shown under Undergraduate Courses and Majors to obtain 24 credit points.

Period of candidature/completion

- The normal time for completion of the course is one year full-time study or two years part-time.

Administration of the degree

- The degree shall be administered by the Faculty of Science, Engineering and Information Technology.

BACHELOR OF INFORMATION TECHNOLOGY AND BACHELOR OF INFORMATION TECHNOLOGY WITH HONOURS

see also Courses and Majors, Bachelor of Information Technology and Bachelor of Information Technology with Honours on page 153

- A candidate for the pass degree shall, unless admitted with advanced status, follow a course of study as detailed in the specific program shown under Undergraduate Courses and Majors to obtain 72 credit points. The normal time for completion of the degree is three years full-time study.
- The maximum period of candidature for the pass degree is normally six years.
- The 72 credit points from Requirement 1 shall be obtained by passing at least 18 credit points of level 1 subjects, at least 15 credit points of level 2 subjects, and at least 18 credit points of level 3 subjects.
- For the pass degree, a minimum of 36 credit points of Computer Science subjects, or cognate subjects from other disciplines as approved by the Pro-Vice-Chancellor, must be completed.
- Elective subjects should normally be selected from subjects in Computer Science, Computer Systems Engineering, Geographical Information Systems, Business Information Systems, Mathematics, Accounting and Finance and Management.
- Not more than 30 credit points may be credited from level 1 subjects.
- A candidate may not, except with the approval of the Pro-Vice-Chancellor, enrol:
 - for any subject at level 2 until 12 credit points from subjects at level 1 have been obtained; and
 - for any subject at level 3 until 18 credit points from subjects at level 1 and level 2 have been obtained.
- A person may continue in an honours degree if that person has:
 - completed the requirements of the pass degree or been admitted by the faculty to equivalent status; and
 - satisfied the discipline's requirements relating to the standard of academic achievement necessary to proceed to an honours degree.
 - The honours degree shall comprise the requirements of the pass degree plus an additional 24 credit points and, except with the approval of the faculty on the advice of the Head of School, shall be commenced within two years of completion of the pass degree.
 - The proposed course of study undertaken by the candidate must be approved by the head of the discipline of Information Technology.
 - Except with the approval of the Faculty, there shall be no re-examination.

BACHELOR OF MARINE SCIENCE

see also Courses and Majors, Bachelor of Marine Science and Bachelor of Marine Science with Honours on page 157

- A candidate for the pass degree shall follow an approved course of study to obtain 72 credit points.
- The normal time for completion of the degree is three years full-time study. The maximum period of candidature is normally 10 years.
- The 72 credit points from Requirement 1 shall be obtained by passing subjects from the Schedule of Science Subjects according to the following:

- at least 18 credit points from science level 1 subjects in accordance with the course structure shown in the schedule under Undergraduate Courses and Majors;
- at least 15 credit points from science level 2 subjects in accordance with the course structure shown in the schedule under Undergraduate Courses and Majors;
- at least 18 credit points from science level 3 subjects in accordance with the course structure shown in the schedule under Undergraduate Courses and Majors.
- Not more than six credit points may be credited from preparatory subjects, CH1020, MA1020, SC1021.
- Not more than a total of 12 credit points may be credited from preparatory subjects listed in Requirement 4 above and subjects from other faculties listed in the Master Schedule of Subjects.
- Not more than 30 credit points may be credited from level 1 subjects.
- A candidate may not, except with the approval of the Pro-Vice-Chancellor:
 - enrol for any science level 2 subject until 12 credit points from science level 1 subjects have been obtained; or
 - enrol for any science level 3 subject until 18 credit points from science level 1 and level 2 subjects have been obtained.
- Students may be accepted into the Tropical Marine Network major if they have completed year 1 with a Credit average or better. Students may apply to transfer into the Tropical Marine Network major at the end of the first year if they have completed, or will complete, the necessary prerequisites.
- A candidate who has satisfied the school requirements relating to the necessary standard of academic achievement may enrol in the honours degree.

BACHELOR OF MARINE SCIENCE WITH HONOURS

see also Courses and Majors, Bachelor of Marine Science and Bachelor of Marine Science with Honours on page 157

- A person may enrol for the honours degree if that person has:
 - completed the requirements of the pass degree or been admitted by the faculty to equivalent status; and
 - satisfied the school requirements relating to the standard of academic achievement necessary to proceed to an honours degree.

Academic requirements for course completion

- A candidate for the degree shall follow an approved course of study as specified in the program shown under Undergraduate Courses and Majors to obtain 24 credit points.

Period of candidature/completion

- The normal time for completion of the course is one year full time study or two years part time where part-time subjects are available.
- A candidate for the honours degree shall undertake such subjects, research and literature projects as the relevant Head of School designates.
- With the approval of the relevant heads of schools, students may undertake an honours program involving more than one school.

Pass Conceded

- A Pass Conceded will not be awarded for an honours degree.

Re-examination of the degree

- Except with the approval of the faculty, there shall be no re-examination.

Administration of the degree

- The degree shall be administered by the Faculty of Science, Engineering and Information Technology.

BACHELOR OF PLANNING AND BACHELOR OF PLANNING WITH HONOURS

see also Courses and Majors, Bachelor of Planning and Bachelor of Planning with Honours on page 158

- A candidate for the pass or honours degree shall, unless admitted with advanced status, follow an approved course of study to obtain 96 credit points. The normal time for completion of the degree is four years full-time study.
- The maximum period of candidature for the degree is normally 10 years.
- The 96 credit points from Requirement 1 shall be obtained by passing subjects from the Schedule of Science Subjects, according to the following:

- 3.1 at least 18 credit points from level 1 subjects;
- 3.2 at least 15 credit points from level 2 subjects;
- 3.3 at least 15 credit points from level 3 subjects;
- 3.4 at least 12 credit points from level 4 and level 5 subjects.
- 4. Not more than 24 credit points may be credited from subjects from other faculties.
- 5. Not more than 33 credit points may be credited from level 1 subjects.
- 6. A candidate may not, except with the approval of the Pro-Vice-Chancellor:
 - 6.1 enrol for any science level 2 subject until 12 credit points from science level 1 subjects have been obtained; or
 - 6.2 enrol for any science level 3 subject until 18 credit points from science level 1 and level 2 subjects have been obtained; or
 - 6.3 enrol for any science level 4 subject until 60 credit points have been obtained; or
 - 6.4 enrol in any science level 5 subject until 12 credit points from science level 3 subjects have been obtained.
- 7. For a major to be awarded, the candidate must complete the requirements laid down by the faculty for that major.
- 8. A candidate who has satisfied the school requirements relating to the necessary standard of academic achievement may enrol in the Honours degree.

BACHELOR OF PSYCHOLOGY-BACHELOR OF SCIENCE

Requirements for the joint degree are shown in the Faculty of Arts, Education and Social Sciences section of this handbook.

refer to *Bachelor of Psychology-Bachelor of Science* on page 35

BACHELOR OF PSYCHOLOGY-BACHELOR OF SCIENCE WITH HONOURS IN BOTH OR EITHER DISCIPLINES

Requirements for the joint degree are shown in the Faculty of Arts, Education and Social Sciences section of this handbook.

refer to *Bachelor of Psychology-Bachelor of Science with Honours in either or both Disciplines* on page 36

BACHELOR OF SCIENCE

see also *Courses and Majors, Bachelor of Science and Bachelor of Science with Honours* on page 160

1. A candidate for the pass degree shall, unless admitted with advanced status, follow an approved course of study to obtain 72 credit points. Refer to the program shown under Undergraduate Courses and Majors.
2. The normal time for completion of the degree is three years full-time study. The maximum period of candidature for the degree is normally 10 years.
3. The 72 credit points from Requirement 1 shall be obtained by passing subjects from the Schedule of Science Subjects according to the following:
 - 3.1 at least 18 credit points from science level 1 subjects; of these, at least 3 credit points (one subject) must be obtained from each of the following subject groups:
 - Group 1: All first year MA and PH subjects except PH1001
 - Group 2: All first year CH and CP subjects together with BM1000, but excluding CH1020 and CP1030
 - Group 3: All first year BT/BZ/MB/ZL subjects
 - Group 4: All first year EA and EV subjects
 - 3.2 at least 15 credit points from science level 2 subjects;
 - 3.3 at least 18 credit points from science level 3 or level 5 subjects.
4. Unless otherwise approved by the Pro-Vice-Chancellor, a candidate for the BSc degree shall obtain a major from subjects listed in the Schedule of Science Subjects. Only subjects passed at a grade of P (Pass) or higher can be counted towards a major.
 - 4.1 A major shall consist of an approved sequence of 27 credit points in a discipline or cognate disciplines, including 12 credit points from science level 3 subjects.
 - 4.2 Some single majors are also available at an advanced level. Advanced majors will consist of an approved sequence of at most 42 credit points of which at least 12 must be from third year advanced subjects. Advanced majors are only available to students with exceptionally

good grades. To remain in an advanced major, a student must maintain a GPA of 5.5 or more.

- 4.3 A double major may be obtained, and shall consist of two sequences of credit points following the requirements of 4.1 and 4.2, from two different disciplines.
- 4.4 An interdisciplinary major may be obtained, comprising an approved sequence of at least 42 credit points, and including a total of 18 credit points of level 3 subjects from at least two different disciplines.
- 5. Not more than six credit points may be credited from preparatory subjects, CH1020, MA1020, SC1021.
- 6. Not more than a total of 12 credit points may be credited from preparatory subjects listed in Requirement 5 above and subjects from other faculties.
- 7. Not more than 30 credit points may be credited from level 1 subjects.
- 8. A candidate may not, except with the approval of the Pro-Vice-Chancellor:
 - 8.1 enrol for any science level 2 subject until 12 credit points from science level 1 subjects have been obtained; and
 - 8.2 enrol for any science level 3 subject until 18 credit points from science level 1 and level 2 subjects have been obtained; and
 - 8.3 enrol for any science level 5 subject until 12 credit points from science level 3 subjects have been obtained.

BACHELOR OF SCIENCE WITH HONOURS

see also *Courses and Majors, Bachelor of Science and Bachelor of Science with Honours* on page 160

1. The degree of Bachelor of Science with Honours may be undertaken within the schools in either the Faculty of Science, Engineering and Information Technology or in the Faculty of Medicine, Health and Molecular Sciences listed below. With the approval of the Pro-Vice-Chancellor of the relevant faculty, a joint honours degree may be undertaken in more than one school.
2. A person may enrol for the honours degree if that person has:
 - 2.1 completed the requirements of the pass degree or been admitted by the faculty to equivalent status; and
 - 2.2 satisfied the school requirements relating to the standard of academic achievement necessary to proceed to an honours degree.
3. The degree studies shall comprise 24 credit points and, except with the approval of the faculty on the advice of the Head of School, shall follow on directly from the pass degree and no later than two years following completion of the pass degree.
4. A candidate for the honours degree shall undertake such subjects, research and literature projects as the Head of School designates.
5. Except with the approval of the faculty, there shall be no re-examination.

Schedule

Schools in which Honours may be undertaken

Anthropology, Archaeology and Sociology
 Veterinary and Biomedical Sciences
 Earth and Environmental Sciences
 Marine and Tropical Biology
 Mathematics, Physics and Information Technology
 Pharmacy and Molecular Sciences

Schedule

Majors and Programs

Programs of Study will be presented under Undergraduate Courses and Majors.

BACHELOR OF SCIENCE (ADVANCED)

Requirements for the course

1. A candidate for the degree shall follow an approved course of study as specified in the program shown under Undergraduate Courses and Majors to obtain 72 credit points. This shall include the specified core subjects and elective subjects.

Additional course completion criteria

2. Candidates enrolled for the degree shall be required to fully participate in the special features of the course which include:
 - 2.1 maintain a professional working relationship with their appointed academic mentors; and
 - 2.2 attend and participate in all not-for-credit extension programs provided

Majors

3. A major will consist of an approved sequence of 33 credit points of which at least 18 must be from third year advanced subjects or level 5 subjects including six credit points of core subjects made available to students within the Bachelor of Science (Advanced).
4. A double major will consist of six credit points of core subjects available to students within the Bachelor of Science (Advanced) plus two sequences of credit points that each follow the requirements of a single major, at least one of which must be at an advanced level. Students seeking to complete a double major in the Bachelor of Science (Advanced) should consult the appropriate Associate Dean or Faculty Registrar.
5. The following majors are available within the Bachelor of Science (Advanced):
 - Aquaculture
 - Biochemistry/Molecular Biology
 - Botany
 - Chemistry
 - Computer Science
 - Environmental Science
 - Genetics and Genomics
 - Geography
 - Mathematics
 - Microbiology
 - Pharmacology
 - Physics
 - Physiology
 - Spatial Science
 - Zoology
6. The major is to be included on the testamur.

Period of candidature/completion

7. The normal time for completion of the course is three years full-time study or six years part-time.
8. The maximum time for completion is 10 years.
9. The maximum amount of time a student can take as leave of absence from the course is one year.

Progression

10. Students may apply to be admitted to the Bachelor of Science (Advanced) following the completion of the first year of the Bachelor of Science provided that their GPA exceeds 5.5. The number of students in the Bachelor of Science (Advanced) at any year level will not exceed 20 students (Townsville and Cairns combined).
11. Candidates must maintain a GPA of at least 5.5. Failure to do so will result in being transferred to the Bachelor of Science degree.

Pass Conceded

12. The grade of Pass Conceded may be awarded at the examiners' meeting. The grade may also be awarded by the faculty following consideration of the student's overall result for the year.
13. A candidate who is awarded the grade of Pass Conceded in a subject shall be deemed to have passed the subject and shall be credited with the appropriate credit points but may not enrol for a more advanced subject in any discipline requiring the first as a prerequisite except with the approval of the relevant Associate Dean/Faculty Registrar.
14. A candidate who is awarded the grade of Pass Conceded in a core subject shall be deemed to have passed the subject and shall be credited with the appropriate credit points but may not re-enrol in the Bachelor of Science (Advanced) except with the approval of the relevant Associate Dean/Faculty Registrar.
15. The number of credit points that may be credited at Pass Conceded level shall not exceed three for the Bachelor of Science (Advanced).

Advanced standing for prior study

16. Candidates for awards of the faculty may apply to obtain advanced standing for previous tertiary study as detailed in the Advanced Standing for Previous Studies and Recognised Prior Learning Policy and associated procedures.
17. Advanced standing for previous study granted towards the Bachelor of Science (Advanced) may only be granted for study undertaken in the previous 10 years.

Cancellation of advanced standing

18. Unless the faculty otherwise determines, advanced standing gained for any subject shall be cancelled 10 years after the date of the examination upon which the credit is based if by then the candidate has not completed the Bachelor of Science (Advanced).

Supplementary examination for final subject towards the degree

19. Supplementary examination will not be granted for candidates of the Bachelor of Science (Advanced).

Administration of the degree

12. The degree shall be administered by the Faculty of Science, Engineering and Information Technology.

BACHELOR OF SCIENCE-BACHELOR OF LAWS

see also Courses and Majors, Bachelor of Science-Bachelor of Law and Bachelor of Science-Bachelor of Laws with Honours in both or either disciplines on page 174

Administration of the degree

1. The joint degree course shall be administered by the Pro-Vice-Chancellor of the Faculty of Law, Business and the Creative Arts and the Pro-Vice-Chancellor of the Faculty of Science, Engineering and Information Technology.

Application for enrolment

2. An applicant for enrolment for a joint degree course shall —
 - 2.1 possess the prerequisites and satisfy any quota requirements, specified for the subjects constituting the first year of the course; and
 - 2.2 obtain approval from the Pro-Vice-Chancellor of the Faculty of Law, Business and the Creative Arts and the Pro-Vice-Chancellor of the Faculty of Science, Engineering and Information Technology. (Applicants may enter a joint degree course, at second year, with the approval of the Pro-Vice-Chancellors and provided they have obtained the prerequisites specified for the subjects constituting that year of the course.)

Re-enrolment

3. Re-enrolment in each subsequent year of the course shall require approval by both the Pro-Vice-Chancellor of the Faculty of Law, Business and the Creative Arts and the Pro-Vice-Chancellor of the Faculty of Science, Engineering and Information Technology.

Requirements for the degree

4. To qualify for the degree a candidate shall, during not fewer than five years of study, fulfil the requirements set out in the schedule shown under Undergraduate Courses and Majors.

Withdrawal from joint degree course

5. A candidate who has completed all the requirements of the first year of a joint degree course may convert to candidature for the degree of Bachelor of Laws without loss of advanced standing. (Note: Conversion after completion of any later year of a joint degree course will normally entail loss of advanced standing for non-Law subjects completed beyond first year.)
- 6.1 A candidate who has met the requirements of the first to third years of a course of study prescribed in the Schedule shown under Undergraduate Courses and Majors and who does not enrol for the fourth or fifth years of the course, or, having enrolled, does not complete the requirements prescribed for either year, shall consult the Pro-Vice-Chancellor of the Faculty of Science, Engineering and Information Technology on the requirements for the completion of the degree of Bachelor of Science.
- 6.2 A person who graduates under the provisions of clause 6.1 will not be debarred from seeking re-enrolment at a later date in order to complete the degree of Bachelor of Laws, but will be subject to any quota requirements in effect at that time.

BACHELOR OF SCIENCE-BACHELOR OF LAWS WITH HONOURS IN BOTH OR EITHER DISCIPLINES

see also Courses and Majors, Bachelor of Science-Bachelor of Law and Bachelor of Science-Bachelor of Laws with Honours in both or either disciplines on page 174

Requirements for the degree

- 1.1 Honours in the joint degree may be completed as:
 - BSc(Hons)-LLB(Hons); BSc(Hons)-LLB; BSc-LLB(Hons) depending on the requirements of individual candidates.
- 1.2 A candidate for the honours degree shall pursue studies as follows:
 - BSc(Hons)-LLB(Hons) — six years to obtain 144 credit points;
 - BSc(Hons)-LLB — six years to obtain 144 credit points;
 - BSc-LLB(Hons) — five years to obtain 120 credit points.
- 1.3 Candidates undertaking honours shall complete the requirements of the joint pass degree followed by the requirements of the normal honours year in either or both components of the joint degree depending on the degree in which the candidate enrolls.

BACHELOR OF TROPICAL AGRICULTURAL SCIENCE

see also *Courses and Majors, Bachelor of Tropical Agricultural Science and Bachelor of Tropical Agricultural Science with Honours on page 175*

Award requirements

1. A candidate for the pass degree in Tropical Agricultural Science shall, unless admitted with advanced status, follow a course of study as detailed in the specific program shown under Undergraduate Courses and Majors to obtain 72 credit points.
2. The normal time for completion of the degree is three years full-time study. The maximum period of candidature for the degree is normally 10 years.
3. Unless otherwise approved by the Pro-Vice-Chancellor of the Faculty of Science, Engineering and Information Technology, a candidate may not enrol in any level 3 subject of the course, until all prescribed level 1 and level 2 subjects have been satisfactorily completed.

BACHELOR OF TROPICAL AGRICULTURAL SCIENCE WITH HONOURS

see also *Courses and Majors, Bachelor of Tropical Agricultural Science and Bachelor of Tropical Agricultural Science with Honours on page 175*

1. The degree of Bachelor of Tropical Agricultural Science with Honours may be undertaken entirely within the School of Marine and Tropical Biology or jointly between the School of Marine and Tropical Biology and other schools in the Faculty of Science, Engineering and Information Technology or in the Faculty of Medicine, Health and Molecular Sciences listed below, subject to the approval of the Pro-Vice-Chancellor(s) of the relevant faculty(ies).
2. A person may enrol for the honours degree if that person has:
 - 2.1 completed the requirements of the pass degree or been admitted by the faculty to equivalent status; and
 - 2.2 satisfied the school requirements relating to the standard of academic achievement necessary to proceed to an honours degree.
3. The degree studies shall comprise 24 credit points and, except with the approval of the faculty on the advice of the Head of School of Marine and Tropical Biology, shall follow on directly from the pass degree and no later than two years following completion of the pass degree.
4. A candidate for the honours degree shall undertake such subjects, research and literature projects as the Head of School designates.
5. Except with the approval of the faculty, there shall be no re-examination.

Schedule

Schools in which Joint Honours may be undertaken

Veterinary and Biomedical Sciences
Earth and Environmental Sciences
Marine and Tropical Biology

DIPLOMA OF INTRODUCTORY ENGINEERING STUDIES

see also *Courses and Majors, Diploma of Introductory Engineering Studies on page 175*

Award requirements

1. Diploma of Introductory Engineering Studies candidates shall follow an approved course of study to obtain 24 credit points, as specified in the Undergraduate Courses and Majors, and obtain all passing grades in all selected subjects.
2. The normal time for completion of the degree is one year full-time or two years part-time study. The maximum period of candidature for the diploma is normally five years.
3. Subjects successfully completed within the Diploma of Introductory Engineering Studies may be credited towards entry into the Bachelor of Engineering degree and/or the Bachelor of Engineering-Bachelor of Science joint degree with the approval of the Pro-Vice-Chancellor.
4. Candidates must surrender their Diploma of Introductory Engineering Studies on completion of either their Bachelor of Engineering degree or their Bachelor of Engineering-Bachelor of Science joint degree.

Academic requirements for course completion

5. A candidate for the diploma shall follow an approved course of study as specified in the program shown under Undergraduate Courses and Majors to obtain 24 credit points. This shall include the specified core subjects and elective subjects.

Period of candidature/completion

6. The normal time for completion of the course is one year full-time study or two years part-time study.
7. The maximum time for completion is five years.

Pass Conceded

8. A grade of Pass Minus (P-) or higher must be obtained in all subjects comprising the Diploma of Introductory Engineering Studies.

Advanced standing for prior study

9. Candidates for awards of the faculty may apply to obtain advanced standing for previous tertiary study as detailed in the Advanced Standing for Previous Studies and Recognised Prior Learning Policy and associated procedures.
10. Advanced standing for previous study granted towards the Diploma of Introductory Engineering Studies will normally only be granted for study undertaken in the previous five years.

Cancellation of advanced standing

11. Unless the faculty otherwise determines, advanced standing gained for any subject shall be cancelled five years after the date of the examination upon which the advanced standing is based if by then the candidate has not completed the course.

Supplementary examination for final subject towards the diploma

12. Supplementary examination will be offered in line with current faculty policy and guidelines.

Administration of the diploma

13. The diploma shall be administered by the Faculty of Science, Engineering and Information Technology.

DIPLOMA OF SCIENCE

see also *Courses and Majors, Diploma of Science on page 176*

Award requirements

1. A candidate for the diploma shall follow an approved course of study to obtain 24 credit points.
2. The normal time for completion of the degree is one year full-time or two years part-time study. The maximum period of candidature for the diploma is normally five years. The 24 credit points from requirement 1 shall be obtained. A grade of Pass (P) or higher must be obtained in all subjects.
3. A candidate who has successfully completed Year 12 Maths B, Chemistry or equivalent with HA or better is not eligible for entry into the diploma.
4. With the approval of the Pro-Vice-Chancellor, a candidate who has successfully completed the diploma may use subjects within the Diploma of Science for advanced standing towards degree programs offered within the Faculty of Science, Engineering and Information Technology.
5. Candidates who articulate from the Diploma of Science into a degree program within the Faculty of Science, Engineering and Information Technology must relinquish their existing diploma prior to graduating with a degree from the faculty.

Academic requirements for course completion

6. A candidate for the diploma shall follow an approved course of study as specified in the program shown under Undergraduate Courses and Majors to obtain 24 credit points. This shall include the specified core subjects and elective subjects.

Majors

7. The following majors are available within the Diploma of Science:
 - Information Technology
 - Science.
8. The major is not to be included on the testamur.

Period of candidature/completion

9. The normal time for completion of the course is one year full-time study or two years part-time.
10. The maximum time for completion is five years.
11. The maximum amount of time a student can take as leave of absence from the course is one year.

Pass Conceded

12. A grade of Pass (P) or higher must be obtained in all core subjects.

Advanced standing for prior study

13. Candidates for awards of the faculty may apply to obtain advanced standing for previous tertiary study as detailed in the Advanced Standing for Previous Studies and Recognised Prior Learning Policy and associated procedures.
14. Advanced standing for previous study granted towards the Diploma of Science may only be granted for study undertaken in the previous four years.

Cancellation of advanced standing

15. Unless the faculty otherwise determines, advanced standing granted for any subject shall be cancelled 10 years after the date of the examination upon which the advanced standing is based if by then the candidate has not completed the course.

Supplementary examination for final subject towards the diploma

16. Supplementary examination will be offered in line with current faculty policy and guidelines.

Administration of the diploma

16. The diploma shall be administered by the Faculty of Science, Engineering and Information Technology.

FACULTY OF SCIENCE, ENGINEERING AND INFORMATION TECHNOLOGY

UNDERGRADUATE COURSES AND MAJORS

Students are advised that all subjects are offered on condition that staff and resources are available.

TEACHING PERIODS (previously referred to as “Semesters”) and STUDY PERIODS

The academic year is divided into two Teaching Periods (1 January to 30 June and 1 July to 31 December). Teaching Periods (TP) were previously known as semesters. Within the two Teaching Periods are 12 main study periods. Each Study Period (SP) has a designated start and end date, census date, date for withdrawal without academic penalty, and date for release of subject results. The majority of subjects will fall in either Study Period 1 (SP1) or Study Period 2 (SP2). Block Mode subjects may fall in Study Periods 3 to 11.

Bachelor of Applied Modelling

Townsville

Note: The Bachelor of Applied Modelling is not offered in 2009. No new enrolments will be accepted.

The Bachelor of Applied Modelling program will provide students with core knowledge and training in theory, skills and application of modelling real world problems. It is designed for students who seek a career as a modeller within government departments and agencies, private industry (for example, mining, health or finance) or academia.

Students complete the core subjects (33 credit points) and select one of the science or business majors listed below.

Majors - business:

- Economics and Regional Development
- Financial Management

Majors - science:

- Aquaculture
- Archaeology
- Biochemistry/Molecular Biology
- Botany
- Chemistry
- Computer Science
- Environmental Earth Science
- Environmental Science
- Genetics and Genomics
- Geography
- Geology/Economic Geology
- Hydrology and Water Resources
- Marine Biology
- Microbiology
- Pharmacology
- Physiology
- Psychology
- Spatial Science
- Zoology

Note:

1. Students who wish to undertake the major in Economics and Regional Development or Financial Management should refer to the details for these majors shown below.
2. Students who wish to undertake a science major should refer to the appropriate major shown under the Bachelor of Science.

CORE SUBJECTS (total 33 credit points)

CP1200:03	Introduction to Computer Science 1
MA1000:03	Mathematical Foundations
MA1003:03	Mathematical Techniques
MA1020:03	Preparatory Mathematics
MA1800:03	Applied Modelling 1
MA2000:03	Mathematics for Scientists and Engineers
MA2201:03	Numerical Mathematics
MA2401:03	Statistics and Data Analysis for Environmental Science
MA2800:03	Applied Modelling 2
MA3800:03	Applied Modelling 3
PH1001:03	Preparatory Physics

Plus

MAJOR

Select one science or business major from the list above.

Plus

Remaining subjects to be selected from the schedule of approved subjects so that a total of 72 credit points of subjects are studied.

Economics and Regional Development

BU1002:03	Accounting for Decision Making
BU1003:03	Economics for Business
BX2021:03	Managerial Economics
BX2022:03	Macroeconomic Policy
BX2225:03	Forecasting
BX3021:03	International Trade

BX3022:03	Econometrics
<i>or</i>	
BX3025:03	Forecasting
BX3023:03	Economic Growth and Regional Development
BX3024:03	Contemporary Economic Policy and Social Welfare

Financial Management

BU1002:03	Accounting for Decision Making
BU1003:03	Economics for Business
BU2004:03	Financial Management
BU2006:03	Business Modelling
BX2031:03	Personal Portfolio Management
BX2032:03	Financial Institutions and Markets
BX3021:03	International Trade
BX3031:03	Multinational Business Finance
BX3032:03	Advanced Business Modelling
BX3033:03	Project Evaluation

Bachelor of Applied Modelling (Advanced)

Townsville

Note: The Bachelor of Applied Modelling (Advanced) is not offered in 2009. No new enrolments will be accepted.

Students who have completed Mathematics B at high school with a HA level will have the option of studying the Bachelor of Applied Modelling (Advanced).

Students complete the core subjects (36 credit points) and select one of the science or business majors listed below.

Majors - business:

- Economics and Regional Development
- Financial Management

Majors - science:

- Aquaculture
- Archaeology
- Biochemistry/Molecular Biology
- Botany
- Chemistry
- Computer Science
- Environmental Earth Science
- Environmental Science
- Genetics and Genomics
- Geography
- Geology/Economic Geology
- Hydrology and Water Resources
- Marine Biology
- Microbiology
- Pharmacology
- Physics
- Physiology
- Psychology
- Spatial Science
- Zoology

Note:

1. Students who wish to undertake the major in Economics and Regional Development or Financial Management should refer to the details for these majors shown below.

2. Students who wish to undertake a science major should refer to the appropriate major shown under the Bachelor of Science.

CORE SUBJECTS (total 36 credit points)

CP1200:03	Introduction to Computer Science 1
MA1000:03	Mathematical Foundations
MA1003:03	Mathematical Techniques
MA1800:03	Applied Modelling 1
MA2000:03	Mathematics for Scientists and Engineers
MA2201:03	Numerical Mathematics
MA2401:03	Statistics and Data Analysis for Environmental Science
MA2800:03	Applied Modelling 2
MA3405:03	Multivariate Statistical Methods
MA3605:03	Operations Research and Modelling

MA3800:03	Applied Modelling 3
PH1001:03	Preparatory Physics

Plus

MAJOR

Select one science or business major from the list above.

Plus

Remaining subjects to be selected from the schedule of approved subjects so that a total of 72 credit points of subjects are studied.

Economics and Regional Development

BU1002:03	Accounting for Decision Making
BU1003:03	Economics for Business
BX2021:03	Managerial Economics
BX2022:03	Macroeconomic Policy
BX2225:03	Forecasting
BX3021:03	International Trade

BX3022:03	Econometrics
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or

BX3025:03	Forecasting
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BX3023:03	Economic Growth and Regional Development
BX3024:03	Contemporary Economic Policy and Social Welfare

Financial Management

BU1002:03	Accounting for Decision Making
BU1003:03	Economics for Business
BU2004:03	Financial Management
BU2006:03	Business Modelling
BX2031:03	Personal Portfolio Management
BX2032:03	Financial Institutions and Markets
BX3021:03	International Trade
BX3031:03	Multinational Business Finance
BX3032:03	Advanced Business Modelling
BX3033:03	Project Evaluation

Bachelor of Applied Science and Bachelor of Applied Science with Honours

Townsville

Majors:

- Aquaculture

The core subjects for the Aquaculture major are listed below.

Aquaculture

Townsville, Cairns (first and second year only)

LEVEL 1

BT1001:03	Introduction to Plant Science
BZ1001:03	Fundamentals of Biology

CH1001:03	Chemistry: A Central Science
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or

CH1011:03	Chemistry for the Natural Sciences
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ZL1001:03	The Diversity of Animal Life
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Plus

12 credit points of approved level 1 AG or BM, BT, BZ, CH, EA, EV, MA, MB, PH, ZL subjects satisfying the Award Requirements for the Bachelor of Applied Science

LEVEL 2

AQ2001:03	Introduction to Aquaculture
AQ2002:03	Aquaculture of Tropical Species
BS2001:03	Quantitative Methods in Biology

Plus

9 credit points of subjects selected from:

BT2240:03	Marine Plants and Algae in their Environments
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or

MB2090:03	Tropical Marine Ecosystems
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BZ2470:03 Ecological and Evolutionary Physiology of Plants
or
MI2031:03 Marine Microbiology

MB2080:03 Marine and Terrestrial Invertebrate Biology
or
ZL2008:03 Animal Adaptation to Environmental Change

Plus

6 credit points of approved level 2 BT, BZ, MB, MI, ZL subjects satisfying the Award Requirements for the Bachelor of Applied Science

LEVEL 3

AQ3002:03 Aquaculture: Feeds and Nutrition
AQ3003:03 Aquaculture: Propagation
AQ3004:03 Aquaculture: Genetics and Stock Improvement
AQ3005:03 Aquaculture: Management of Culture Systems
AQ3007:03 Aquatic Animal Ecophysiology
AQ3008:03 Aquaculture: Systems Design
MI3031:03 Aquatic Microbial Pathobiology

Plus

3 credit points of approved level 3 AQ, BT, BZ, MB, MI, ZL subjects satisfying the Award Requirements for the Bachelor of Applied Science

LEVEL 4 (PASS)

AQ5010:06 Aquaculture: Production and Evaluation Report
AQ5012:06 Aquaculture: Hatchery Techniques
AQ5013:03 Aquaculture: Special Topic

Plus

9 credit points of approved level 5 subjects satisfying the Award Requirements for the Bachelor of Applied Science

LEVEL 4 (HONOURS)

AQ4022:03 Aquaculture: Literature Review and Seminar
AQ4121:06 Aquaculture: Research Project and Thesis (Part 1 of 2)
AQ4122:06 Aquaculture: Research Project and Thesis (Part 2 of 2)
AQ5013:03 Aquaculture: Special Topic

Plus

6 credit points of approved level 5 subjects satisfying the Award Requirements for the Bachelor of Applied Science

Bachelor of Arts-Bachelor of Science and Bachelor of Arts-Bachelor of Science with Honours in both or either discipline

Townsville, Cairns

Course details are shown in the Faculty of Arts, Education and Social Sciences section in this handbook.

Bachelor of Biotechnology

Townsville

Advances in genetic engineering, cell culture, molecular biology and agriculture have rapidly generated new applications for biological products, and an increasing variety of job opportunities in the field. This field is now seen as a solid career option by domestic and overseas students, and the establishment of a biotechnology degree allows JCU to focus its existing subject offerings and position itself as a provider of cutting-edge science in the region. Depending on the combination of subjects selected, students can focus on one of several discipline areas including Aquaculture (choose AQ2001, AQ3003, AQ3004, AQ5021), Pharmacology (choose BC2024, BC3102, BC3202, HS1000, MI2021) or Tropical Agriculture (AG1002, AG1003, AG1004, AG2001, AG2005, level 3 Agriculture subjects).

LEVEL 1

CORE SUBJECTS

AG1002:03 Biological Principles for Agricultural and Veterinary Sciences

or

BZ1001:03 Fundamentals of Biology

BM1000:03 Introductory Biochemistry and Microbiology
CH1001:03 Chemistry: A Central Science
CH1002:03 Chemistry: Principles and Applications
MA1000:03 Mathematical Foundations

Plus

9 credit points of options selected from:

AG1003:03 Plant Biology for Agricultural and Veterinary Sciences
or
BT1001:03 Introduction to Plant Science

AG1004:03 Animal Biology for Agricultural and Veterinary Sciences
or
ZL1001:03 The Diversity of Animal Life

CP1500:03 Introduction to Database Principles
HS1000:03 Epidemiology
MA1401:03 Statistics and Data Analysis 1

LEVEL 2

CORE SUBJECTS

AG2001:03 Quantitative Methods in Agricultural Science

or

BS2001:03 Quantitative Methods in Biology

AG2005:03 Genetics for Agriculture

or

BZ2420:03 Genetics for Biology

BC2013:03 Principles of Biochemistry

BC2023:03 Molecular Genetics

MI2011:03 Microbial Diversity

Plus

9 credit points of options selected from:

AQ2001:03 Introduction to Aquaculture

BC2024:03 Cell Regulation

CH2012:03 Environmental Analytical Techniques

CH2032:03 Organic Chemistry

MB2060:03 Marine Ecology and Environmental Assessment

MI2021:03 Introductory Infectious Diseases and Immunobiology

LEVEL 3

CORE SUBJECTS

BC3101:03 Genes, Genomes and Development

BC3201:03 Biotechnology

BZ3450:03 Ecological and Conservation Genetics

Plus

One subject selected from the following:

AQ5021:03 Aquaculture: Special Topic 1

BC3202:03 Special Topics in Biochemistry and Molecular Biology

BZ5501:03 Special Topic 1

BZ5502:03 Special Topic 2

Plus 12 credit points selected from the following:

AQ3003:03 Aquaculture: Propagation

AQ3004:03 Aquaculture: Genetics and Stock Improvement

BC3102:03 Advanced Cell Biology

BT3010:03 Biology of Plant Survival

CH3032:03 Organic Chemistry

CH3100:03 Molecular Basis of Therapeutics 4

EV3254:03 Tropical Agroforestry

MB3150:03 Fisheries Science

MI3061:03 Advanced Immunobiology

PP3150:03 Chemical Pharmacology

ZL3061:03 Topics in Animal Behaviour (not offered in 2009)

Bachelor of Business and Environmental Science

Townsville

The Bachelor of Business and Environmental Science will provide students with core knowledge and training in theory, skills and application of business and environmental science. It is designed for students who seek a career in a modern business setting in which knowledge of environmental science is crucial. The subjects through levels 1 to 3 provide a coherent progression in business and environmental science principles and applications.

LEVEL 1

BU1002:03 Accounting for Decision Making

BU1003:03 Economics for Business

BU1004:03 Management, People and Organisations

BU1005:03	Personal and Professional Skills in Business
CH1001:03	Chemistry: A Central Science
EV1001:03	Introduction to Environmental Science
MA1401:03	Statistics and Data Analysis 1
ZL1001:03	The Diversity of Animal Life

LEVEL 2

Select any four subjects (12 credit points) from:

BU2004:03	Financial Management
BU2005:03	Entrepreneurship
BU2006:03	Business Modelling
BU2007:03	Project Management
BU2008:03	Leadership and Strategic Thinking
BU2010:03	Business Research Methods
BU2208:03	Marketing Fundamentals
Plus	
EV2201:03	Tourism and the Environment
EV2502:03	Introduction to Geographic Information Systems
MB2060:03	Marine Ecology and Environmental Assessment

Plus

One subject (3 credit points) selected from:

AQ2001:03	Introduction to Aquaculture
AQ2002:03	Aquaculture of Tropical Species
EA2404:03	From Icehouse to Greenhouse
MB2080:03	Marine and Terrestrial Invertebrate Biology
MB2090:03	Tropical Marine Ecosystems

LEVEL 3

BX3023:03	Economic Growth and Regional Development
BX3072:03	Managing Small and Medium Enterprises
BX3073:03	Entrepreneurship in Emerging Economies

Plus

One level 3 BX subject (3 credit points)

Plus

Four subjects (12 credit points) selected from:

AQ3015:03	Sustainable Aquaculture (not offered in 2009)
BZ3212:03	Tropical Wetlands Ecology and Management
EV3002:03	Environmental Impact Assessment
EV3201:03	Managing Coastal and Marine Environments
EV3503:03	GIS for Environmental Analysis
MB3150:03	Fisheries Science
MB3200:03	Marine Conservation Biology
MB3270:03	Coastal and Estuarine Ecosystems

Bachelor of Conservation Biology and Bachelor of Conservation Biology with Honours

Townsville, Cairns

The Bachelor of Conservation Biology will provide students with core knowledge and training in theory, skills and application of biology and ecology in conservation. It is designed for students who seek a career as a biologist within government departments and agencies, consulting companies, national and international conservation organisations or academia. The core subjects through levels 1 to 3 provide a fundamental background in biological and associated sciences essential for the practising biologist. A substantial range of subjects in marine biology, plant sciences, evolutionary biology, genetics, zoology and environmental science provide students with the opportunity to:

- (i) develop new and relevant skills;
- (ii) enhance their breadth of ecological knowledge; and/or
- (iii) enhance their depth of ecological knowledge of specific habitats of plant and animal groups.

LEVEL 1**CORE SUBJECTS**

BT1001:03	Introduction to Plant Science
BZ1001:03	Fundamentals of Biology
CH1001:03	Chemistry: A Central Science (Townsville)
<i>or</i>	
CH1012:03	Molecular Chemistry (Cairns)
EV1001:03	Introduction to Environmental Science
MA1401:03	Statistics and Data Analysis 1
ZL1001:03	The Diversity of Animal Life

OPTIONS

Two subjects selected from:

AG1001:03	Agriculture and Agroecosystems
EA1002:03	Environmental Earth Science
EA1110:03	Evolution of the Earth
MB1110:03	Introductory Marine Science (Townsville)

LEVEL 2**CORE SUBJECTS**

BS2001:03	Quantitative Methods in Biology
BZ2420:03	Genetics for Biology
BZ2440:03	Ecology and Conservation
ZL2008:03	Animal Adaptation to Environmental Change

OPTIONS

Select one subject from Group 1 and a further three subjects from Group 1 or 2 to achieve a total of eight subjects for level 2.

Group 1 Subjects

BT2400:03	Flowering Plant Diversity
MB2090:03	Tropical Marine Ecosystems
ZL2005:03	Marine and Terrestrial Invertebrate Biology (Townsville)

Group 2 Subjects

BC2023:03	Molecular Genetics
BZ2450:03	Biodiversity of Tropical Australia
BZ2470:03	Ecological and Evolutionary Physiology of Plants
EV2401:03	Australian Landscape Processes and Evolution (Townsville)
EA2404:03	From Icehouse to Greenhouse
EV2501:03	Introduction to Environmental Remote Sensing
EV2502:03	Introduction to Geographic Information Systems
MB2060:03	Marine Ecology and Environmental Assessment (Townsville)
MB2070:03	Evolution and Biogeography of Marine Organisms (Townsville)

LEVEL 3**CORE SUBJECTS**

BZ3215:03	Conservation Biology
BZ3450:03	Ecological and Conservation Genetics

OPTIONS

Select one subject from each of the following three groups, and a further three subjects from any of the three groups to achieve a total of eight subjects for level 3

Group 1 Subjects

BT3010:03	Biology of Plant Survival
EV3002:03	Environmental Impact Assessment
EV3502:03	Advanced Geographic Information Systems
MB3150:03	Fisheries Science (Townsville)
MB3200:03	Marine Conservation Biology (Townsville)
MB3230:03	Design and Analyses in Ecological Studies (Townsville)
MB3260:03	Ecological Dynamics: An Introduction to Modelling (Townsville)

ZL3205:03	Wildlife Ecology and Management (Townsville)
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Group 2 Subjects

BT3400:03	Tropical Flora of Australia
ZL3203:03	The Australian Vertebrate Fauna
ZL3211:03	Tropical Australian Herpetology (even years)
ZL3420:03	Ornithology (odd years)
ZL3501:03	Tropical Entomology (Cairns)

Group 3 Subjects

BZ3210:03	Rainforest Ecosystems (Townsville)
BZ3212:03	Tropical Wetlands Ecology and Management
BZ3220:03	Rainforest Populations and Communities (Townsville)
BZ3400:03	Population and Community Ecology (Cairns)
BZ3420:03	Tropical Ecosystems and Climate Change (Cairns)
EV3203:03	Conserving Marine Wildlife: Sea Mammals, Birds, Reptiles (Townsville)
EV3205:03	Conserving Tropical Rainforests (Cairns)

LEVEL 4 (HONOURS)

BT4001:12	Botany Honours (Part 1 of 2)
BT4002:12	Botany Honours (Part 2 of 2)
<i>or</i>	
BZ4001:12	Botany/Zoology Honours (Part 1 of 2)
BZ4002:12	Botany/Zoology Honours (Part 2 of 2)
<i>or</i>	

MB4001:12	Marine Biology Honours (Part 1 of 2)
MB4002:12	Marine Biology Honours (Part 2 of 2)
<i>or</i>	
ZL4001:12	Zoology Honours (Part 1 of 2)
ZL4002:12	Zoology Honours (Part 2 of 2)

Bachelor of Conservation Biology (Advanced) and Bachelor of Conservation Biology (Advanced) with Honours

Townsville, Cairns

The Bachelor of Conservation Biology (Advanced) will provide students with core knowledge and training in theory, skills and application of biology and ecology in conservation. This advanced course is oriented towards high achievers who will undertake special research projects and other activities, including internship with a relevant biological research program. It enhances employment opportunities especially in research and government departments. The core subjects through levels 1 to 3 provide a fundamental background in biological and associated sciences essential for the practising biologist. Two core subjects (BZ3000 and BZ3001) provide advanced training in conservation biology research. A substantial range of subjects in marine biology, plant sciences, evolutionary biology, genetics, zoology and environmental science provide students with the opportunity to:

- develop new and relevant skills;
- enhance their breadth of ecological knowledge; and/or
- enhance their depth of ecological knowledge of specific habitats of plant and animal groups.

LEVEL 1

CORE SUBJECTS

BT1001:03	Introduction to Plant Science
BZ1001:03	Fundamentals of Biology

CH1001:03	Chemistry: A Central Science (Townsville)
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or

CH1012:03	Molecular Chemistry (Cairns)
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EV1001:03	Introduction to Environmental Science
MA1401:03	Statistics and Data Analysis 1
ZL1001:03	The Diversity of Animal Life

OPTIONS

Two subjects selected from:

AG1001:03	Agriculture and Agroecosystems
EA1002:03	Environmental Earth Science
EA1110:03	Evolution of the Earth
MB1110:03	Introductory Marine Science (Townsville)

LEVEL 2

CORE SUBJECTS

BS2001:03	Quantitative Methods in Biology
BZ2420:03	Genetics for Biology
BZ2440:03	Ecology and Conservation
ZL2008:03	Animal Adaptation to Environmental Change

OPTIONS

Select one subject from Group 1 and a further three subjects from Group 1 or 2 to achieve a total of eight subjects for level 2

Group 1 Subjects

BT2400:03	Flowering Plant Diversity
MB2090:03	Tropical Marine Ecosystems
ZL2005:03	Marine and Terrestrial Invertebrate Biology (Townsville)

Group 2 Subjects

BC2023:03	Molecular Genetics
BZ2450:03	Biodiversity of Tropical Australia
BZ2470:03	Ecological and Evolutionary Physiology of Plants
EV2401:03	Australian Landscape Processes and Evolution (Townsville)
EA2404:03	From Icehouse to Greenhouse
EV2501:03	Introduction to Environmental Remote Sensing
EV2502:03	Introduction to Geographic Information Systems
MB2060:03	Marine Ecology and Environmental Assessment (Townsville)
MB2070:03	Evolution and Biogeography of Marine Organisms (Townsville)

LEVEL 3

CORE SUBJECTS

BZ3000:03	Projects in Biology
BZ3002:03	Biology Seminar
BZ3215:03	Conservation Biology
BZ3450:03	Ecological and Conservation Genetics

OPTIONS

Select one subject from each of the following three groups, and one further subject from any of the three groups to achieve a total of eight subjects for level 3

Group 1 Subjects

BT3010:03	Biology of Plant Survival
EV3002:03	Environmental Impact Assessment
EV3502:03	Advanced Geographic Information Systems
MB3150:03	Fisheries Science (Townsville)
MB3200:03	Marine Conservation Biology (Townsville)
MB3230:03	Design and Analyses in Ecological Studies (Townsville)
MB3260:03	Ecological Dynamics: An Introduction to Modelling (Townsville)
ZL3205:03	Wildlife Ecology and Management (Townsville)

Group 2 Subjects

BT3400:03	Tropical Flora of Australia
ZL3203:03	The Australian Vertebrate Fauna
ZL3211:03	Tropical Australian Herpetology (even years)
ZL3420:03	Ornithology (odd years)
ZL3501:03	Tropical Entomology (Cairns)

Group 3 Subjects

BZ3210:03	Rainforest Ecosystems (Townsville)
BZ3212:03	Tropical Wetlands Ecology and Management
BZ3220:03	Rainforest Populations and Communities (Townsville)
BZ3400:03	Population and Community Ecology (Cairns)
BZ3420:03	Tropical Ecosystems and Climate Change (Cairns)
EV3203:03	Conserving Marine Wildlife: Sea Mammals, Birds, Reptiles (Townsville)
EV3205:03	Conserving Tropical Rainforests (Cairns)

LEVEL 4 (HONOURS)

BT4001:12	Botany Honours (Part 1 of 2)
BT4002:12	Botany Honours (Part 2 of 2)

or

BZ4001:12	Botany/Zoology Honours (Part 1 of 2)
BZ4002:12	Botany/Zoology Honours (Part 2 of 2)

or

MB4001:12	Marine Biology Honours (Part 1 of 2)
MB4002:12	Marine Biology Honours (Part 2 of 2)

or

ZL4001:12	Zoology Honours (Part 1 of 2)
ZL4002:12	Zoology Honours (Part 2 of 2)

Bachelor of Business-Bachelor of Information Technology

Townsville, Cairns

Course details are shown in the Faculty of Law, Business and the Creative Arts section of this handbook.

Bachelor of Commerce-Bachelor of Information Technology

Townsville, Cairns

Note: The Bachelor of Commerce-Bachelor of Information Technology is suspended. No new enrolments will be accepted in this course. Students currently enrolled may continue their studies in the course and should refer to previous editions of this handbook.

Bachelor of Education-Bachelor of Science, Bachelor of Education-Bachelor of Science with Honours and Bachelor of Education with Honours-Bachelor of Science

Townsville, Cairns

Course details are shown in the Faculty of Arts, Education and Social Sciences section of this handbook.

Bachelor of Engineering

Townsville, Cairns (level 1 studies only)

Majors:

- Chemical Engineering
- Civil Engineering
- Computer Systems Engineering
- Electrical and Electronic Engineering
- Environmental Engineering
- Mechanical Engineering

Chemical Engineering

LEVEL 1

TEACHING PERIOD 1

EG1000:03	Engineering 1
EG1001:03	Engineering Statics
EG1002:03	Computing for Engineers
MA1000:03	Mathematical Foundations

TEACHING PERIOD 2

EG1010:03	Process Engineering
EG1011:03	Engineering Dynamics
EG1012:03	Electric Circuits
MA1003:03	Mathematical Techniques

LEVEL 2

TEACHING PERIOD 1

CH1001:03	Chemistry: A Central Science
CL2501:03	Process Analysis
MA2000:03	Mathematics for Scientists and Engineers
ME2512:03	Thermofluid Mechanics

TEACHING PERIOD 2

CH1002:03	Chemistry: Principles and Applications
CS3008:03	Fluid Mechanics
EE3600:03	Automatic Control 2
EG2010:03	Materials Science and Engineering

LEVEL 3

TEACHING PERIOD 1

CL3010:03	Chemical Engineering Thermodynamics
CL3021:03	Mass Transfer Operations
CL3030:03	Reactor Design

EG3000:03 Engineering Project Management (odd years)
or

EG4000:03 Engineering Economics and Entrepreneurship (even years)

TEACHING PERIOD 2

CH2012:03	Environmental Analytical Techniques
EG3021:03	Applied Engineering Analysis
ME3512:03	Heat and Mass Transfer
EE4600:03	Automatic Control 3

LEVEL 4

TEACHING PERIOD 1

CL4040:03	Process Safety, Design and Management
CL4071:03	Chemical Engineering Design (Part 1 of 2)

EG3000:03 Engineering Project Management (odd years)
or

EG4000:03 Engineering Economics and Entrepreneurship (even years)

EG4011:03 Thesis Part 1 of 2

TEACHING PERIOD 2

CL4072:03	Chemical Engineering Design (Part 2 of 2)
CL4537:03	Mineral and Solids Processing
CL4538:03	Bioprocess Engineering
EG4012:03	Thesis Part 2 of 2

Note:

EG4011:03 Thesis Part 1 of 2 and EG4012:03 Thesis Part 2 of 2 are normally offered in Study Periods 1 and 2, respectively. Other Study

Period combinations may be possible. See the Associate Dean (Engineering) for advice and approval.

Civil Engineering

LEVEL 1

TEACHING PERIOD 1

EG1000:03	Engineering 1
EG1001:03	Engineering Statics
EG1002:03	Computing for Engineers
MA1000:03	Mathematical Foundations

TEACHING PERIOD 2

EG1010:03	Process Engineering
EG1011:03	Engineering Dynamics
EG1012:03	Electric Circuits
MA1003:03	Mathematical Techniques

LEVEL 2

TEACHING PERIOD 1

CS2001:03	Engineering Strength of Materials
CS2002:03	Catchment, Stream and Lake Engineering
MA2000:03	Mathematics for Scientists and Engineers
ME2512:03	Thermofluid Mechanics

TEACHING PERIOD 2

CS2003:03	Introduction to Structural Design
CS2005:03	Introduction to Geotechnical Engineering
EG2010:03	Materials Science and Engineering
EG3021:03	Applied Engineering Analysis

LEVEL 3

TEACHING PERIOD 1

CS3000:03	Structural Analysis
CS3002:03	Soil Mechanics and Geology

EG3000:03 Engineering Project Management (odd years)
or

EG4000:03 Engineering Economics and Entrepreneurship (even years)

EG3001:03 Finite Element Analysis

TEACHING PERIOD 2

CS2004:03	Surveying and Construction (odd years)
<i>or</i>	
CS3004:03	Transportation Engineering (even years)

CS3001:03	Concrete Engineering
CS3003:03	Design of Steel and Concrete Structures
CS3008:03	Fluid Mechanics

LEVEL 4

TEACHING PERIOD 1

CS4001:03	Foundation Engineering and Rock Mechanics
CS4002:03	Hydraulic and Coastal Engineering

EG3000:03 Engineering Project Management (odd years)
or

EG4000:03 Engineering Economics and Entrepreneurship (even years)

EG4011:03 Thesis Part 1 of 2

TEACHING PERIOD 2

CS2004:03	Surveying and Construction (odd years)
<i>or</i>	
CS3004:03	Transportation Engineering (even years)

CS4005:03	Civil Engineering Design
CS4008:03	Water and Wastewater Engineering
EG4012:03	Thesis Part 2 of 2

Note:

EG4011:03 Thesis Part 1 of 2 and EG4012:03 Thesis Part 2 of 2 are normally offered in Study Periods 1 and 2, respectively. Other Study

Period combinations may be possible. See the Associate Dean (Engineering) for advice and approval.

Computer Systems Engineering

LEVEL 1

TEACHING PERIOD 1

EG1000:03 Engineering 1
EG1001:03 Engineering Statics
EG1002:03 Computing for Engineers
MA1000:03 Mathematical Foundations

TEACHING PERIOD 2

EG1010:03 Process Engineering
EG1011:03 Engineering Dynamics
EG1012:03 Electric Circuits
MA1003:03 Mathematical Techniques

LEVEL 2

TEACHING PERIOD 1

CC2510:03 Digital Logic and Computing Methods
CP1500:03 Introduction to Database Principles
EE2201:03 Circuit Theory
MA2000:03 Mathematics for Scientists and Engineers

TEACHING PERIOD 2

CC2511:03 Embedded Systems Design
CP1300:03 Introduction to Computer Science 2
EE2300:03 Electronics 1
EG2010:03 Materials Science and Engineering

LEVEL 3

TEACHING PERIOD 1

EE3001:03 Signal Processing 2
EE3300:03 Electronics 2
EE3700:03 Communications Systems Principles

EG3000:03 Engineering Project Management (odd years)
or
EG4000:03 Engineering Economics and Entrepreneurship (even years)

TEACHING PERIOD 2

CC3501:03 Computer Interfacing and Control (even years)
CP2004:03 Object Oriented Programming with Java
EE3600:03 Automatic Control 2
EG3021:03 Applied Engineering Analysis
In odd years one subject selected from:
CP2402:03 Operating Systems and Architectures
CP5110:03 Cryptography
CP5290:03 Unix - Linux Systems
EE4710:03 Communications Systems Propagation

LEVEL 4

TEACHING PERIOD 1

CP3120:03 Object Oriented Software Engineering
EE4000:03 Signal Processing 3

EG3000:03 Engineering Project Management (odd years)
or
EG4000:03 Engineering Economics and Entrepreneurship (even years)

EG4011:03 Thesis Part 1 of 2

TEACHING PERIOD 2

CC3501:03 Computer Interfacing and Control (even years)
CP3110:03 Fundamentals of Software Engineering
EG4012:03 Thesis Part 2 of 2
In odd years two subjects selected from:
CP2402:03 Operating Systems and Architectures
CP5110:03 Cryptography
CP5290:03 Unix - Linux Systems
EE4600:03 Automatic Control 3
EE4710:03 Communications Systems Propagation (odd years)
In even years one subject selected from:
CP2402:03 Operating Systems and Architectures
CP5110:03 Cryptography
CP5290:03 Unix - Linux Systems
EE4600:03 Automatic Control 3

Note:

EG4011:03 Thesis Part 1 of 2 and EG4012:03 Thesis Part 2 of 2 are normally offered in Study Periods 1 and 2, respectively. Other Study

Period combinations may be possible. See the Associate Dean (Engineering) for advice and approval.

Electrical and Electronic Engineering

LEVEL 1

TEACHING PERIOD 1

EG1000:03 Engineering 1
EG1001:03 Engineering Statics
EG1002:03 Computing for Engineers
MA1000:03 Mathematical Foundations

TEACHING PERIOD 2

EG1010:03 Process Engineering
EG1011:03 Engineering Dynamics
EG1012:03 Electric Circuits
MA1003:03 Mathematical Techniques

LEVEL 2

TEACHING PERIOD 1

CC2510:03 Digital Logic and Computing Methods
EE2201:03 Circuit Theory
MA2000:03 Mathematics for Scientists and Engineers
PH2019:03 Introduction to Electromagnetism Optics and Thermodynamics

TEACHING PERIOD 2

CC2511:03 Embedded Systems Design
CP1300:03 Introduction to Computer Science 2
or
PH2020:03 Physics for Engineers

EE2300:03 Electronics 1
EG2010:03 Materials Science and Engineering

LEVEL 3

TEACHING PERIOD 1

EE3001:03 Signal Processing 2
EE3300:03 Electronics 2
EE3700:03 Communications Systems Principles

EG3000:03 Engineering Project Management (odd years)
or
EG4000:03 Engineering Economics and Entrepreneurship (even years)

TEACHING PERIOD 2

CC3501:03 Computer Interfacing and Control (even years)
or
EE4710:03 Communications Systems Propagation (odd years)

EE3400:03 Power Engineering 2
EE3600:03 Automatic Control 2
EG3021:03 Applied Engineering Analysis

LEVEL 4

TEACHING PERIOD 1

EE4000:03 Signal Processing 3
EE4400:03 Power Engineering 3

EG3000:03 Engineering Project Management (odd years)
or
EG4000:03 Engineering Economics and Entrepreneurship (even years)

EG4011:03 Thesis Part 1 of 2

TEACHING PERIOD 2

CC3501:03 Computer Interfacing and Control (even years)
or
EE4710:03 Communications Systems Propagation (odd years)

EE4600:03 Automatic Control 3
EG4012:03 Thesis Part 2 of 2
EG4013:03 Asset Management, Maintenance and Reliability

Note:

EG4011:03 Thesis Part 1 of 2 and EG4012:03 Thesis Part 2 of 2 are normally offered in Study Periods 1 and 2, respectively. Other Study

Period combinations may be possible. See the Associate Dean (Engineering) for advice and approval.

Environmental Engineering

LEVEL 1

TEACHING PERIOD 1

EG1000:03	Engineering 1
EG1001:03	Engineering Statics
EG1002:03	Computing for Engineers
MA1000:03	Mathematical Foundations

TEACHING PERIOD 2

EG1010:03	Process Engineering
EG1011:03	Engineering Dynamics
EG1012:03	Electric Circuits
MA1003:03	Mathematical Techniques

LEVEL 2

TEACHING PERIOD 1

CH1001:03	Chemistry: A Central Science
CS2001:03	Engineering Strength of Materials
CS2002:03	Catchment, Stream and Lake Engineering
MA2000:03	Mathematics for Scientists and Engineers

TEACHING PERIOD 2

BZ2440:03	Ecology and Conservation
CH1002:03	Chemistry: Principles and Applications
CS2005:03	Introduction to Geotechnical Engineering
EG2010:03	Materials Science and Engineering

LEVEL 3

TEACHING PERIOD 1

CS3002:03	Soil Mechanics and Geology
EG3000:03	Engineering Project Management (odd years)
<i>or</i>	
EG4000:03	Engineering Economics and Entrepreneurship (even years)

LA2902:03	Environmental Law and Policy
ME2512:03	Thermofluid Mechanics

TEACHING PERIOD 2

CH2012:03	Environmental Analytical Techniques
CS3006:03	Ecological Engineering (even years)
<i>or</i>	
CS4007:03	Sustainable Design, Waste and Pollution Technology (odd years)

CS3008:03	Fluid Mechanics
EG3021:03	Applied Engineering Analysis

LEVEL 4

TEACHING PERIOD 1

CS4002:03	Hydraulic and Coastal Engineering
EG3000:03	Engineering Project Management (odd years)
<i>or</i>	
EG4000:03	Engineering Economics and Entrepreneurship (even years)

EG4011:03	Thesis Part 1 of 2
Any level 3 or level 5 EV subject	

TEACHING PERIOD 2

CS3006:03	Ecological Engineering (even years)
<i>or</i>	
CS4007:03	Sustainable Design, Waste and Pollution Technology (odd years)

CS4008:03	Water and Wastewater Engineering
CS4009:03	Environmental Engineering Design
EG4012:03	Thesis Part 2 of 2

Note:

EG4011:03 Thesis Part 1 of 2 and EG4012:03 Thesis Part 2 of 2 are normally offered in Study Periods 1 and 2, respectively. Other Study

Period combinations may be possible. See the Associate Dean (Engineering) for advice and approval.

Mechanical Engineering

LEVEL 1

TEACHING PERIOD 1

EG1000:03	Engineering 1
EG1001:03	Engineering Statics
EG1002:03	Computing for Engineers
MA1000:03	Mathematical Foundations

TEACHING PERIOD 2

EG1010:03	Process Engineering
EG1011:03	Engineering Dynamics
EG1012:03	Electric Circuits
MA1003:03	Mathematical Techniques

LEVEL 2

TEACHING PERIOD 1

CS2001:03	Engineering Strength of Materials
MA2000:03	Mathematics for Scientists and Engineers
ME2512:03	Thermofluid Mechanics
ME2521:03	Dynamics of Machine Elements

TEACHING PERIOD 2

EE3600:03	Automatic Control 2
EG2010:03	Materials Science and Engineering
EG3021:03	Applied Engineering Analysis
ME2525:03	Machine Element Design

LEVEL 3

TEACHING PERIOD 1

EG3000:03	Engineering Project Management (odd years)
<i>or</i>	
EG4000:03	Engineering Economics and Entrepreneurship (even years)

EG3001:03	Finite Element Analysis
ME3511:03	Dynamics and Acoustics

ME3515:03	Material Selection in Design (even years)
<i>or</i>	

ME4521:03	Bulk Materials Handling (odd years)
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TEACHING PERIOD 2

CS3008:03	Fluid Mechanics
EE4600:03	Automatic Control 3
ME3512:03	Heat and Mass Transfer
ME3525:03	Mechanical Design

LEVEL 4

TEACHING PERIOD 1

EG3000:03	Engineering Project Management (odd years)
<i>or</i>	
EG4000:03	Engineering Economics and Entrepreneurship (even years)

EG4011:03	Thesis Part 1 of 2
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ME3515:03	Material Selection in Design (even years)
<i>or</i>	

ME4521:03	Bulk Materials Handling (odd years)
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ME4513:03	Advanced Fluid Mechanics
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TEACHING PERIOD 2

EG4012:03	Thesis Part 2 of 2
EG4013:03	Asset Management, Maintenance and Reliability
ME4515:03	Advanced Mechanical Engineering Design
ME4522:03	Energy, Conversion and Refrigeration

Note:

EG4011:03 Thesis Part 1 of 2 and EG4012:03 Thesis Part 2 of 2 are normally offered in Study Periods 1 and 2, respectively. Other Study Period combinations may be possible. See the Associate Dean (Engineering) for advice and approval.

Bachelor of Engineering-Bachelor of Science

Townsville, Cairns (level 1 studies only)

Majors - Engineering:

- Chemical Engineering

- Civil Engineering
- Computer Systems Engineering
- Electrical and Electronic Engineering
- Environmental Engineering
- Mechanical Engineering

Majors - Science:

- Aquaculture
- Archaeology
- Biochemistry/Molecular Biology
- Botany
- Chemistry
- Computer Science
- Environmental Earth Science
- Environmental Science
- Geography
- Geology/Economic Geology
- Marine Biology
- Mathematics
- Microbiology
- Pharmacology
- Physics
- Physiology
- Spatial Science
- Zoology

Chemical Engineering

Subjects comprising the Bachelor of Engineering (Chemical) major

Minus

6 credit points from:

- | | |
|-----------|--------------------------------|
| CL4537:03 | Minerals and Solids Processing |
| CL4538:03 | Bioprocess Engineering |
| EE4600:03 | Automatic Control 3 |

Plus

30 credit points of Science, including an approved Science major

Civil Engineering

Subjects comprising the Bachelor of Engineering (Civil) major

Minus

6 credit points from:

- | | |
|-----------|---|
| CS2004:03 | Surveying and Construction (odd years) |
| CS3004:03 | Transportation Engineering (even years) |
| CS4008:03 | Water and Wastewater Engineering |

Plus

30 credit points of Science, including an approved Science major

Computer Systems Engineering

Subjects comprising the Bachelor of Engineering (Computer Systems) major

Minus

6 credit points from:

- | | |
|-----------|-------------------------------------|
| CP2402:03 | Operating Systems and Architectures |
| CP5110:03 | Cryptography |
| CP5290:03 | Unix - Linux Systems |
| EE4600:03 | Automatic Control 3 |
| EE4710:03 | Communications Systems Propagation |

Plus

30 credit points of Science, including an approved Science major

Electrical and Electronic Engineering

Subjects comprising the Bachelor of Engineering (Electrical and Electronic) major

Minus

6 credit points from:

- | | |
|-----------|--|
| CC3501:03 | Computer Interfacing and Control |
| EE4710:03 | Communications Systems Propagation (odd years) |
| EG4013:03 | Asset Management, Maintenance and Reliability |

Plus

30 credit points of Science, including an approved Science major

Environmental Engineering

Subjects comprising the Bachelor of Engineering (Environmental) major

Minus

6 credit points from:

- | | |
|-----------------------------------|-----------------------------------|
| Any level 3 or level 5 EV subject | |
| CS3002:03 | Soil Mechanics and Geology |
| CS4002:03 | Hydraulic and Coastal Engineering |

Plus

30 credit points of Science, including an approved Science major

Mechanical Engineering

Subjects comprising the Bachelor of Engineering (Mechanical) major

Minus

6 credit points from:

- | | |
|-----------|---|
| EE4600:03 | Automatic Control 3 |
| EG4013:03 | Asset Management, Maintenance and Reliability |
| ME4521:03 | Bulk Materials Handling (odd years) |

Plus

30 credit points of Science, including an approved Science major

Bachelor of Environmental Science and Bachelor of Environmental Science with Honours

Townsville, Cairns

Environmental science applies knowledge from the biological, physical and social sciences to the study of environmental problems. Environmental scientists use their cross-disciplinary training to work in a range of private and public organisations involved in the solution of environmental problems. The Bachelor of Environmental Science is a three year course (with the option of honours for high achievers) which provides specialised training for students interested in professional work in the environmental science fields.

There are opportunities to include subjects that allow some level of additional areas of specialisation within the degree, framed around core environmental science subjects.

LEVEL 1**CORE SUBJECTS**

- | | |
|-----------|---------------------------------------|
| BZ1001:03 | Fundamentals of Biology |
| EA1002:03 | Environmental Earth Science |
| EV1001:03 | Introduction to Environmental Science |
| EV1002:03 | Society and Environment |
| MA1401:03 | Statistics and Data Analysis 1 |

Plus

One subject from the following subject group:

All level 1 CH and CP subjects together with BM1000:03 Introductory Biochemistry and Microbiology but excluding CH1020 Preparatory Chemistry and CP1030 Introduction to Computer Science 2

Plus

Two subjects satisfying the Award Requirements for the Bachelor of Environmental Science

LEVEL 2**CORE SUBJECTS**

- | | |
|-----------|--|
| BZ2440:03 | Ecology and Conservation |
| EV2003:03 | Introduction to Environmental Economics |
| EV2502:03 | Introduction to Geographic Information Systems |
| LA2902:03 | Environmental Law and Policy |

Plus

At least one subject from each of the following subject groups:

Group 1 Subjects

- | | |
|-----------|--|
| EA2404:03 | From Icehouse to Greenhouse |
| EV2401:03 | Australian Landscape Processes and Evolution |
| EV2501:03 | Introduction to Environmental Remote Sensing |

Group 2 Subjects

- | | |
|-----------|--|
| BS2001:03 | Quantitative Methods in Biology |
| BT2400:03 | Flowering Plant Diversity |
| BZ2420:03 | Genetics for Biology |
| BZ2450:03 | Biodiversity of Tropical Australia |
| BZ2470:03 | Ecological and Evolutionary Physiology of Plants |
| ZL2005:03 | Marine and Terrestrial Invertebrate Biology |
| ZL2008:03 | Animal Adaptation to Environmental Change |

Group 3 Subjects

EA2006:03	Hydrology
EA2007:03	Applied Soil Science
EA2510:03	Earth Resources, Exploration and Environment
EA2900:03	Introductory Field Geology

Plus

A subject selected from Science, appropriate to the level 3 specialisation plan, or an approved subject from other faculties

LEVEL 3**CORE SUBJECTS**

EV3002:03	Environmental Impact Assessment
EV3601:03	Social Impact Assessment: Environmental Management

Plus

Three subjects from one of the specialist areas:

Ecology and Conservation

BZ3400:03	Population and Community Ecology
<i>or</i>	
ZL3205:03	Wildlife Ecology and Management

BZ3215:03	Conservation Biology
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or

BZ3420:03	Tropical Ecosystems and Climate Change
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or

MB3200:03	Marine Conservation Biology
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BZ3220:03	Rainforest Populations and Communities
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Environmental Earth Science

EA3005:03	Minesite Rehabilitation
EA3006:03	Land Degradation Field Studies
EA3007:03	Field Studies in Tropical Water and Soil Science
EA3008:03	Advanced Hydrology
EA3800:03	Earth and Environmental Geochemistry
EV3002:03	Environmental Impact Assessment

Natural Resource Management

EV3001:03	Environmental and Regional Planning
EV3200:03	Terrestrial Resource Management
EV3201:03	Managing Coastal and Marine Environments
EV3205:03	Conserving Tropical Rainforests
EV3252:03	Indigenous Environmental Management
EV3401:03	Coasts and Catchments: Geomorphology and Management
EV3456:03	Catchment Assessment and Management

Plus

Three subjects from the following subject group:

AQ, BT, BZ, CH, EA, EV, MB, ZL subjects but may include subjects from other faculties appropriate to the level 3 specialisation plan. At least one of the subjects must be at level 3

LEVEL 4 (HONOURS)**Ecology and Conservation**

BT4001:12	Botany Honours (Part 1 of 2)
BT4002:12	Botany Honours (Part 2 of 2)
<i>or</i>	
BZ4001:12	Botany/Zoology Honours (Part 1 of 2)
BZ4002:12	Botany/Zoology Honours (Part 2 of 2)
<i>or</i>	
ZL4001:12	Zoology Honours (Part 1 of 2)
ZL4002:12	Zoology Honours (Part 2 of 2)

Environmental Earth Science

EA4301:12	Earth Science Honours (Part 1 of 2)
EA4302:12	Earth Science Honours (Part 2 of 2)
<i>or</i>	
EA4310:06	Earth Science Honours (Part-Time) (Part 1 of 4)
EA4320:06	Earth Science Honours (Part-Time) (Part 2 of 4)
EA4330:06	Earth Science Honours (Part-Time) (Part 3 of 4)
EA4340:06	Earth Science Honours (Part-Time) (Part 4 of 4)

Natural Resource Management

EV4701:12	Environmental Science Honours Part 1 of 2
EV4702:12	Environmental Science Honours Part 2 of 2

or

EV4710:06	Environmental Science Honours (Part-Time) Part 1 of 4
EV4720:06	Environmental Science Honours (Part-Time) Part 2 of 4
EV4730:06	Environmental Science Honours (Part-Time) Part 3 of 4
EV4740:06	Environmental Science Honours (Part-Time) Part 4 of 4

Bachelor of Geology and Bachelor of Geology with Honours**Townsville, Cairns (first year only)**

The Bachelor of Geology provides students with core knowledge and training in theory, skills and practical application of geology. It is designed for students who seek a professional career as a geologist within the mining and exploration industry, government agencies, consulting companies and academia. The core subjects provide a fundamental background and training in geology essential to becoming a geologist. Optional subjects are designed to provide a broad scientific background in first year and at levels 2 and 3 to provide students with additional relevant knowledge and skills from other disciplines.

LEVEL 1**CORE SUBJECTS - TOWNSVILLE**

CH1001:03	Chemistry: A Central Science
CH1020:03*	Preparatory Chemistry
EA1002:03	Environmental Earth Science
EA1110:03	Evolution of the Earth
EV1001:03	Introduction to Environmental Science

Plus

At least three level 1 subjects from BT, BZ, CH, CP, EV, MA, MB, PH, or ZL

* If the student has achieved 4SA in Senior Chemistry they shall omit CH1020 and take an additional subject from level 1 science subjects

CORE SUBJECTS - CAIRNS

CH1011:03	Chemistry for the Natural Sciences
CH1020:03	Preparatory Chemistry
EA1002:03	Environmental Earth Science
EA1110:03	Evolution of the Earth
EV1001:03	Introduction to Environmental Science

Plus

At least three level 1 subjects from BT, BZ, CH, CP, EV, MA, MB, PH, or ZL

* If the student has achieved 4SA in Senior Chemistry they shall omit CH1020 and take an additional subject from level 1 science subjects

LEVEL 2

EA2007:03	Applied Soil Science
EA2220:03	Earth Materials
EA2300:03	Crustal Processes
EA2510:03	Earth Resources, Exploration and Environment
EA2900:03	Introductory Field Geology
EV2502:03	Introduction to Geographic Information Systems

Plus

Two subjects from the following:

EA2006:03	Hydrology
EA2110:03	Introduction to Sedimentology
EA2404:03	From Icehouse to Greenhouse
EV2401:03	Australian Landscape Processes and Evolution

LEVEL 3

EA3005:03	Minesite Rehabilitation
EA3100:03	Earth Dynamics
EA3200:03	Deformation, Metamorphism and Hydrothermal Fluids
EA3400:03	Ore Genesis
EA3510:03	Geological Mapping
EA3511:03	Advanced Geological Mapping
EA3800:03	Earth and Environmental Geochemistry

Plus

One subject from the following:

EA3620:03	Palaeoenvironments and Change in Greater Australia
EA3700:03	Coastal Sedimentary Dynamics (Field Course)
EV3502:03	Advanced Geographic Information Systems

LEVEL 4 (HONOURS)

EA4101:12	Geology Honours (Part 1 of 2)
EA4102:12	Geology Honours (Part 2 of 2)
<i>or</i>	
EA4201:12	Metalliferous Economic Geology Honours (Part 1 of 2)
EA4202:12	Metalliferous Economic Geology Honours (Part 2 of 2)
<i>or</i>	
EA4110:06	Geology Honours (Part-Time) (Part 1 of 4)
EA4120:06	Geology Honours (Part-Time) (Part 2 of 4)
EA4130:06	Geology Honours (Part-Time) (Part 3 of 4)
EA4140:06	Geology Honours (Part-Time) (Part 4 of 4)
<i>or</i>	
EA4210:06	Metalliferous Economic Geology Honours (Part-Time) (Part 1 of 4)
EA4220:06	Metalliferous Economic Geology Honours (Part-Time) (Part 2 of 4)
EA4230:06	Metalliferous Economic Geology Honours (Part-Time) (Part 3 of 4)
EA4240:06	Metalliferous Economic Geology Honours (Part-Time) (Part 4 of 4)

Bachelor of Information Technology and Bachelor of Information Technology with Honours

Majors:

- Business Computing
- Computer Technology
- E-Business Entrepreneurship
- General Computing
- Geographical Information Systems
- Industry Professional
- Multimedia Game Development

Modern business and society are increasingly computer reliant. In recent years the Internet, the WWW and computer networks have become essential everyday business tools. The people who make these computer systems work are called Information Technology (IT) professionals. Not surprisingly, the IT industry is one of the world's prestige industries and IT graduates can expect exciting and rewarding careers, anywhere in the world. All eight Bachelor of Information Technology majors have been approved by the Australian Computer Society at the highest level, the Professional level.

Within the BlnfTech some majors include preparation for Industry Certificates from Cisco (the Cisco Certified Networking Associate) and Microsoft (the Microsoft Certified System Engineer).

This degree prepares students for work in a wide range of IT intensive industries. It combines a solid basis of computing theory with practical knowledge and skills in software (languages), software engineering, multimedia, databases and networking. Specialisation is provided in the eight majors of Business Computing, Computer Technology, E-business Entrepreneurship, General Computing, Geographic Information Systems, Industry Professional, Multimedia Game Development and Specific Application.

Please note that you should follow the subjects set out in your major for the year you STARTED that major, eg if you transferred into BlnfTech (Industry Professional) in 2003 you are required to look up the 2003 major on the School of Mathematics, Physics and Information Technology website to select your subjects. If some subjects have been discontinued and you have any problems please contact the School of Mathematics, Physics and Information Technology.

For this rapidly changing field, prior to enrolment students are advised to verify subject and course specifications from the school web site, www.it.jcu.edu.au. The study programs shown are typical for the major chosen, but may be varied due to program development and/or with the approval of the Head of School of Mathematics, Physics and Information Technology.

Note that the testamur for a Bachelor of Information Technology does not show the major studied.

Business Computing**Townsville, Cairns****LEVEL 1****TEACHING PERIOD 1**

CP1200:03	Introduction to Computer Science 1
CP1500:03	Introduction to Database Principles

MA1000:03	Mathematical Foundations
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or

MA1020:03	Preparatory Mathematics
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Plus

3 credit points of subjects selected from:
BU, BX, CO, CP or MG subjects at level 1

TEACHING PERIOD 2

CP1010:03	Introduction to Multimedia
<i>or</i>	
CP1030:03	Introduction to Information Technology

CP1300:03	Introduction to Computer Science 2
CU1010:03	Effective Writing
MA1401:03	Statistics and Data Analysis 1

LEVEL 2**TEACHING PERIOD 1**

CP2001:03	Data Structures and Algorithms
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Plus

9 credit points of subjects selected from:

CP2010:03	Multimedia Web Design (Townsville)
CP2420:03	Graphics and Animation Technologies (Cairns)

or

BU, BX, CO, CP or MG subjects at level 2.

TEACHING PERIOD 2

CP2004:03	Object Oriented Programming with Java
CP2402:03	Operating Systems and Architectures

Plus

6 credit points of subjects selected from:

CP2060:03	Computer Graphics Principles
CP2241:03	Advanced Internetworking
CP2503:03	Enterprise Database Systems - Oracle

or

BU, BX, CO, CP or MG subjects at level 2

LEVEL 3**TEACHING PERIOD 1**

CP3046:03	Information Technology Project 1
CP3120:03	Object Oriented Software Engineering

Plus

6 credit points of subjects selected from:

CP3003:03	Internet Technology
CP3020:03	Advanced Database Management

or

BU, BX, CO, CP or MG subjects at levels 2 and 3

TEACHING PERIOD 2

CP3047:03	Information Technology Project 2
CP3110:03	Fundamentals of Software Engineering

Plus

6 credit points of subjects selected from:

CP3070:03	Principles of Data Communications
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or

BU, BX, CO, CP or MG subjects at levels 2 and 3

LEVEL 4 (HONOURS)**TEACHING PERIOD 1**

CP4100:06	Honours Project (Part 1 of 2)
CP5080:03	Literature Review and Research Proposal
CP5090:03	Scientific Research Methods

TEACHING PERIOD 2

CP4101:06	Honours Project (Part 2 of 2)
CP5110:03	Cryptography
CP5170:03	Topics in Systems and Networks

LEVEL 4 (PART-TIMEHONOURS)

CP4200:03	Honours Project (Part 1 of 4)
CP4201:03	Honours Project (Part 2 of 4)
CP4202:03	Honours Project (Part 3 of 4)

CP4203:03	Honours Project (Part 4 of 4)
CP5080:03	Literature Review and Research Proposal
CP5090:03	Scientific Research Methods
CP5110:03	Cryptography
CP5170:03	Topics in Systems and Networks

Computer Technology

Townsville, Cairns (first year only)

LEVEL 1

TEACHING PERIOD 1

CP1200:03	Introduction to Computer Science 1
CP1500:03	Introduction to Database Principles

MA1000:03	Mathematical Foundations
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or

MA1020:03	Preparatory Mathematics
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Plus

3 credit points of subjects selected from:

CP1030:03	Introduction to Information Technology
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or

BT, BZ, CC, CH, CP, EA, EV, MA, MB, PH or ZL subjects at level 1

TEACHING PERIOD 2

CP1010:03	Introduction to Multimedia
CP1300:03	Introduction to Computer Science 2
CU1010:03	Effective Writing
MA1401:03	Statistics and Data Analysis 1

LEVEL 2

TEACHING PERIOD 1

CP2001:03	Data Structures and Algorithms
CP2231:03	Internetworking Principles

Plus

6 credit points of subjects selected from:

CC2510:03	Digital Logic and Computing Methods
CP2010:03	Multimedia Web Design (Townsville)

or

BT, BZ, CC, CH, CP, EA, EV, MA, MB, PH or ZL subjects at level 2

TEACHING PERIOD 2

CC2511:03	Embedded Systems Design
CP2004:03	Object Oriented Programming with Java
CP2241:03	Advanced Internetworking
CP2402:03	Operating Systems and Architectures

LEVEL 3

TEACHING PERIOD 1

CP3046:03	Information Technology Project 1
CP3120:03	Object Oriented Software Engineering

Plus

6 credit points of subjects selected from:

CC3501:03	Computer Interfacing and Control
CP3003:03	Internet Technology
CP3250:03	Network Administration 1 (Townsville)

TEACHING PERIOD 2

CP3047:03	Information Technology Project 2
CP3070:03	Principles of Data Communications
CP3110:03	Fundamentals of Software Engineering

Plus

3 credit points of subjects selected from:

CP2060:03	Computer Graphics Principles
CP2503:03	Enterprise Database Systems - Oracle
CP3050:03	Algorithms and Complexity

LEVEL 4 (HONOURS)

TEACHING PERIOD 1

CP4100:06	Honours Project (Part 1 of 2)
CP5080:03	Literature Review and Research Proposal
CP5090:03	Scientific Research Methods

TEACHING PERIOD 2

CP4101:06	Honours Project (Part 2 of 2)
CP5110:03	Cryptography
CP5170:03	Topics in Systems and Networks

LEVEL 4 (PART-TIME HONOURS)

CP4200:03	Honours Project (Part 1 of 4)
CP4201:03	Honours Project (Part 2 of 4)
CP4202:03	Honours Project (Part 3 of 4)

CP4203:03	Honours Project (Part 4 of 4)
CP5080:03	Literature Review and Research Proposal
CP5090:03	Scientific Research Methods
CP5110:03	Cryptography
CP5170:03	Topics in Systems and Networks

E-Business Entrepreneurship

Townsville, Cairns, Brisbane

LEVEL 1

TEACHING PERIOD 1

CP1200:03	Introduction to Computer Science 1
CP1500:03	Introduction to Database Principles

MA1000:03	Mathematical Foundations
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or

MA1020:03	Preparatory Mathematics
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Plus

3 credit points of subjects selected from:

BU, BX, CO, CP or MG subjects at level 1.

TEACHING PERIOD 2

CP1010:03	Introduction to Multimedia
CP1300:03	Introduction to Computer Science 2
MA1401:03	Statistics and Data Analysis 1

Plus

3 credit points of subjects selected from:

BU, BX, CO, CP or MG subjects at level 1

LEVEL 2

TEACHING PERIOD 1

CP2001:03	Data Structures and Algorithms
CP2231:03	Internetworking Principles

Plus

6 credit points of subjects selected from:

CP2010:03	Multimedia Web Design (Townsville)
CP2420:03	Graphics and Animation Technologies (Cairns)

or

BU, BX, CO, CP or MG subjects at level 2

TEACHING PERIOD 2

CP2004:03	Object Oriented Programming with Java
CP2241:03	Advanced Internetworking
CP2402:03	Operating Systems and Architectures

Plus

3 credit points of subjects selected from:

CP2503:03	Enterprise Database Systems - Oracle
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or

BU, BX, CO, CP or MG subjects at level 2

LEVEL 3

TEACHING PERIOD 1

CP3003:03	Internet Technology
CP3020:03	Advanced Database Management
CP3046:03	Information Technology Project 1
CP3120:03	Object Oriented Software Engineering

TEACHING PERIOD 2

CP3047:03	Information Technology Project 2
CP3070:03	Principles of Data Communications
CP3110:03	Fundamentals of Software Engineering

Plus

3 credit points of subjects selected from:

BU, BX, CO, CP or MG subjects at levels 2 and 3

LEVEL 4 (PART-TIME HONOURS)

CP4200:03	Honours Project (Part 1 of 4)
CP4201:03	Honours Project (Part 2 of 4)
CP4202:03	Honours Project (Part 3 of 4)
CP4203:03	Honours Project (Part 4 of 4)
CP5080:03	Literature Review and Research Proposal
CP5090:03	Scientific Research Methods
CP5110:03	Cryptography
CP5170:03	Topics in Systems and Networks

LEVEL 4 (HONOURS)

TEACHING PERIOD 1

CP4100:06	Honours Project (Part 1 of 2)
CP5080:03	Literature Review and Research Proposal
CP5090:03	Scientific Research Methods

TEACHING PERIOD 2

CP4101:06	Honours Project (Part 2 of 2)
CP5110:03	Cryptography
CP5170:03	Topics in Systems and Networks

General Computing

Townsville, Cairns, Beijing, Singapore

LEVEL 1**TEACHING PERIOD 1**

CP1200:03	Introduction to Computer Science 1
CP1500:03	Introduction to Database Principles

MA1000:03	Mathematical Foundations
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or

MA1020:03	Preparatory Mathematics
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Plus

3 credit points of subjects selected from:

CP1030:03	Introduction to Information Technology
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or

BT, BU, BX, BZ, CH, CO, CP, EA, EV, MA, MB, PH or ZL subjects at level 1

TEACHING PERIOD 2

CP1010:03	Introduction to Multimedia
CP1300:03	Introduction to Computer Science 2
CU1010:03	Effective Writing
MA1401:03	Statistics and Data Analysis 1

LEVEL 2**TEACHING PERIOD 1**

CP2001:03	Data Structures and Algorithms
CP2231:03	Internetworking Principles

Plus

6 credit points of subjects selected from:

CP2010:03	Multimedia Web Design (Townsville)
CP2420:03	Graphics and Animation Technologies (Cairns)

or

BT, BU, BX, BZ, CH, CO, CP, EA, EV, MA, MB, MG, PH or ZL subjects at level 2

TEACHING PERIOD 2

CP2004:03	Object Oriented Programming with Java
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Plus

9 credit points of subjects selected from:

CP2060:03	Computer Graphics Principles
CP2241:03	Advanced Internetworking
CP2402:03	Operating Systems and Architectures
CP2503:03	Enterprise Database Systems - Oracle

LEVEL 3**TEACHING PERIOD 1**

CP3003:03	Internet Technology
CP3046:03	Information Technology Project 1

Plus

6 credit points of subjects selected from:

CP3020:03	Advanced Database Management
CP3120:03	Object Oriented Software Engineering

or

BT, BU, BX, BZ, CH, CO, CP, EA, EV, MA, MB, MG, PH or ZL subjects

TEACHING PERIOD 2

CP3047:03	Information Technology Project 2
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Plus

9 credit points of subjects selected from:

CP3050:03	Algorithms and Complexity
CP3070:03	Principles of Data Communications
CP3110:03	Fundamentals of Software Engineering

or

BT, BZ, BU, BX, CH, CO, CP, EA, EV, MA, MB, MG, PH or ZL subjects

LEVEL 4 (HONOURS)**TEACHING PERIOD 1**

CP4100:06	Honours Project (Part 1 of 2)
CP5080:03	Literature Review and Research Proposal
CP5090:03	Scientific Research Methods

TEACHING PERIOD 2

CP4101:06	Honours Project (Part 2 of 2)
CP5110:03	Cryptography
CP5170:03	Topics in Systems and Networks

LEVEL 4 (PART-TIME HONOURS)

CP4200:03	Honours Project (Part 1 of 4)
CP4201:03	Honours Project (Part 2 of 4)
CP4202:03	Honours Project (Part 3 of 4)
CP4203:03	Honours Project (Part 4 of 4)
CP5080:03	Literature Review and Research Proposal
CP5090:03	Scientific Research Methods
CP5110:03	Cryptography
CP5170:03	Topics in Systems and Networks

Geographical Information Systems

Townsville, Cairns

LEVEL 1

CP1200:03	Introduction to Computer Science 1
CP1300:03	Introduction to Computer Science 2
CP1500:03	Introduction to Database Principles

EV1001:03	Introduction to Environmental Science
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or

EV1002:03	Society and Environment (Townsville)
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MA1000:03	Mathematical Foundations
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or

MA1020:03	Preparatory Mathematics
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MA1401:03	Statistics and Data Analysis 1
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Plus

6 credit points of subjects selected from:

CP1010:03	Introduction to Multimedia
CP1030:03	Introduction to Information Technology
CU1010:03	Effective Writing

LEVEL 2

CP2001:03	Data Structures and Algorithms
CP2004:03	Object Oriented Programming with Java
CP2402:03	Operating Systems and Architectures
EV2502:03	Introduction to Geographic Information Systems

Plus

12 credit points of subjects selected from:

CP2060:03	Computer Graphics Principles
CP2231:03	Internetworking Principles
CP2241:03	Advanced Internetworking
CP2503:03	Enterprise Database Systems - Oracle
EV2501:03	Introduction to Environmental Remote Sensing (Cairns)

LEVEL 3

CP3046:03	Information Technology Project 1
CP3047:03	Information Technology Project 2
CP3110:03	Fundamentals of Software Engineering
CP3120:03	Object Oriented Software Engineering
EV3502:03	Advanced Geographic Information Systems

Plus

9 credit points of subjects selected from:

CP3003:03	Internet Technology
CP3070:03	Principles of Data Communications
CP3250:03	Network Administration 1 (Townsville)
EV3501:03	Advanced Remote Sensing (not offered in 2009)
EV3503:03	GIS for Environmental Analysis

LEVEL 4 (HONOURS)**TEACHING PERIOD 1**

CP4100:06	Honours Project (Part 1 of 2)
CP5080:03	Literature Review and Research Proposal
CP5090:03	Scientific Research Methods

TEACHING PERIOD 2

CP4101:06	Honours Project (Part 2 of 2)
CP5110:03	Cryptography
CP5170:03	Topics in Systems and Networks

LEVEL 4 (PART-TIME HONOURS)

CP4200:03	Honours Project (Part 1 of 4)
CP4201:03	Honours Project (Part 2 of 4)
CP4202:03	Honours Project (Part 3 of 4)

CP4203:03	Honours Project (Part 4 of 4)
CP5080:03	Literature Review and Research Proposal
CP5090:03	Scientific Research Methods
CP5110:03	Cryptography
CP5170:03	Topics in Systems and Networks

Industry Professional

Townsville, Cairns

LEVEL 1

TEACHING PERIOD 1

CP1200:03	Introduction to Computer Science 1
CP1500:03	Introduction to Database Principles

MA1000:03	Mathematical Foundations
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or

MA1020:03	Preparatory Mathematics
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Plus

3 credit points of subjects selected from:

CP1030:03	Introduction to Information Technology
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or

BT, BU, BX, BZ, CC, CH, CP, EA, EV, MA, MB, PH or ZL subjects at level 1

TEACHING PERIOD 2

CP1010:03	Introduction to Multimedia
CP1300:03	Introduction to Computer Science 2
CU1010:03	Effective Writing
MA1401:03	Statistics and Data Analysis 1

LEVEL 2

TEACHING PERIOD 1

CP2001:03	Data Structures and Algorithms
CP2231:03	Internetworking Principles

Plus

6 credit points of subjects selected from:

CP2010:03	Multimedia Web Design (Townsville)
CP2420:03	Graphics and Animation Technologies (Cairns)
CP3250:03	Network Administration 1 (Townsville)

or

BT, BU, BX, BZ, CC, CH, CP, EA, EV, MA, MB, PH or ZL subjects at level 2

TEACHING PERIOD 2

CP2004:03	Object Oriented Programming with Java
CP2241:03	Advanced Internetworking
CP2402:03	Operating Systems and Architectures

Plus

3 credit points of subjects selected from:

CP2060:03	Computer Graphics Principles
CP2503:03	Enterprise Database Systems - Oracle

LEVEL 3

TEACHING PERIOD 1

CP3003:03	Internet Technology
CP3020:03	Advanced Database Management
CP3046:03	Information Technology Project 1
CP3120:03	Object Oriented Software Engineering

TEACHING PERIOD 2

CP3047:03	Information Technology Project 2
CP3070:03	Principles of Data Communications
CP3110:03	Fundamentals of Software Engineering

Plus

3 credit points of subjects selected from:

CP3050:03	Algorithms and Complexity
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or

BT, BZ, CC, CH, CP, EA, EV, MA, MB, PH or ZL subjects at level 2 or 3

LEVEL 4 (HONOURS)

TEACHING PERIOD 1

CP4100:06	Honours Project (Part 1 of 2)
CP5080:03	Literature Review and Research Proposal
CP5090:03	Scientific Research Methods

TEACHING PERIOD 2

CP4101:06	Honours Project (Part 2 of 2)
CP5110:03	Cryptography
CP5170:03	Topics in Systems and Networks

LEVEL 4 (PART-TIME HONOURS)

CP4200:03	Honours Project (Part 1 of 4)
CP4201:03	Honours Project (Part 2 of 4)
CP4202:03	Honours Project (Part 3 of 4)
CP4203:03	Honours Project (Part 4 of 4)
CP5080:03	Literature Review and Research Proposal
CP5090:03	Scientific Research Methods
CP5110:03	Cryptography
CP5170:03	Topics in Systems and Networks

Multimedia Game Development

Townsville (level 1 only), Cairns

LEVEL 1

TEACHING PERIOD 1

CP1200:03	Introduction to Computer Science 1
CP1500:03	Introduction to Database Principles

MA1000:03	Mathematical Foundations
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or

MA1020:03	Preparatory Mathematics
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Plus

3 credit points of subjects selected from:

CP1030:03	Introduction to Information Technology
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or

BT, BU, BX, BZ, CC, CH, CP, EA, EV, MA, MB, PH or ZL subjects at level 1

TEACHING PERIOD 2

CP1010:03	Introduction to Multimedia
CP1300:03	Introduction to Computer Science 2
CU1010:03	Effective Writing
MA1401:03	Statistics and Data Analysis 1

LEVEL 2

TEACHING PERIOD 1

CP2001:03	Data Structures and Algorithms
CP2420:03	Graphics and Animation Technologies (Cairns)
CP2430:03	Computer Games - Characteristics and Culture (Cairns)

Plus

3 credit points of subjects selected from:

BT, BZ, BU, BX, BZ, CC, CH, CP, EA, EV, MA, MB, PH or ZL subjects at level 2

TEACHING PERIOD 2

CP2004:03	Object Oriented Programming with Java
CP2046:03	Directed Project - Game Principles (Cairns)
CP2060:03	Computer Graphics Principles
CP2402:03	Operating Systems and Architectures

LEVEL 3

TEACHING PERIOD 1

CP2231:03	Internetworking Principles
CP3046:03	Information Technology Project 1
CP3120:03	Object Oriented Software Engineering
CP3410:03	Advanced Game Design (Cairns)

TEACHING PERIOD 2

CP2241:03	Advanced Internetworking
CP3047:03	Information Technology Project 2
CP3110:03	Fundamentals of Software Engineering

Plus

3 credit points of subjects selected from:

CP3050:03	Algorithms and Complexity
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or

BT, BZ, CC, CH, CP, EA, EV, MA, MB, PH or ZL subjects at level 3

LEVEL 4 (HONOURS)

TEACHING PERIOD 1

CP4100:06	Honours Project (Part 1 of 2)
CP5080:03	Literature Review and Research Proposal
CP5090:03	Scientific Research Methods

TEACHING PERIOD 2

CP4101:06	Honours Project (Part 2 of 2)
CP5110:03	Cryptography
CP5170:03	Topics in Systems and Networks

LEVEL 4 (PART-TIME HONOURS)

CP4200:03	Honours Project (Part 1 of 4)
CP4201:03	Honours Project (Part 2 of 4)
CP4202:03	Honours Project (Part 3 of 4)
CP4203:03	Honours Project (Part 4 of 4)
CP5080:03	Literature Review and Research Proposal
CP5090:03	Scientific Research Methods
CP5110:03	Cryptography
CP5170:03	Topics in Systems and Networks

Bachelor of Marine Science and Bachelor of Marine Science with Honours

Townsville, Cairns (first year only)

Majors:

- Tropical Marine Network Program
- The Bachelor of Marine Science is specifically designed for students who wish to pursue a career in marine science. The course provides two pathways; the Bachelor of Marine Science or the Bachelor of Marine Science (Tropical Marine Network Program). They are differentiated by the cross-institutional subject requirements of the Tropical Marine Network Program. Each of the pathways provides students with breadth in the discipline as well as flexibility to follow their own interests. Emphasis is given to scientific breadth in life and physical marine sciences and to generic skills that enable the student to respond to changes in the job market for marine science in Australia.

LEVEL 1

BZ1001:03	Fundamentals of Biology
CH1001:03	Chemistry: A Central Science
or	
CH1011:03	Chemistry for the Natural Sciences

EA1002:03	Environmental Earth Science
or	
EA1110:03	Evolution of the Earth

EV1001:03	Introduction to Environmental Science
or	
EV1002:03	Society and Environment

MA1401:03	Statistics and Data Analysis 1
ZL1001:03	The Diversity of Animal Life

Plus

6 credit points of subjects. The following are recommended:

BT1001:03	Introduction to Plant Science
CH1002:03	Chemistry: Principles and Applications
or	
CH1012:03	Molecular Chemistry

MA1000:03	Mathematical Foundations
MA1003:03	Mathematical Techniques
MB1110:03	Introductory Marine Science
PH1001:03	Preparatory Physics
PH1005:03	Advanced Stream Physics
PH1007:03	Fundamental Physics

LEVEL 2

EV2502:03	Introduction to Geographic Information Systems
PH2006:03	Descriptive Physical Oceanography

Plus

At least 6 credit points selected from:

CH2042:03	Marine Chemistry and Chemical Ecology
EA2110:03	Introduction to Sedimentology
MB2050:03	Functional Biology of Marine Organisms
MB2060:03	Marine Ecology and Environmental Assessment

Plus

12 credit points of subjects. The following are recommended:

AQ2001:03	Introduction to Aquaculture
BS2001:03	Quantitative Methods in Biology
BT2240:03	Marine Plants and Algae in their Environments
CH2002:03	Physical Chemistry
CH2012:03	Environmental Analytical Techniques

CH2022:03	Chemistry of the Elements
CH2032:03	Organic Chemistry
EV2401:03	Australian Landscape Processes and Evolution
EA2404:03	From Icehouse to Greenhouse
MA2000:03	Mathematics for Scientists and Engineers
MA2100:03	Mathematical Methods and Differential Equations
MB2070:03	Evolution and Biogeography of Marine Organisms
MB2080:03	Marine and Terrestrial Invertebrate Biology
PH2019:03	Introduction to Electromagnetism Optics and Thermodynamics

Other science subjects may be taken based on the advice of the marine science coordinator

LEVEL 3

At least 6 credit points each selected from two of three science disciplines (total of 12 credit points):

Earth and Environmental Science

EA3620:03	Palaeoenvironments and Change in Greater Australia
EA3640:03	Advanced Marine Geoscience Technologies and Applications
EV3201:03	Managing Coastal and Marine Environments
EV3203:03	Conserving Marine Wildlife: Sea Mammals, Birds, Reptiles
EV3401:03	Coasts and Catchments: Geomorphology and Management
EV3406:03	Coral Reef Geomorphology
EV3503:03	GIS for Environmental Analysis

Marine Biology

MB3050:03	Biological Oceanography
MB3150:03	Fisheries Science
MB3190:03	Coral Reef Ecology
MB3200:03	Marine Conservation Biology
MB3210:03	Life History and Evolution of Reef Corals
MB3260:03	Ecological Dynamics: An Introduction to Modelling

Mathematical and Physical Sciences

CS3008:03	Fluid Mechanics
MA3109:03	Applied Complex Variable Theory
PH3003:03	Classical Mechanics
PH3006:03	Oceanography and Meteorology

Plus

Other level 3 science subjects may be taken based on the advice of the marine science coordinator

Any AQ, BZ, CH, EA, EV, MA, MB, PH subjects are recommended

LEVEL 4 (Honours)

CH4002:12	Chemistry Honours Part 1 of 2
CH4003:12	Chemistry Honours Part 2 of 2
or	
CH4004:06	Chemistry Honours (Part Time) Part 1 of 4
CH4005:06	Chemistry Honours (Part Time) Part 2 of 4
CH4006:06	Chemistry Honours (Part Time) Part 3 of 4
CH4007:06	Chemistry Honours (Part Time) Part 4 of 4

OR

EA4101:12	Geology Honours (Part 1 of 2)
EA4102:12	Geology Honours (Part 2 of 2)
or	
EA4110:06	Geology Honours (Part-Time) (Part 1 of 4)
EA4120:06	Geology Honours (Part-Time) (Part 2 of 4)
EA4130:06	Geology Honours (Part-Time) (Part 3 of 4)
EA4140:06	Geology Honours (Part-Time) (Part 4 of 4)

OR

EA4301:12	Earth Science Honours (Part 1 of 2)
EA4302:12	Earth Science Honours (Part 2 of 2)
or	
EA4310:06	Earth Science Honours (Part-Time) (Part 1 of 4)
EA4320:06	Earth Science Honours (Part-Time) (Part 2 of 4)
EA4330:06	Earth Science Honours (Part-Time) (Part 3 of 4)
EA4340:06	Earth Science Honours (Part-Time) (Part 4 of 4)

OR

EV4701:12	Environmental Science Honours Part 1 of 2
EV4702:12	Environmental Science Honours Part 2 of 2
or	

EV4710:06	Environmental Science Honours (Part-Time) Part 1 of 4
EV4720:06	Environmental Science Honours (Part-Time) Part 2 of 4
EV4730:06	Environmental Science Honours (Part-Time) Part 3 of 4
EV4740:06	Environmental Science Honours (Part-Time) Part 4 of 4

OR

EV4801:12	Geography Honours Part 1 of 2
EV4802:12	Geography Honours Part 2 of 2

or

EV4810:06	Geography Honours (Part-Time) Part 1 of 4
EV4820:06	Geography Honours (Part-Time) Part 2 of 4
EV4830:06	Geography Honours (Part-Time) Part 3 of 4
EV4840:06	Geography Honours (Part-Time) Part 4 of 4

OR

MA4511:12	Mathematical Sciences Honours Part 1 of 2
MA4512:12	Mathematical Sciences Honours Part 2 of 2

or

MA4515:06	Mathematical Sciences Part-Time Honours Part 1 of 4
MA4516:06	Mathematical Sciences Part-Time Honours Part 2 of 4
MA4517:06	Mathematical Sciences Part-Time Honours Part 3 of 4
MA4518:06	Mathematical Sciences Part-Time Honours Part 4 of 4

OR

MB4001:12	Marine Biology Honours (Part 1 of 2)
MB4002:12	Marine Biology Honours (Part 2 of 2)

OR

PH4511:12	Physical Sciences Honours Part 1 of 2
PH4512:12	Physical Sciences Honours Part 2 of 2

or

PH4515:06	Physical Sciences Part-Time Honours Part 1 of 4
PH4516:06	Physical Sciences Part-Time Honours Part 2 of 4
PH4517:06	Physical Sciences Part-Time Honours Part 3 of 4
PH4518:06	Physical Sciences Part-Time Honours Part 4 of 4

Tropical Marine Network Program

The Tropical Marine Network program is more prescribed and involves inter-institutional teaching with staff from the Universities of Sydney and Queensland. Students can apply for entry at the end of their first year. There will be a quota of 25 students each year.

LEVEL 2

EV2502:03	Introduction to Geographic Information Systems
PH2006:03	Descriptive Physical Oceanography

Plus

At least 6 credit points selected from the following:

CH2042:03	Marine Chemistry and Chemical Ecology
EA2110:03	Introduction to Sedimentology
MB2050:03	Functional Biology of Marine Organisms
MB2060:03	Marine Ecology and Environmental Assessment

Plus

3 credit points selected from the following:

AQ3320:03	Tropical Aquaculture**
EV3100:03	Coastal Management**
MB3300:03	Coral Reef Ecosystems**
MB3310:03	Tropical Fisheries Biology and Management**

** Approval is needed to enrol in these subjects

Plus

9 credit points of subjects. The following are recommended:

AQ2001:03	Introduction to Aquaculture
BS2001:03	Quantitative Methods in Biology
BT2240:03	Marine Plants and Algae in their Environments
CH2002:03	Physical Chemistry
CH2012:03	Environmental Analytical Techniques
CH2022:03	Chemistry of the Elements
CH2032:03	Organic Chemistry
EV2401:03	Australian Landscape Processes and Evolution
EA2404:03	From Icehouse to Greenhouse
MA2000:03	Mathematics for Scientists and Engineers

MA2100:03	Mathematical Methods and Differential Equations
MB2070:03	Evolution and Biogeography of Marine Organisms
MB2080:03	Marine and Terrestrial Invertebrate Biology
PH2019:03	Introduction to Electromagnetism Optics and Thermodynamics

Other science subjects may be taken based on the advice of the marine science coordinator

LEVEL 3

3 credit points selected from the following:

AQ3320:03	Tropical Aquaculture ** +
EV3100:03	Coastal Management **
MB3300:03	Coral Reef Ecosystems **
MB3310:03	Tropical Fisheries Biology and Management **

+ AQ3320 is an antirequisites for all other AQ subjects

** Approval is needed to enrol in these subjects

Plus

9 credit points selected from the following:

MB3050:03	Biological Oceanography
MB3150:03	Fisheries Science
MB3190:03	Coral Reef Ecology
MB3200:03	Marine Conservation Biology
MB3260:03	Ecological Dynamics: An Introduction to Modelling

Plus

9 credit points selected from the following:

EA3620:03	Palaeoenvironments and Change in Greater Australia (not offered in 2009)
EA3640:03	Advanced Marine Geoscience Technologies and Applications
EV3201:03	Managing Coastal and Marine Environments
EV3203:03	Conserving Marine Wildlife: Sea Mammals, Birds, Reptiles
EV3401:03	Coasts and Catchments: Geomorphology and Management
EV3406:03	Coral Reef Geomorphology
EV3503:03	GIS for Environmental Analysis

Plus

3 credit points of subjects. Any AQ, BZ, CH, EA, EV, MA, MB, PH subjects are recommended.

Other level 3 science subjects may be taken based on the advice of the marine science coordinator

LEVEL 4 (HONOURS)

See Level 4 Honours above

Bachelor of Planning and Bachelor of Planning with Honours

Townsville, Cairns

LEVEL 1

CORE SUBJECTS

EA1002:03	Environmental Earth Science
EV1001:03	Introduction to Environmental Science
EV1002:03	Society and Environment
MA2401:03	Statistics and Data Analysis for Environmental Science
or	
SY2005:03	Qualitative Research
or	
SY2012:03	Social Survey Design and Analysis

Plus

12 credit points selected from the following:

AN1001:03	Anthropology: Cultural Diversity in Global Perspective
AR1001:03	The World of Archaeology
BT1001:03	Introduction to Plant Science
CP1010:03	Introduction to Multimedia
CP1030:03	Introduction to Information Technology
CP1500:03	Introduction to Database Principles
CU1010:03	Effective Writing
HI1302:03	World History Since 1900
LA1101:03	Legal Institutions and Processes
LA1103:03	Law, Society and Change
LA1104:03	Legal Concepts

MA1000:03 Mathematical Foundations
 MA1020:03 Preparatory Mathematics
 SY1001:03 Australian Society: An Introduction to Sociology
 or
 Elective level 1 subjects approved by the Program Coordinator to take the total credit points completed to 24 in accordance with the Award Requirements for the Bachelor of Planning

LEVEL 2**CORE SUBJECTS**

EV2003:03 Introduction to Environmental Economics
 EV2301:03 Urban Geography and Design
 EV2360:03 Cradle to Grave: Population Economy and Environment
 EV2502:03 Introduction to Geographic Information Systems
 LA2902:03 Environmental Law and Policy

Plus

Science level 2 subjects to take the total credit points completed to 24 in accordance with the Award Requirements for the Bachelor of Planning

LEVEL 3**CORE SUBJECTS**

EV3001:03 Environmental and Regional Planning
 EV3002:03 Environmental Impact Assessment
 EV3252:03 Indigenous Environmental Management
 EV3601:03 Social Impact Assessment: Environmental Management #

EV3454:03 Natural Hazards

or

EV3606:03 Disasters: Vulnerability, Mitigation and Planning

EV5603:03 Planning Legislation and Professional Practice #
 # EV3601 and EV5603 are block mode subjects and Cairns students must travel to Townsville

Plus

Science level 3 subjects to take the credit points completed to 24 in accordance with the Award Requirements for the Bachelor of Planning

LEVEL 4 - PASS DEGREE**CORE SUBJECTS**

EV5008:03 Professional Vacation Placement
 EV5605:03 Professional Planning Work Experience
 EV5910:03 Minor Project (Part 1 of 2)
 EV5920:03 Minor Project (Part 2 of 2)

Plus

12 credit points of level 3 or level 5 EV subjects satisfying the Award Requirements for the Bachelor of Planning

LEVEL 4 - HONOURS DEGREE**CORE SUBJECTS**

EV5007:03 Introduction to Research
 EV5605:03 Professional Planning Work Experience
 and
 EV4901:06 Planning Honours Part 1 of 2
 EV4902:12 Planning Honours Part 2 of 2
 or
 EV4910:03 Honours in Planning (Part-Time) Part 1 of 4
 EV4920:03 Honours in Planning (Part-Time) Part 2 of 4
 EV4930:06 Honours in Planning (Part-Time) Part 3 of 4
 EV4940:06 Honours in Planning (Part-Time) Part 4 of 4

Note: EV5603 is a compulsory subject and is offered in block mode in Townsville in early December. Intending Honours students must complete EV5603 at the end of level 3

EV5605 is a compulsory subject and may be completed at a place of choice between years 3 and 4

Note: Fourth years honours or subjects may be completed at either campus

Cairns**LEVEL 1****CORE SUBJECTS**

EA1002:03 Environmental Earth Science
 EV1001:03 Introduction to Environmental Science
 EV1002:03 Society and Environment

MA2401:03 Statistics and Data Analysis for Environmental Science
 or
 SS2020:03 Social Survey Design and Analysis
 or
 SS2023:03 Qualitative Research

Plus

Level 1 subjects to take the total credit points completed to 24 in accordance with the Award Requirements for the Bachelor of Planning

LEVEL 2**CORE SUBJECTS**

EV2003:03 Introduction to Environmental Economics
 EV2301:03 Urban Geography and Design
 EV2360:03 Cradle to Grave: Population Economy and Environment
 EV2502:03 Introduction to Geographic Information Systems
 LA2902:03 Environmental Law and Policy

Plus

Level 2 subjects to take the total credit points completed to 24 in accordance with the Award Requirements for the Bachelor of Planning

LEVEL 3**CORE SUBJECTS**

EV3001:03 Environmental and Regional Planning
 EV3002:03 Environmental Impact Assessment
 EV3252:03 Indigenous Environmental Management
 EV3454:03 Natural Hazards
 EV5603:03 Planning Legislation and Professional Practice

Plus

Subjects to take the total credit points completed to 24 in accordance with the Award Requirements for the Bachelor of Planning

LEVEL 4**CORE SUBJECTS - PASS DEGREE**

EV5008:03 Professional Vacation Placement
 EV5605:03 Professional Planning Work Experience
 EV5910:03 Minor Project Part 1
 EV5920:03 Minor Project Part 2

Plus

12 credit points of EV subjects satisfying the Award Requirements for the Bachelor of Planning

or

CORE SUBJECTS - HONOURS DEGREE

EV5007:03 Introduction to Research
 EV5605:03 Professional Planning Work Experience
 and
 EV4901:06 Planning Honours Part 1 of 2
 EV4902:12 Planning Honours Part 2 of 2
 or
 EV4910:03 Honours in Planning (Part-Time) Part 1 of 4
 EV4920:03 Honours in Planning (Part-Time) Part 2 of 4
 EV4930:06 Honours in Planning (Part-Time) Part 3 of 4
 EV4940:06 Honours in Planning (Part-Time) Part 4 of 4

Note: EV5603 is a compulsory subject and is offered in block mode in Townsville in early December. Intending Honours students must complete EV5603 at the end of level 3

EV5605 is a compulsory subject and may be completed at a place of choice between years 3 and 4

Note: Fourth years honours or subjects may be completed at either campus

Bachelor of Psychology-Bachelor of Science and Bachelor of Psychology-Bachelor of Science with Honours in both or either disciplines

Townsville, Cairns

Course details are shown in the Faculty of Arts, Education and Social Sciences section of this handbook.

Bachelor of Science and Bachelor of Science with Honours

Townsville, Cairns

Majors:

- Aquaculture
- Archaeology
- Biochemistry/Molecular Biology
- Botany
- Chemistry
- Computer Science
- Ecology
- Environmental Earth Science
- Environmental Science
- Genetics and Genomics
- Geography
- Geology/Economic Geology
- Hydrology and Water Resources
- Marine Biology
- Marine Biology - Advanced
- Mathematical Sciences (Honours students only)
- Mathematics
- Metalliferous Economic Geology (Honours students only)
- Microbiology
- Pharmacology
- Physical Sciences (Honours students only)
- Physics
- Physiology
- Psychology
- Spatial Science
- Statistical Sciences (Honours students only)
- Statistics (Honours students only)
- Zoology

Students may undertake majors as follows:

- Single major – consists of an approved sequence of 27 credit points (nine subjects) in a discipline or cognate discipline, which must include 12 credit points from Table Vc (level 3 subjects), with all subjects being passed at a grade of Pass or higher.
- Double major – consists of two sequences of credit points from two different disciplines following the requirements for a single major.
- Interdisciplinary major – consists of an approved sequence of at least 42 credit points (14 subjects) and including a total of 18 credit points (six subjects) of level 3 subjects from at least two different disciplines, with all subjects being passed at a grade of Pass or higher.

The core subjects for each major are listed below.

Note: Substitution of subjects for core subjects to allow students to graduate with an approved major will be considered by the Pro-Vice-Chancellor on a case by case basis.

SINGLE MAJORS

Aquaculture

Townsville, Cairns (first and second year only, see below)

LEVEL 1

BZ1001:03 Fundamentals of Biology
ZL1001:03 The Diversity of Animal Life

Plus 18 credit points satisfying the Award Requirements for the Bachelor of Science

LEVEL 2

AQ2001:03 Introduction to Aquaculture
AQ2002:03 Aquaculture of Tropical Species
BS2001:03 Quantitative Methods in Biology

Plus

15 credit points satisfying the Award Requirements for the Bachelor of Science. The following are recommended:

BC2013:03 Principles of Biochemistry
BT2240:03 Marine Plants and Algae in their Environments
BZ2420:03 Genetics for Biology
MB2050:03 Functional Biology of Marine Organisms
MB2080:03 Marine and Terrestrial Invertebrate Biology
MI2031:03 Marine Microbiology

LEVEL 3

12 credit points from the following:

TEACHING PERIOD 1

AQ3002:03 Aquaculture: Feeds and Nutrition
AQ3003:03 Aquaculture: Propagation
or
AQ3008:03 Aquaculture: Systems Design

TEACHING PERIOD 2

AQ3005:03 Aquaculture: Management of Culture Systems
AQ3007:03 Aquatic Animal Ecophysiology
or
AQ3004:03 Aquaculture: Genetics and Stock Improvement

Plus

12 credit points satisfying the Award Requirements for the Bachelor of Science. The following are suggested:

Third year aquaculture subjects not completed as core subjects.

MB3150:03 Fisheries Science
MI3031:03 Aquatic Microbial Pathobiology

LEVEL 4 (Honours students only)

AQ4101:12 Aquaculture Honours (Part 1 of 2)
AQ4102:12 Aquaculture Honours (Part 2 of 2)

Note: There are other subjects available for students who wish to complete honours part-time. Students should contact the school for subject information.

Cairns (first and second year only)

LEVEL 1

BZ1001:03 Fundamentals of Biology
ZL1001:03 The Diversity of Animal Life

Plus

18 credit points from science level 1 subjects satisfying the Award Requirements for the Bachelor of Science

LEVEL 2

AQ2001:03 Introduction to Aquaculture
AQ2002:03 Aquaculture of Tropical Species
BS2001:03 Quantitative Methods in Biology

Plus

15 credit points satisfying the Award Requirements for the Bachelor of Science. The following are recommended:

BZ2440:03 Ecology and Conservation
BZ2470:03 Ecological and Evolutionary Physiology of Plants
EA2800:03 Marine Sedimentary Environments
MB2090:03 Tropical Marine Ecosystems
ZL2008:03 Animal Adaptation to Environmental Change

Archaeology

Townsville, Cairns

Note: Not all level 2, level 3 or level 4 subjects are available on campus at Cairns.

LEVEL 1

AR1001:03 The World of Archaeology
and
AN1001:03 Anthropology: Cultural Diversity in Global Perspective
or
SS1010:03 Australian People: Indigenous and Anthropological Perspectives

Plus

18 credit points satisfying the Award Requirements for the Bachelor of Science. One or more level 1 subjects in anthropology, geography, earth sciences or photography is strongly recommended.

LEVEL 2

Select 9 credit points from the following subjects:

AR2011:03 Australia Through Time and Place
AR2304:03 Archaeology of Celtic Europe
AR2402:03 Maritime Archaeology Field School
AR2405:03 Rock Art Field School
AR2406:03 Hominoid Evolution
AR2407:03 Forensic Archaeology
AR2410:03 Introduction to the Classical World
AR2501:03 Ancestors and Emperors: The Rise and Fall of Ancient Societies

Plus

15 credit points satisfying the Award Requirements for the Bachelor of Science

LEVEL 3

AR3008:03 Peoples of the Coast and Sea

Plus

a minimum of 9 credit points from the following:

AR3011:03 Australia Through Time and Place
 AR3304:03 Archaeology of Celtic Europe
 AR3402:03 Maritime Archaeology Field School
 AR3405:03 Rock Art Field School
 AR3406:03 Hominoid Evolution
 AR3407:03 Forensic Archaeology
 AR3410:03 Introduction to the Classical World
 AR3501:03 Ancestors and Emperors: The Rise and Fall of Ancient Societies

Plus

12 credit points satisfying the Award Requirements for the Bachelor of Science

LEVEL 4 (Honours students only)

AR4006:06 Archaeology Honours Seminar A
 AR4007:06 Archaeology Honours Seminar B
 AR4102:06 Archaeology Honours Thesis Part 1 of 2
 AR4103:06 Archaeology Honours Thesis Part 2 of 2

Biochemistry/Molecular Biology

Townsville, Cairns (first year only)

LEVEL 1 - Townsville

CH1001:03 Chemistry: A Central Science
 CH1002:03 Chemistry: Principles and Applications

Plus

18 credit points satisfying the Award Requirements for the Bachelor of Science. The following are recommended:

BM1000:03 Introductory Biochemistry and Microbiology
 BZ1001:03 Fundamentals of Biology

LEVEL 1 - Cairns

CH1011:03 Chemistry for the Natural Sciences
 CH1012:03 Molecular Chemistry

Plus

18 credit points satisfying the Award Requirements for the Bachelor of Science. The following subject is recommended:

BZ1001:03 Fundamentals of Biology

LEVEL 2

BC2013:03 Principles of Biochemistry
 BC2023:03 Molecular Genetics
 BC2024:03 Cell Regulation

Plus

15 credit points satisfying the Award Requirements for the Bachelor of Science. It is recommended that students choose a set of electives which provides them with the prerequisites for subjects in a range of disciplines in level 2 and 3.

LEVEL 3

BC3101:03 Genes, Genomes and Development
 BC3102:03 Advanced Cell Biology
 BC3201:03 Biotechnology
 BC3202:03 Special Topics in Biochemistry and Molecular Biology

Plus

12 credit points satisfying the Award Requirements for the Bachelor of Science from the following recommended list:

CH3013:03 Instrumental Analytical Techniques
 CH3032:03 Organic Chemistry
 MI3021:03 Clinical Microbiology
 MI3051:03 Mechanisms of Infectious Diseases
 MI3061:03 Advanced Immunobiology
 PP3101:03 Advanced Physiology
 PP3201:03 Applied Physiology
 PP3150:03 Chemical Pharmacology

LEVEL 4 (Honours students only)

BC4002:12 Biochemistry and Molecular Biology Honours Part 1 of 2
 BC4003:12 Biochemistry and Molecular Biology Honours Part 2 of 2

Botany

Townsville, Cairns

LEVEL 1

BT1001:03 Introduction to Plant Science
 BZ1001:03 Fundamentals of Biology

Plus

18 credit points of options. The following are recommended:

AG1001:03 Agriculture and Agroecosystems
 BM1000:03 Introductory Biochemistry and Microbiology
 CH1001:03 Chemistry: A Central Science
 CH1011:03 Chemistry for the Natural Sciences
 CH1012:03 Molecular Chemistry
 EA1110:03 Evolution of the Earth
 MA1401:03 Statistics and Data Analysis 1
 ZL1001:03 The Diversity of Animal Life
 Any level 1 CH, CP, CU, EA, EV, MA or MB subjects

LEVEL 2

BS2001:03 Quantitative Methods in Biology
 BT2400:03 Flowering Plant Diversity
 BZ2440:03 Ecology and Conservation

Plus

15 credit points of options. The following are recommended:

BT2240:03 Marine Plants and Algae in their Environments (Townsville)
 BZ2420:03 Genetics for Biology
 BZ2470:03 Ecological and Evolutionary Physiology of Plants
 EA2007:03 Applied Soil Science
 Any level 2 BC, BT, EV, MB or ZL subjects

LEVEL 3

Select 3 credit points (one subject) from:

BT3010:03 Biology of Plant Survival (Townsville)
 BT3400:03 Tropical Flora of Australia

Plus

9 credit points (three subjects) from:

BZ3000:03 Projects in Biology
 BZ3210:03 Rainforest Ecosystems (Townsville)
 BZ3212:03 Tropical Wetlands Ecology and Management
 BZ3400:03 Population and Community Ecology (Cairns)
 BZ3420:03 Tropical Ecosystems and Climate Change (Cairns)
 BZ3450:03 Ecological and Conservation Genetics

Plus

12 credit points of options. The following are recommended:

Any subjects not already selected from the above list
 Any level 3 BC, BS, BZ, EV, MB or ZL subjects

LEVEL 4 (Honours students only)

BT4001:12 Botany Honours (Part 1 of 2)
 BT4002:12 Botany Honours (Part 2 of 2)

Chemistry

Townsville, Cairns (first year only)

LEVEL 1

CH1001:03 Chemistry: A Central Science
 or
 CH1011:03 Chemistry for the Natural Sciences
 and
 CH1002:03 Chemistry: Principles and Applications

or

CH1012:03 Molecular Chemistry

Plus

18 credit points satisfying the Award Requirements for the Bachelor of Science. It is recommended that students choose a set of electives that provide them with the prerequisites for subjects in a range of disciplines in level 2 and 3. Students with an interest in Industrial Chemistry should include appropriate Mathematics (MA) and Computer Science (CP) subjects.

LEVEL 2

At least 3 subjects (9 credit points) from:

CH2002:03 Physical Chemistry
 CH2012:03 Environmental Analytical Techniques
 CH2022:03 Chemistry of the Elements
 CH2032:03 Organic Chemistry

Plus

15 credit points satisfying the Award Requirements of the Bachelor of Science. It is recommended that students include additional level 2 Chemistry (CH) subjects or subjects in Biochemistry (BC), Earth Science (EA), Mathematics (MA), Physics (PH), Biological Sciences (BT, BZ, MB,ZL), Physiology and Pharmacology (PP), and Microbiology and Immunology (MI).

Students with an interest in Industrial Chemistry should include appropriate Chemical Engineering (CL) and Mechanical Engineering (ME) subjects.

LEVEL 3

Any four level 3 CH subjects (12 credit points) selected from:

CH3004:03	Physical Chemistry
CH3013:03	Instrumental Analytical Techniques
CH3022:03	Inorganic Chemistry
CH3032:03	Organic Chemistry
CH3093:03	Advanced Chemistry Project A
CH3095:03	Advanced Chemistry Project B Part1 of 2
CH3096:03	Advanced Chemistry Project B Part2 of 2

Plus

12 credit points satisfying the Award Requirements for the Bachelor of Science. It is recommended that students include additional level 3 Science subjects.

Students with an interest in Industrial Chemistry should include appropriate Chemical Engineering (CL) and Mechanical Engineering (ME) subjects.

LEVEL 4 (Honours students only)

CH4002:12	Chemistry Honours Part 1 of 2
CH4003:12	Chemistry Honours Part 2 of 2

or

CH4502:12	Industrial Chemistry Honours Part 1 of 2
CH4503:12	Industrial Chemistry Honours Part 2 of 2

or

CH4004:06	Chemistry Honours (Part Time) Part 1 of 4
CH4005:06	Chemistry Honours (Part Time) Part 2 of 4
CH4006:06	Chemistry Honours (Part Time) Part 3 of 4
CH4007:06	Chemistry Honours (Part Time) Part 4 of 4

Computer Science

Townsville, Cairns

LEVEL 1**TEACHING PERIOD 1**

CP1200:03	Introduction to Computer Science 1
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Plus

9 credit points. Recommended subjects:

CP1030:03	Introduction to Information Technology
CP1500:03	Introduction to Database Principles
MA1000:03	Mathematical Foundations
MA1020:03	Preparatory Mathematics

or

BM, BT, BZ, CH, EA, EV, MB, PH or ZL subjects at level 1 to satisfy the Award Requirements for the Bachelor of Science

TEACHING PERIOD 2

CP1300:03	Introduction to Computer Science 2
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Plus

9 credit points. Recommended subjects:

CP1010:03	Introduction to Multimedia
CU1010:03	Effective Writing
MA1401:03	Statistics and Data Analysis 1

or

BM, BT, BZ, CH, EA, EV, MB, PH or ZL subjects at level 1 to satisfy the Award Requirements for the Bachelor of Science

LEVEL 2**TEACHING PERIOD 1**

CP2001:03	Data Structures and Algorithms
CP2231:03	Internetworking Principles

Plus

6 credit points. Recommended subjects:

CP2010:03	Multimedia Web Design (Townsville)
CP2377:03	Portable Programming (not offered in 2009)
CP2420:03	Graphics and Animation Technologies (Cairns)
CP2430:03	Computer Games - Characteristics and Culture (Cairns)

or

BT, BZ, EA, EV, MB, PH or ZL subjects at level 2

TEACHING PERIOD 2

CP2004:03	Object Oriented Programming with Java
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Plus

9 credit points. Recommended subjects:

CP2046:03	Directed Project - Game Principles (Cairns)
CP2060:03	Computer Graphics Principles
CP2402:03	Operating Systems and Architectures
CP2503:03	Enterprise Database Systems - Oracle

or

BT, BZ, EA, EV, MA, MB, PH or ZL subjects at level 2

LEVEL 3**TEACHING PERIOD 1**

CP3046:03	Information Technology Project 1
CP3120:03	Object Oriented Software Engineering

Plus

6 credit points. Recommended subjects:

CP3003:03	Internet Technology
CP3020:03	Advanced Database Management
CP3410:03	Advanced Game Design (Cairns)

or

BT, BZ, EA, EV, MA, MB, PH or ZL subjects at level 3

TEACHING PERIOD 2

CP3047:03	Information Technology Project 2
CP3110:03	Fundamentals of Software Engineering

Plus

6 credit points. Recommended subjects:

CP3050:03	Algorithms and Complexity
CP3070:03	Principles of Data Communications

or

BT, BZ, EA, EV, MA, MB, PH or ZL subjects at level 3

LEVEL 4 (Honours students only)

CP4100:06	Honours Project (Part 1 of 2)
CP4101:06	Honours Project (Part 2 of 2)
CP5080:03	Literature Review and Research Proposal
CP5090:03	Scientific Research Methods
CP5110:03	Cryptography
CP5170:03	Topics in Systems and Networks

LEVEL 4 Part-time Honours

CP4200:03	Honours Project (Part 1 of 4)
CP4201:03	Honours Project (Part 2 of 4)
CP4202:03	Honours Project (Part 3 of 4)
CP4203:03	Honours Project (Part 4 of 4)
CP5080:03	Literature Review and Research Proposal
CP5090:03	Scientific Research Methods
CP5110:03	Cryptography
CP5170:03	Topics in Systems and Networks

Environmental Earth Science

Townsville, Cairns (see below)

LEVEL 1

EA1002:03	Environmental Earth Science
EV1001:03	Introduction to Environmental Science

Plus

3 credit points (one subject) from each of the following groups:

Group 1: All level 1 MA and PH subjects except PH1001

Group 2: All level 1 CH and CP subjects together with BM1000, but excluding CH1020 and CP1030

Group 3: All level 1 BT, BZ, MB and ZL subjects

Plus

Level 1 electives to bring the total credit points completed to 24

LEVEL 2

Select one of the groups and complete the three subjects:

Group 1

EA2110:03	Introduction to Sedimentology
EV2401:03	Australian Landscapes Processes and Evolution
EA2404:03	From Icehouse to Greenhouse

Group 2

EA2006:03	Hydrology
EA2007:03	Applied Soil Science
EA2404:03	From Icehouse to Greenhouse

Plus

Level 2 options to bring the total number of credit points completed to 24. The following are recommended:

EA2120:03	Palaeontology and Stratigraphy
EA2510:03	Earth Resources, Exploration and Environment
EA2900:03	Introductory Field Geology
EV2502:03	Introduction to Geographic Information Systems

LEVEL 3

Select one of the groups and complete three subjects:

Group 1

EA3620:03	Palaeoenvironments and Change in Greater Australia (not offered in 2009)
EA3640:03	Advanced Marine Geoscience Technologies and Applications
EV3401:03	Coasts and Catchments: Geomorphology and Management
EV3406:03	Coral Reef Geomorphology

Group 2

EA3005:03	Minesite Rehabilitation
EA3006:03	Land Degradation Field Studies
EA3008:03	Advanced Hydrology
EA3800:03	Earth and Environmental Geochemistry
EV3002:03	Environmental Impact Assessment

Plus

Level 3 options to bring the total number of credit points completed to 24. The following is recommended:

EV3502:03	Advanced Geographic Information Systems
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LEVEL 4 (Honours students only)

EA4301:12	Earth Science Honours (Part 1 of 2)
EA4302:12	Earth Science Honours (Part 2 of 2)

Note: There are alternative subjects available for students who wish to complete honours part-time. Students should contact the school for subject information.

Cairns**LEVEL 1**

EA1002:03	Environmental Earth Science
EV1001:03	Introduction to Environmental Science

Plus

3 credit points (one subject) from each of the following groups:

Group 1: All level 1 MA and PH subjects except PH1001

Group 2: All level 1 CH and CP subjects together with BM1000, but excluding CH1020 and CP1030

Group 3: All level 1 BT, BZ, MB and ZL subjects

Plus

Electives to bring the total credit points completed to 24.

LEVEL 2

Complete the following subjects:

EA2006:03	Hydrology
EA2007:03	Applied Soil Science
EA2404:03	From Icehouse to Greenhouse

Plus

15 credit points satisfying the Award Requirements for the Bachelor of Science. The following are recommended:

EA2510:03	Earth Resources, Exploration and Environment
EA2900:03	Introductory Field Geology
EV2501:03	Introduction to Environmental Remote Sensing
EV2502:03	Introduction to Geographic Information Systems

LEVEL 3

Complete 12 credit points (four subjects) from the following subjects:

EA3006:03	Land Degradation Field Studies
EA3007:03	Field Studies in Tropical Water and Soil Science
EA3008:03	Advanced Hydrology
EA3800:03	Earth and Environmental Geochemistry
EV3002:03	Environmental Impact Assessment

Plus

12 credit points satisfying the Award Requirements for the Bachelor of Science. The following are recommended:

EV3501:03	Advanced Remote Sensing
EV3502:03	Advanced Geographic Information Systems

LEVEL 4 (Honours students only)

EA4301:12	Earth Science Honours (Part 1 of 2)
EA4302:12	Earth Science Honours (Part 2 of 2)

Note: There are alternative subjects available for students who wish to complete honours part-time. Students should contact the school for subject information.

Environmental Science

Townsville, Cairns (see below)

LEVEL 1

EV1001:03	Introduction to Environmental Science
One subject selected from:	
EV1002:03	Society and Environment
EV1004:03	Understanding Environmental Issues (not offered in 2009)

Plus

Subjects to take the total credit points completed to 24 credit points of subjects to satisfy the Award Requirements for the Bachelor of Science

LEVEL 2

LA2902:03	Environmental Law and Policy
EV2003:03	Introduction to Environmental Economics

Plus

One subject selected from:

BS2001:03	Quantitative Methods in Biology
<i>or</i>	
MA2401:03	Statistics and Data Analysis for Environmental Science

Plus

Level 2 subjects to take the total credit points completed to 24 credit points to satisfy the Award Requirements for the Bachelor of Science

LEVEL 3

EV3001:03	Environmental and Regional Planning
EV3002:03	Environmental Impact Assessment
EV3601:03	Social Impact Assessment: Environmental Management

Plus

One subject selected from:

EV3200:03	Terrestrial Resource Management
EV3201:03	Managing Coastal and Marine Environments

Plus

Subjects to take the total credit points completed to 24 credit points to satisfy the Award Requirements for the Bachelor of Science

LEVEL 4 (Honours students only)

EV4701:12	Environmental Science Honours Part 1 of 2
EV4702:12	Environmental Science Honours Part 2 of 2
<i>or</i>	
EV4710:06	Environmental Science Honours (Part-Time) Part 1 of 4
EV4720:06	Environmental Science Honours (Part-Time) Part 2 of 4
EV4730:06	Environmental Science Honours (Part-Time) Part 3 of 4
EV4740:06	Environmental Science Honours (Part-Time) Part 4 of 4

Cairns**LEVEL 1**

EV1001:03	Introduction to Environmental Science
EV1002:03	Society and Environment

Plus

Subjects to take the total credit points completed to 24 credit points to satisfy the Award Requirements for the Bachelor of Science

LEVEL 2

EV2003:03	Introduction to Environmental Economics
LA2902:03	Environmental Law and Policy

Plus

One subject selected from:

BS2001:03	Quantitative Methods in Biology
<i>or</i>	
MA2401:03	Statistics and Data Analysis for Environmental Science

Plus

Level 2 subjects to take the total credit points completed to 24 credit points to satisfy the Award Requirements for the Bachelor of Science

LEVEL 3

EV3001:03	Environmental and Regional Planning
EV3002:03	Environmental Impact Assessment
EV3601:03	Social Impact Assessment: Environmental Management

Plus

One subject selected from:

EV3205:03	Conserving Tropical Rainforests
EV3252:03	Indigenous Environmental Management
EV3454:03	Natural Hazards
EV3456:03	Catchment Assessment and Management

Plus

Subjects to take the total credit points completed to 24 credit points to satisfy the Award Requirements for the Bachelor of Science

LEVEL 4 (Honours students only)

EV4701:12 Environmental Science Honours Part 1 of 2
 EV4702:12 Environmental Science Honours Part 2 of 2

or

EV4710:06 Environmental Science Honours (Part-Time) Part 1 of 4
 EV4720:06 Environmental Science Honours (Part-Time) Part 2 of 4
 EV4730:06 Environmental Science Honours (Part-Time) Part 3 of 4
 EV4740:06 Environmental Science Honours (Part-Time) Part 4 of 4

Genetics and Genomics**Townsville****LEVEL 1**

BM1000:03 Introductory Biochemistry and Microbiology
 BZ1001:03 Fundamentals of Biology

Plus

18 credit points satisfying the Award Requirements for the Bachelor of Science.

Students will find MA1401:03 and PH1001:03 useful for background knowledge within the Genetics and Genomics major.

Note: CH1001:03 and CH1002:03 are prerequisites for level 2 BC2013:03 and BC2023:03.

LEVEL 2

BC2013:03 Principles of Biochemistry
 BC2023:03 Molecular Genetics
 BZ2420:03 Genetics for Biology

Plus

15 credit points satisfying the Award Requirements for the Bachelor of Science

Note: BC2024:03 is a prerequisite for level 3 subjects BC3102:03 and GG3201:03. BZ2440:03 is a prerequisite for BZ3450:03. BS2001:03 is a prerequisite for AQ3004:03.

LEVEL 3

BZ3450:03 Ecological and Conservation Genetics
 GG3101:03 Advanced Genetics and Genomics

Plus

a minimum of 6 credit points selected from:

AQ3004:03 Aquaculture: Genetics and Stock Improvement
 BC3201:03 Biotechnology
 GG3102:03 Molecular Cell Biology
 GG3202:03 Special Topics in Genetics

Plus

Remaining subjects to satisfying the Award Requirements for the Bachelor of Science

LEVEL 4 (Honours students only)

GG4011:12 Honours in Genetics (Part 1 of 2)
 GG4012:12 Honours in Genetics (Part 2 of 2)

Geography**Townsville, Cairns****LEVEL 1**

EV1001:03 Introduction to Environmental Science
 EV1002:03 Society and Environment

Plus

Science level 1 subjects to take the total credit points completed to 24

LEVEL 2

Select three level 2 EV subjects (9 credit points).

Plus

Science level 2 subjects to take the total credit points completed to 2

LEVEL 3

Select four level 3 EV subjects (12 credit points).

Plus

Subjects to take the total credit points completed to 24 credit points

LEVEL 4 (Honours students only)

EV4801:12 Geography Honours Part 1 of 2
 EV4802:12 Geography Honours Part 2 of 2

or

EV4810:06 Geography Honours (Part-Time) Part 1 of 4
 EV4820:06 Geography Honours (Part-Time) Part 2 of 4
 EV4830:06 Geography Honours (Part-Time) Part 3 of 4
 EV4840:06 Geography Honours (Part-Time) Part 4 of 4

Geology/Economic Geology**Townsville, Cairns (first year only)****LEVEL 1**

Select 3 credit points (one subject) satisfying the Award Requirements for the Bachelor of Science from:

EA1002:03 Environmental Earth Science

or

EA1110:03 Evolution of the Earth

Plus

3 credit points of either CH or CP level 1 subjects.

Plus

18 credit points satisfying the Award Requirements for the Bachelor of Science

LEVEL 2

EA2220:03 Earth Materials
 EA2300:03 Crustal Processes
 EA2900:03 Introductory Field Geology

Plus

15 credit points satisfying the Award Requirements for the Bachelor of Science. The following are recommended:

EA2110:03 Introduction to Sedimentology
 EA2120:03 Palaeontology and Stratigraphy
 EA2510:03 Earth Resources, Exploration and Environment

LEVEL 3

EA3510:03 Geological Mapping
 EA3511:03 Advanced Geological Mapping
 and two of:
 EA3100:03 Tectonics and Igneous Geology
 EA3200:03 Metamorphism and Structure
 EA3400:03 Ore Genesis
 EA3610:03 Marine Geology and Palaeobiology
 EA3800:03 Earth and Environmental Geochemistry

Plus

12 credit points satisfying the Award Requirements for the Bachelor of Science

LEVEL 4 (Honours students only)

EA4101:12 Geology Honours (Part 1 of 2)
 EA4102:12 Geology Honours (Part 2 of 2)

or

EA4201:12 Metalliferous Economic Geology Honours (Part 1 of 2)
 EA4202:12 Metalliferous Economic Geology Honours (Part 2 of 2)

Note: There are other subjects available for students who wish to complete honours part-time. Students should contact the school for subject information.

Hydrology and Water Resources**Townsville, Cairns****YEAR 1****CORE SUBJECTS**

EA1002:03 Environmental Earth Science
 EV1001:03 Introduction to Environmental Science

ELECTIVE/ADDITIONAL SUBJECTS

Plus 18 credit points satisfying the Award Requirements for the Bachelor of Science.

YEAR 2**CORE SUBJECTS**

EA2006:03 Hydrology
 EV2502:03 Introduction to Geographic Information Systems

Plus

One subject selected from:

EA2007:03 Applied Soil Science
 EV2003:03 Introduction to Environmental Economics

ELECTIVE/ADDITIONAL SUBJECTS

Plus 15 credit points satisfying the Award Requirements for the Bachelor of Science

YEAR 3**CORE SUBJECTS**

EA3007:03 Field Studies in Tropical Water and Soil Science
 EA3800:03 Earth and Environmental Geochemistry
 EA3008:03 Advanced Hydrology

One subject selected from:

BZ3212:03 Tropical Wetlands Ecology and Management
 EA3006:03 Land Degradation Field Studies

EV3002:03 Environmental Impact Assessment
 EV3401:03 Coasts and Catchments: Geomorphology and Management (Townsville)

or
 EV3456:03 Catchment Assessment and Management (Cairns)

ELECTIVE/ADDITIONAL SUBJECTS

Plus 12 credit points satisfying the Award Requirements for the Bachelor of Science

YEAR 4 (Honours students only)

EA4301:12 Earth Science Honours (Part 1 of 2)
 EA4302:12 Earth Science Honours (Part 2 of 2)

or

EA4310:06 Earth Science Honours (Part-Time) (Part 1 of 4)
 EA4320:06 Earth Science Honours (Part-Time) (Part 2 of 4)
 EA4330:06 Earth Science Honours (Part-Time) (Part 3 of 4)
 EA4340:06 Earth Science Honours (Part-Time) (Part 4 of 4)

Marine Biology

Townsville, Cairns (first year only)

LEVEL 1

BZ1001:03 Fundamentals of Biology
 ZL1001:03 The Diversity of Animal Life

Plus

18 credit points satisfying the Award Requirements for the Bachelor of Science

LEVEL 2

BS2001:03 Quantitative Methods in Biology
 MB2060:03 Marine Ecology and Environmental Assessment

Plus

3 credit points from:

MB2050:03 Functional Biology of Marine Organisms
 MB2070:03 Evolution and Biogeography of Marine Organisms
 MB2080:03 Marine and Terrestrial Invertebrate Biology

Plus

15 credit points satisfying the Award Requirements for the Bachelor of Science

LEVEL 3

Select 12 credit points from:

MB3050:03 Biological Oceanography
 MB3150:03 Fisheries Science
 MB3160:03* Evolution and Ecology of Reef Fishes
 MB3190:03* Coral Reef Ecology
 MB3200:03 Marine Conservation Biology
 MB3210:03* Life History and Evolution of Reef Corals
 MB3230:03 Design and Analyses in Ecological Studies
 MB3260:03 Ecological Dynamics: An Introduction to Modelling
 MB3270:03 Coastal and Estuarine Ecosystems
 MB3280:03 Marine Invertebrates of Commercial Importance

Plus

12 credit points satisfying the Award Requirements for the Bachelor of Science

* Restricted subjects which require approval of Academic Adviser.

LEVEL 4 (Honours students only)

MB4001:12 Marine Biology Honours (Part 1 of 2)
 MB4002:12 Marine Biology Honours (Part 2 of 2)

Marine Biology - Advanced

Townsville, Cairns (first year only)

LEVEL 1

BZ1001:03 Fundamentals of Biology
 CH1001:03 Chemistry: A Central Science
 MA1000:03 Mathematical Foundations
 MA1003:03 Mathematical Techniques
 ZL1001:03 The Diversity of Animal Life

Plus

9 credit points of subjects satisfying the Award Requirements for the Bachelor of Science

LEVEL 2

BS2001:03 Quantitative Methods in Biology
 MB2060:03 Marine Ecology and Environmental Assessment

Plus

3 credit points from:

MB2050:03 Functional Biology of Marine Organisms
 MB2070:03 Evolution and Biogeography of Marine Organisms
 MB2080:03 Marine and Terrestrial Invertebrate Biology

Plus

Subjects to total of 24 credit points, at least 6 of which must be level 2 CH, EA, MA or PH subjects

LEVEL 3

Select 12 credit points from:

MB3059:03 Biological Oceanography (Advanced)
 MB3169:03 * Evolution and Ecology of Reef Fishes (Advanced)
 MB3199:03 * Coral Reef Ecology (Advanced)
 MB3219:03 * Life History and Evolution of Reef Corals (Advanced)
 MB3239:03 Design and Analyses in Ecological Studies (Advanced)
 MB3269:03 Ecological Dynamics: An Introduction to Modelling (Advanced)
 MB3279:03 Coastal and Estuarine Ecosystems (Advanced)

Plus

Subjects to the total of 24 credit points satisfying the Award Requirements for the Bachelor of Science

* Restricted subjects which require approval of Academic Adviser

Mathematics

Townsville, Cairns (first year only)

Notes:

1. The majority of level 2 and level 3 subjects comprising the Mathematics major are offered in alternate years only. This means that in order to complete the major in the minimum three years, students will need to take some level 3 subjects in their second year of study and some level 2 subjects in their third year of study.

2. Students who have an undergraduate major in Mathematics major may undertake honours in **Statistics** (see separate entry for Statistics).

LEVEL 1

MA1000:03 Mathematical Foundations
 MA1003:03 Mathematical Techniques

Plus

18 credit points satisfying the Award Requirements for the Bachelor of Science

Students will find CP1200:03, CP1300:03, MA1721:03, PH1005:03 and PH1007:03 useful for background knowledge within the Maths major
 Students with an interest in Statistics should include MA1401:03

LEVEL 2

MA2000:03 Mathematics for Scientists and Engineers
 MA2100:03 Mathematical Methods and Differential Equations
 MA2201:03 Numerical Mathematics

Plus

15 credit points satisfying the Award Requirements for the Bachelor of Science

Students will find PH2002:03, PH2008:03 and PH2019:03 useful for background knowledge within the Maths major
 Students with an interest in Statistics should include MA2405:03

LEVEL 3

MA3109:03 Applied Complex Variable Theory
 MA3201:03 Numerical Methods
 MA3405:03 Multivariate Statistical Methods
 or
 PH3003:03 Classical Mechanics
 MA3605:03 Operations Research and Modelling

Plus

12 credit points satisfying the Award Requirements for the Bachelor of Science

LEVEL 4 (Honours students only)

MA4011:12 Mathematics Honours Part 1 of 2
 MA4012:12 Mathematics Honours Part 2 of 2

or

MA4015:06 Mathematics Part-Time Honours Part 1 of 4
 MA4016:06 Mathematics Part-Time Honours Part 2 of 4
 MA4017:06 Mathematics Part-Time Honours Part 3 of 4
 MA4018:06 Mathematics Part-Time Honours Part 4 of 4

Mathematical Sciences

Townsville

The honours in Mathematical Sciences program is intended for students whose undergraduate major is not in mathematics, but who have a major in another science (or related) discipline and want to carry out a project where mathematical techniques can be applied to that area.

LEVEL 4 (Honours students only)

MA4511:12 Mathematical Sciences Honours Part 1 of 2
MA4512:12 Mathematical Sciences Honours Part 2 of 2

LEVEL 4 (Honours Part-time students only)

MA4515:06 Mathematical Sciences Part-Time Honours Part 1 of 4
MA4516:06 Mathematical Sciences Part-Time Honours Part 2 of 4
MA4517:06 Mathematical Sciences Part-Time Honours Part 3 of 4
MA4518:06 Mathematical Sciences Part-Time Honours Part 4 of 4

Microbiology

Townsville

LEVEL 1

BM1000:03 Introductory Biochemistry and Microbiology
HS1000:03 Epidemiology

Plus

18 credit points satisfying the Award Requirements for the Bachelor of Science. The following are recommended:

BT1001:03 Introduction to Plant Science
BZ1001:03 Fundamentals of Biology
CH1001:03 Chemistry: A Central Science
CH1002:03 Chemistry: Principles and Applications
ZL1001:03 The Diversity of Animal Life

or any AQ, AT, BT, BZ or PP subjects

Students wishing to specialise in Clinical Microbiology should also select:

AT1210:03 Introductory Human Anatomy and Histology

LEVEL 2

MI2011:03 Microbial Diversity
MI2021:03 Introductory Infectious Diseases and Immunobiology
MI2031:03 Marine Microbiology

Plus

15 credit points satisfying the Award Requirements for the Bachelor of Science. The following are recommended:

BS2001:03 Quantitative Methods in Biology
MB2050:03 Functional Biology of Marine Organisms

Or any AQ, AT, BC, BT, BZ, MB, PP or ZL subjects.

Students wishing to specialise in Clinical Microbiology should also select from:

AT2110:03 Comparative Mammalian Anatomy and Histology
BC2013:03 Principles of Biochemistry
BC2023:03 Molecular Genetics
BC2024:03 Cell Regulation
PP2101:03 Medical Physiology 1
PP2201:03 Medical Physiology 2

LEVEL 3

Select a minimum of four subjects (12 credit points) from:

MI3021:03 Clinical Microbiology
MI3031:03 Aquatic Microbial Pathobiology
MI3041:03 Food Microbiology
MI3051:03 Mechanisms of Infectious Diseases
MI3061:03 Advanced Immunobiology
PP3151:03 General Pathobiology

Plus

Up to 12 credit points of electives to satisfy the Award Requirements for the Bachelor of Science

Students wishing to specialise in Clinical Microbiology should also select from:

BC3101:03 Genes, Genomes and Development
PP3151:03 General Pathobiology

LEVEL 4 (Honours students only)

MI4000:12 Microbiology and Immunology Honours Part 1 of 2
MI4001:12 Microbiology and Immunology Honours Part 2 of 2

Note: There are other subjects available for students who wish to complete honours part-time. Students should contact the School of Veterinary and Biomedical Sciences for subject information.

Pharmacology

Townsville, Cairns (first year only)

LEVEL 1 - Townsville

CH1001:03 Chemistry: A Central Science
CH1002:03 Chemistry: Principles and Applications

Plus

18 credit points satisfying the Award Requirements for the Bachelor of Science. The following are recommended:

AT1210:03 Introductory Human Anatomy and Histology
BM1000:03 Introductory Biochemistry and Microbiology
BT1001:03 Introduction to Plant Science
BZ1001:03 Fundamentals of Biology
CP1030:03 Introduction to Information Technology
HS1000:03 Epidemiology
MA1000:03 Mathematical Foundations
MA1401:03 Statistics and Data Analysis 1
PP1201:03 Introduction to Physiology and Pharmacology
ZL1001:03 The Diversity of Animal Life

LEVEL 1 - Cairns

CH1011:03 Chemistry for the Natural Sciences
CH1012:03 Molecular Chemistry

Plus

18 credit points satisfying the Award Requirements for the Bachelor of Science.

LEVEL 2

BC2024:03 Cell Regulation
PP2101:03 Medical Physiology 1
PP2201:03 Medical Physiology 2

Plus

15 credit points satisfying the Award Requirements for the Bachelor of Science. The following are recommended:

BC2013:03 Principles of Biochemistry
BS2001:03 Quantitative Methods in Biology
CH2032:03 Organic Chemistry (strongly recommended)
Any level 2 Anatomy and Histology (AT), Biochemistry (BC), Biological Sciences (BT, BZ, MB, ZL), Chemistry (CH) or Physiology (PP) subjects

LEVEL 3

PP3150:03 Chemical Pharmacology
PP3251:03 Systemic Pathophysiology and Therapeutics
PP3252:03 Neuropharmacology
Select one subject (3 credit points) from:
CH3100:03 Molecular Basis of Therapeutics 4
PP3151:03 General Pathobiology

Plus

12 credit points satisfying the Award Requirements for the Bachelor of Science

Any Level 3 Biochemistry (BC), Biological Sciences (BT, BZ, MB, ZL), Chemistry (CH) or Physiology (PP) subjects

LEVEL 4 (Honours students only)

PP4051:12 Pharmacology Honours Part 1 of 2
PP4052:12 Pharmacology Honours Part 2 of 2

Note: There are other subjects available for students who wish to complete honours part-time. Students should contact the school for subject information.

Physical Sciences

Townsville

The honours in Physical Sciences program is intended for students whose undergraduate major is not in physics, but who have a major in another science (or related) discipline and want to carry out a project where physical sciences techniques can be applied to that area.

LEVEL 4 (Honours students only)

PH4511:12 Physical Sciences Honours Part 1 of 2
PH4512:12 Physical Sciences Honours Part 2 of 2

LEVEL 4 (Honours Part-time students only)

PH4515:06 Physical Sciences Part-Time Honours Part 1 of 4
PH4516:06 Physical Sciences Part-Time Honours Part 2 of 4
PH4517:06 Physical Sciences Part-Time Honours Part 3 of 4
PH4518:06 Physical Sciences Part-Time Honours Part 4 of 4

Physics

Townsville

Note: The majority of level 2 and level 3 subjects comprising the Physics major are offered in alternate years only. This means that in order to complete the major in the minimum three years, students will need to take some level 3 subjects in their second year of study and some level 2 subjects in their third year of study.

LEVEL 1

PH1005:03	Advanced Stream Physics
PH1007:03	Fundamental Physics

Plus

18 credit points satisfying the Award Requirements for the Bachelor of Science

Students will find CP1200:03 and CP1300:00 useful for background knowledge within the Physics major. MA1000:03 and MA1003:03 are prerequisites for level 2 Physics

LEVEL 2

PH2002:03	Structure of Matter
PH2008:03	Thermal and Statistical Physics
PH2019:03	Introduction to Electromagnetism Optics and Thermodynamics

Plus

15 credit points satisfying the Award Requirements for the Bachelor of Science

MA2000:03, MA2100:03 and MA2201:03 are prerequisites for level 3 Physics

LEVEL 3

Four subjects (12 credit points) selected from:

PH3002:03	Quantum Physics
PH3003:03	Classical Mechanics
PH3006:03	Oceanography and Meteorology
PH3019:03	Electromagnetic Phenomena
PH3025:03	Human Biomechanics 2

Plus

12 credit points satisfying the Award Requirements for the Bachelor of Science

LEVEL 4 (Honours students only)

PH4011:12	Physics Honours Part 1 of 2
PH4012:12	Physics Honours Part 2 of 2

Note: There are other subjects available for students who wish to complete honours part-time. Students should contact the school for subject information.

Physiology

Townsville

LEVEL 1

AT1210:03	Introductory Human Anatomy and Histology
CH1001:03	Chemistry: A Central Science

Plus

18 credit points satisfying the Award Requirements for the Bachelor of Science. The following are recommended:

BM1000:03	Introductory Biochemistry and Microbiology
BT1001:03	Introduction to Plant Science
BZ1001:03	Fundamentals of Biology
CH1002:03	Chemistry: Principles and Applications
CP1030:03	Introduction to Information Technology
HS1000:03	Epidemiology
MA1000:03	Mathematical Foundations
MA1401:03	Statistics and Data Analysis 1
PP1201:03	Introduction to Physiology and Pharmacology
ZL1001:03	The Diversity of Animal Life

LEVEL 2

AT2110:03	Comparative Mammalian Anatomy and Histology
PP2101:03	Medical Physiology 1
PP2201:03	Medical Physiology 2

Plus

15 credit points satisfying the Award Requirements for the Bachelor of Science. The following are recommended:

BC2013:03	Principles of Biochemistry
BC2024:03	Cell Regulation
BS2001:03	Quantitative Methods in Biology

Any Biochemistry (BC), Biological Sciences (BT, BZ, MB, ZL) or Chemistry (CH) subjects.

LEVEL 3

PP3101:03	Advanced Physiology
PP3103:03	Nutritional Physiology and Metabolism
PP3201:03	Applied Physiology
PP3203:03	Reproductive Biology and Endocrinology

Plus

12 credit points satisfying the Award Requirements for the Bachelor of Science

Any Biochemistry (BC), Biological Sciences (BT, BZ, MB, ZL), Chemistry (CH) or Pharmacology (PP3150, PP3251) subjects

LEVEL 4 (Honours students only)

PP4001:12	Physiology Honours Part 1 of 2
PP4002:12	Physiology Honours Part 2 of 2

Note: There are other subjects available for students who wish to complete honours part-time. Students should contact the School of Veterinary and Biomedical Sciences for subject information.

Psychology

Townsville, Cairns (see below)

Students who wish to undertake the major in Psychology should contact the School of Psychology before selecting their subjects. This major is not an Australian Psychological Society accredited sequence. Students wishing to undertake an APS-accredited sequence within the Bachelor of Science need to complete the requirements for the Bachelor of Psychology.

LEVEL 1

PY1101:03	Exploring Psychology 1
PY1102:03	Exploring Psychology 2

Plus

18 credit points of science subjects satisfying the Award Requirements for the Bachelor of Science

LEVEL 2

Select three subjects (9 credit points) from:

PY2101:03	Brain and Behaviour
PY2103:03#	Describing and Analysing Behaviour
PY2106:03	Human Development Across the Lifespan
PY2107:03#	Experimental Investigation and Analysis of Behaviour
PY2108:03	Evolution of Behaviour
PY2111:03	Learning and Behaviour
PY2112:03	Memory and Cognition

Plus

15 credit points of science subjects satisfying the Award Requirements of the Bachelor of Science

These are design/statistics subjects. Note that SS1103 is a prerequisite for PY2103; PY2103 is a prerequisite for PY2107 and PY2107 is a prerequisite for PY3101.

LEVEL 3

Students need to consult level 2 subjects in the Schedule of Science Subjects for the prerequisites.

Select four subjects (12 credit points) from:

PY3101:03#	Advanced Behavioural Research Design and Analysis
PY3102:03	Social Psychology
PY3103:03	Psychopathology
PY3106:03	Theoretical Foundations of Modern Psychology
PY3107:03	Introductory Psychometrics, Assessment and Ethics
PY3109:03	Cognitive Neuroscience: The Biology of Mind
PY3111:03	Advanced Health Psychology

Plus

12 credit points of science subjects satisfying the Award Requirements for the Bachelor of Science

LEVEL 4

Fourth year in Psychology (Honours or Pass degree) is only available to students who have completed the Australian Psychological Society accredited professional training sequence (please contact the School of Psychology).

Cairns

LEVEL 1

PY1101:03	Exploring Psychology 1
PY1102:03	Exploring Psychology 2

Plus

18 credit points of science subjects satisfying the Award Requirements for the Bachelor of Science.

LEVEL 2

Select three subjects (9 credit points) from:

PY2101:03	Brain and Behaviour
PY2103:03#	Describing and Analysing Behaviour
PY2106:03	Human Development Across the Lifespan
PY2107:03#	Experimental Investigation and Analysis of Behaviour
PY2111:03	Learning and Behaviour
PY2112:03	Memory and Cognition

Plus

15 credit points of science subjects satisfying the Award Requirements for the Bachelor of Science.

These are design/statistics subjects. Note that SS1103 is a prerequisite for PY2103; PY2103 is a prerequisite for PY2107 and PY2107 is a prerequisite for PY3101.

LEVEL 3

Students need to consult level 2 subjects in the Schedule of Science Subjects for the prerequisites.

Select four subjects (12 credit points) from:

PY3101:03#	Advanced Behavioural Research Design and Analysis
PY3102:03	Social Psychology
PY3103:03	Psychopathology
PY3106:03	Theoretical Foundations of Modern Psychology
PY3107:03	Introductory Psychometrics, Assessment and Ethics
PY3110:03	Human Sensation and Perception

Plus

12 credit points of science subjects satisfying the Award Requirements for the Bachelor of Science

LEVEL 4

Fourth year in Psychology (Honours or Pass degree) is only available to students who have completed the Australian Psychological Society accredited professional training sequence (please contact the School of Psychology).

Spatial Science

Townsville, Cairns

LEVEL 1

EV1001:03	Introduction to Environmental Science
EV1002:03	Society and Environment

Plus

Subjects to take the total to 24 credit points satisfying the Award Requirements for the Bachelor of Science.

LEVEL 2

EV2301:03	Urban Geography and Design
or	
EV2360:03	Cradle to Grave: Population Economy and Environment
or	
EV2401:03	Australian Landscape Processes and Evolution

EV2501:03	Introduction to Environmental Remote Sensing
EV2502:03	Introduction to Geographic Information Systems

Plus

Subjects, which may include the alternative subjects (above), to take the total credit points completed to 24 satisfying the Award Requirements for the Bachelor of Science

LEVEL 3

EV3501:03	Advanced Remote Sensing
EV3502:03	Advanced Geographic Information Systems

Plus

Two of the following subjects:

CP3020:03	Advanced Database Management
EV3001:03	Environmental and Regional Planning
EV3200:03	Terrestrial Resource Management
EV3205:03	Conserving Tropical Rainforests
EV3254:03	Tropical Agroforestry
EV3401:03	Coasts and Catchments: Geomorphology and Management
EV3404:03	Field Studies in Tropical Geography
EV3406:03	Coral Reef Geomorphology
EV3407:03	Fire Science and Management for Northern Australia
EV3456:03	Catchment Assessment and Management
EV3503:03	GIS for Environmental Analysis
EV3601:03	Social Impact Assessment: Environmental Management

Plus

Subjects, which may include the alternative subjects (above), to take the total credit points completed to 24 satisfying the Award Requirements for the Bachelor of Science

Note: CP1500 is a prerequisite for CP3020.

LEVEL 4 (Honours students only)

EV4701:12	Environmental Science Honours Part 1 of 2
EV4702:12	Environmental Science Honours Part 2 of 2
or	
EV4710:06	Environmental Science Honours (Part-Time) Part 1 of 4
EV4720:06	Environmental Science Honours (Part-Time) Part 2 of 4
EV4730:06	Environmental Science Honours (Part-Time) Part 3 of 4
EV4740:06	Environmental Science Honours (Part-Time) Part 4 of 4
or	
EV4801:12	Geography Honours Part 1 of 2
EV4802:12	Geography Honours Part 2 of 2
or	
EV4810:06	Geography Honours (Part-Time) Part 1 of 4
EV4820:06	Geography Honours (Part-Time) Part 2 of 4
EV4830:06	Geography Honours (Part-Time) Part 3 of 4
EV4840:06	Geography Honours (Part-Time) Part 4 of 4

Statistical Sciences

Townsville

The honours in Statistical Sciences program is intended for students whose undergraduate major is not in mathematics or statistics, but who have a major in another science (or related) discipline and want to carry out a project where mathematical techniques can be applied to that area.

LEVEL 4 (Honours students only)

MA4521:12	Statistical Sciences Honours Part 1 of 2
MA4522:12	Statistical Sciences Honours Part 2 of 2

LEVEL 4 (Honours Part-time students only)

MA4525:06	Statistical Sciences Part-Time Honours Part 1 of 4
MA4526:06	Statistical Sciences Part-Time Honours Part 2 of 4
MA4527:06	Statistical Sciences Part-Time Honours Part 3 of 4
MA4528:06	Statistical Sciences Part-Time Honours Part 4 of 4

Statistics

Townsville

The honours in Statistics program is intended for students whose undergraduate major is in mathematics.

LEVEL 4 (Honours students only)

MA4021:12	Statistics Honours Part 1 of 2
MA4022:12	Statistics Honours Part 2 of 2

LEVEL 4 (Honours Part-time students only)

MA4025:06	Statistics Part-Time Honours Part 1 of 4
MA4026:06	Statistics Part-Time Honours Part 2 of 4
MA4027:06	Statistics Part-Time Honours Part 3 of 4
MA4028:06	Statistics Part-Time Honours Part 4 of 4

Zoology

Townsville, Cairns

LEVEL 1

BZ1001:03	Fundamentals of Biology
ZL1001:03	The Diversity of Animal Life

Plus

18 credit points of options satisfying the Award Requirements for the Bachelor of Science. The following are recommended:

BM1000:03	Introductory Biochemistry and Microbiology (Townsville)
BT1001:03	Introduction to Plant Science
CH1001:03	Chemistry: A Central Science (Townsville)
CH1011:03	Chemistry for the Natural Sciences (Cairns)
CH1012:03	Molecular Chemistry (Cairns)
EA1110:03	Evolution of the Earth
MA1401:03	Statistics and Data Analysis 1

Any level 1 CH, CP, CU, EA, EV, MA or MB subjects

LEVEL 2

BS2001:03	Quantitative Methods in Biology
BZ2440:03	Ecology and Conservation

Plus

Select 3 credit points (one subject) from:

BZ2420:03	Genetics for Biology
ZL2005:03	Marine and Terrestrial Invertebrate Biology (Townsville)
ZL2008:03	Animal Adaptation to Environmental Change

Plus

15 credit points of subjects satisfying the Award Requirements for the Bachelor of Science. The following are recommended:

Any subjects not already selected from the above list

Any level 2 BC, BT, BZ, EV or MB subjects

LEVEL 3

Select 9 credit points (three subjects) from Group 1 and an additional 3 credit points (one subject) from Group 1 or Group 2:

Group 1

BZ3000:03	Projects in Biology
BZ3212:03	Tropical Wetlands Ecology and Management
BZ3215:03	Conservation Biology
BZ3220:03	Rainforest Populations and Communities (Townsville)
BZ3400:03	Population and Community Ecology (Cairns)
BZ3420:03	Tropical Ecosystems and Climate Change (Cairns)
BZ3450:03	Ecological and Conservation Genetics
ZL3026:03	Animal Behaviour (Townsville)
ZL3203:03	The Australian Vertebrate Fauna
ZL3205:03	Wildlife Ecology and Management (Townsville)

Group 2

BZ3001:03	Field Studies in the Equatorial Tropics: Borneo
ZL3211:03	Tropical Australian Herpetology
ZL3420:03	Ornithology
ZL3430:03	Venomous Australian Animals (Cairns)
ZL3501:03	Tropical Entomology (Cairns)

Plus

12 credit points of subjects satisfying the Award Requirements for the Bachelor of Science. The following are recommended:

Any subjects not already selected from the above list

Any level 3 BC, BS, BT, BZ, EV, MB or ZL subjects

LEVEL 4 (Honours students only)

ZL4001:12	Zoology Honours (Part 1 of 2)
ZL4002:12	Zoology Honours (Part 2 of 2)

INTERDISCIPLINARY MAJORS**Ecology**

Townsville, Cairns

LEVEL 1

BT1001:03	Introduction to Plant Science
BZ1001:03	Fundamentals of Biology
ZL1001:03	The Diversity of Animal Life

Plus

15 credit points of options. The following are recommended:

BM1000:03	Introductory Biochemistry and Microbiology (Townsville)
CH1001:03	Chemistry: A Central Science (Townsville)
CH1011:03	Chemistry for the Natural Sciences (Cairns)
CH1012:03	Molecular Chemistry (Cairns)
EA1110:03	Evolution of the Earth
MA1401:03	Statistics and Data Analysis 1

Any level 1 CH, CP, CU, EA, EV, MA or MB subjects

LEVEL 2

BS2001:03	Quantitative Methods in Biology
BT2400:03	Flowering Plant Diversity
BZ2440:03	Ecology and Conservation
ZL2008:03	Animal Adaptation to Environmental Change

Select 3 credit points (one subject) from:

BT2240:03	Marine Plants and Algae in their Environments (Townsville)
BZ2420:03	Genetics for Biology
BZ2470:03	Ecological and Evolutionary Physiology of Plants
ZL2005:03	Marine and Terrestrial Invertebrate Biology (Townsville)

Plus

9 credit points of options. The following are recommended:

EA2006:03	Hydrology
EA2007:03	Applied Soil Science

Any subject not already selected from the above list

Any level 2 BC, BT, BZ, EV, MB or ZL subjects

LEVEL 3

Select 9 credit points (three subjects) from:

BT3010:03	Biology of Plant Survival (Townsville)
BT3400:03	Tropical Flora of Australia (Cairns)
BZ3210:03	Rainforest Ecosystems (Townsville)
BZ3212:03	Tropical Wetlands Ecology and Management
BZ3420:03	Tropical Ecosystems and Climate Change (Cairns)

Plus

9 credit points (three subjects) from:

BZ3215:03	Conservation Biology
BZ3220:03	Rainforest Populations and Communities (Townsville)
BZ3400:03	Population and Community Ecology (Cairns)
BZ3450:03	Ecological and Conservation Genetics
ZL3203:03	The Australian Vertebrate Fauna
ZL3205:03	Wildlife Ecology and Management (Townsville)

Plus

6 credit points of options. The following are recommended:

Any subject not already selected from the above list

Any level 3 BC, BS, BT, BZ, EV, MB or ZL subjects

LEVEL 4 (Honours students only)

BT4001:12	Botany Honours (Part 1 of 2)
BT4002:12	Botany Honours (Part 2 of 2)

or

BZ4001:12	Botany/Zoology Honours (Part 1 of 2)
BZ4002:12	Botany/Zoology Honours (Part 2 of 2)

or

ZL4001:12	Zoology Honours (Part 1 of 2)
ZL4002:12	Zoology Honours (Part 2 of 2)

Bachelor of Science (Advanced)

Townsville, Cairns

Majors:

- Aquaculture
- Biochemistry/Molecular Biology
- Botany
- Chemistry
- Computer Science
- Environmental Science
- Genetics and Genomics
- Geography
- Mathematics
- Microbiology
- Pharmacology
- Physics
- Physiology
- Spatial Science
- Zoology

The Bachelor of Science (Advanced) is available to students with an OP equal to or less than 6, or equivalent. A maximum of 20 students will be admitted to the course (Townsville and Cairns combined).

Aquaculture

Townsville, Cairns (first year only, see below)

LEVEL 1

BZ1001:03	Fundamentals of Biology
ZL1001:03	The Diversity of Animal Life

Plus

At least 3 credit points of level 1 MA or PH subjects, but not PH1001

Plus

At least 3 credit points of level 1 CH or CP subjects or BM1000, but not CH1020 nor CP1030

Plus

At least 3 credit points of level 1 EA or EV subjects

Plus

Science level 1 options to bring the total credit points completed to 24

LEVEL 2

- AQ2001:03 Introduction to Aquaculture
 AQ2002:03 Aquaculture of Tropical Species
 BS2001:03 Quantitative Methods in Biology

Plus

Science level 2 options to bring the total number of credit points completed to 24. The following are recommended:

- BC2013:03 Principles of Biochemistry
 BT2240:03 Marine Plants and Algae in their Environments
 BZ2420:03 Genetics for Biology
 MB2050:03 Functional Biology of Marine Organisms
 MB2080:03 Marine and Terrestrial Invertebrate Biology
 MI2031:03 Marine Microbiology

LEVEL 3

- AQ5002:03 Aquaculture: Feeds and Nutrition

- AQ5003:03 Aquaculture: Propagation

or

- AQ5008:03 Aquaculture: Systems Design

- AQ5004:03 Aquaculture: Genetics and Stock Improvement

or

- AQ5007:03 Aquatic Animal Ecophysiology

- AQ5005:03 Aquaculture: Management of Culture Systems

- SC3002:03 Science, Research and Society

- SC3003:03 Science Research Internship

Plus

Science level 3 options to bring the total credit points completed to 24. The following are recommended:

- MB3150:03 Fisheries Science
 MI3031:03 Aquatic Microbial Pathobiology

Cairns (first and second years only)**LEVEL 1**

- BZ1001:03 Fundamentals of Biology
 ZL1001:03 The Diversity of Animal Life

Plus

18 credit points from science level 1 subjects satisfying the Award Requirements for the Bachelor of Science (Advanced)

LEVEL 2

- AQ2001:03 Introduction to Aquaculture
 AQ2002:03 Aquaculture of Tropical Species
 BS2001:03 Quantitative Methods in Biology

Plus

Science level 2 options to bring the total credit points completed to 24. The following are recommended:

- BZ2440:03 Ecology and Conservation
 BZ2470:03 Ecological and Evolutionary Physiology of Plants
 EA2800:03 Marine Sedimentary Environments
 MB2090:03 Tropical Marine Ecosystems
 ZL2008:03 Animal Adaptation to Environmental Change

Biochemistry/Molecular Biology**Townsville, Cairns (first year only)****LEVEL 1 - Townsville**

- CH1001:03 Chemistry: A Central Science

or

- CH1011:03 Chemistry for the Natural Sciences

- CH1002:03 Chemistry: Principles and Applications

or

- CH1012:03 Molecular Chemistry

Plus

At least 3 credit points of level 1 MA or PH subjects, but not PH1001

Plus

At least 3 credit points of level 1 EA or EV subjects

Plus

At least 3 credit points of level 1 BT/BZ/MB/ZL subjects. BZ1001 is recommended.

Plus

Science level 1 options to bring the total credit points completed to 24. BM1000 is recommended.

LEVEL 2

- BC2013:03 Principles of Biochemistry
 BC2023:03 Molecular Genetics
 BC2024:03 Cell Regulation

Plus

Science level 1 options to bring the total number of credit points completed to 24

LEVEL 3

- BC5101:03 Genes, Genomes and Development
 BC5102:03 Advanced Cell Biology
 BC5201:03 Biotechnology
 BC5202:03 Special Topics in Biochemistry and Molecular Biology
 SC3002:03 Science, Research and Society
 SC3003:03 Science Research Internship

Plus

Science level 3 options to bring the total credit points completed to 24

Botany**Townsville, Cairns****LEVEL 1**

- BT1001:03 Introduction to Plant Science
 BZ1001:03 Fundamentals of Biology

Plus

At least 3 credit points of level 1 MA or PH subjects, but not PH1001. MA1401 is recommended.

Plus

At least 3 credit points of level 1 CH or CP subjects or BM1000, but not CH1020 nor CP1030. CH1001 or CH1011 or CH1012 are recommended.

Plus

At least 3 credit points of level 1 EA or EV subjects. EA1110 is recommended.

Plus

Science level 1 options to bring the total credit points completed to 24. Level 1 AG and ZL subjects are recommended.

LEVEL 2

- BS2001:03 Quantitative Methods in Biology

Plus

3 credit points from:

- BT2240:03 Marine Plants and Algae in their Environments (Townsville)
 BT2400:03 Flowering Plant Diversity

Plus

3 credit points from:

- BZ2420:03 Genetics for Biology
 BZ2440:03 Ecology and Conservation
 BZ2470:03 Ecological and Evolutionary Physiology of Plants

Plus

Science level 2 options to bring the total credit points completed to 24. Level 2 BC, BT, EV, MB or ZL subjects are recommended:

LEVEL 3

- SC3002:03 Science, Research and Society
 SC3003:03 Science Research Internship

Plus

3 credit points from:

- BT5010:03 Advanced Biology of Plant Survival (Townsville)
 BT5400:03 Advanced Tropical Flora of Australia

Plus

9 credit points from:

- BZ5210:03 Ecology of Tropical Forest Ecosystems (Townsville)
 BZ5212:03 Tropical Wetlands Ecology and Management
 BZ5400:03 Advanced Population and Community Ecology (Cairns)
 BZ5450:03 Ecological and Conservation Genetics
 BZ5490:03 Advanced Tropical Ecosystems and Climate Change (Cairns)

Plus

Science level 3 options to bring the total credit points completed to 24. Level 3 BC, BS, BZ, EV, MB or ZL subjects are recommended.

Chemistry

Townsville, Cairns (first year only)

LEVEL 1

CH1001:03 Chemistry: A Central Science

or

CH1011:03 Chemistry for the Natural Sciences

CH1002:03 Chemistry: Principles and Applications

or

CH1012:03 Molecular Chemistry

MA1000:03 Mathematical Foundations

Plus

At least 3 credit points of level 1 BT, BZ, MB or ZL subjects

Plus

At least 3 credit points of level 1 EA or EV subjects

Plus

Science level 1 options to bring the total credit points completed to 24

LEVEL 2

9 credit points from:

CH2002:03 Physical Chemistry

CH2012:03 Environmental Analytical Techniques

CH2022:03 Chemistry of the Elements

CH2032:03 Organic Chemistry

Plus

Science level 2 options to bring the total credit points completed to 24.

Students are strongly recommended to undertake level 2 chemistry subjects among their options.

LEVEL 3

SC3002:03 Science, Research and Society

SC3003:03 Science Research Internship

Plus

CH5004:03 Physical Chemistry (Advanced)

CH5013:03 Instrumental Analytical Techniques (Advanced)

CH5022:03 Inorganic Chemistry (Advanced)

CH5032:03 Organic Chemistry

Plus

Science level 3 options to bring the total credit points completed to 24

Computer Science

Townsville, Cairns

LEVEL 1

CP1200:03 Introduction to Computer Science 1

CP1300:03 Introduction to Computer Science 2

Plus

At least 3 credit points of level 1 MA or PH subjects, but not PH1001

Plus

At least 3 credit points of level 1 EA or EV subjects

Plus

At least 3 credit points of level 1 BT, BZ, MB, or ZL subjects

Plus

Science level 1 options to bring the total credit points completed to 24.

CP1500 is recommended.

LEVEL 2

TEACHING PERIOD 1

CP2001:03 Data Structures and Algorithms

CP2004:03 Object Oriented Programming with Java

CP2402:03 Operating Systems and Architectures

Plus

Science level 2 options to bring the total credit points completed to 24

LEVEL 3

SC3002:03 Science, Research and Society

SC3003:03 Science Research Internship

Plus

A minimum of 12 credit points from:

CP5030:03 Special Topics 1

CP5046:03 ICT Project 1: Analysis and Design

CP5047:03 ICT Project 2: Implementation and Commissioning

CP5110:03 Cryptography

CP5150:03 Algorithms and Complexity

CP5503:03 Enterprise Database Systems - Oracle

CP5520:03 Advanced Databases and Applications

CP5610:03 Fundamentals of Software Engineering

CP5620:03 Object Oriented Software Engineering

Plus

Science level 3 options to bring the total credit points completed to 24

Environmental Science

Townsville, Cairns

LEVEL 1

EV1001:03 Introduction to Environmental Science

EV1002:03 Society and Environment

Plus

At least 3 credit points of level 1 MA or PH subjects, but not PH1001

Plus

At least 3 credit points of level 1 CH or CP subjects or BM1000, but not CH1020 nor CP1030

Plus

At least 3 credit points of level 1 BT, BZ, MB, or ZL subjects

Plus

Level 1 options to bring the total credit points completed to 24

LEVEL 2

EV2003:03 Introduction to Environmental Economics

LA2902:03 Environmental Law and Policy

Plus

3 credit points from:

BS2001:03 Quantitative Methods in Biology

or

MA2401:03 Statistics and Data Analysis for Environmental Science

Plus

Level 2 options to bring the total credit points completed to 24

LEVEL 3

SC3002:03 Science, Research and Society

SC3003:03 Science Research Internship

EV5001:03 Environmental and Regional Planning

EV5002:03 Environmental Impact Assessment

EV5601:03 Social Impact Assessment: Environmental Management

Plus

3 credit points selected from:

EV5100:03 Coastal Management

EV5200:03 Terrestrial Resource Management

EV5205:03 Conserving Tropical Rainforests

EV5210:03 Management of Marine Protected Areas

EV5252:03 Indigenous Environmental Management

EV5401:03 Coasts and Catchments: Geomorphology and Management (Townsville)

Plus

Level 3 options to bring the total credit points completed to 24

Genetics and Genomics

Townsville, Cairns (first year only)

LEVEL 1

CH1001:03 Chemistry: A Central Science

or

CH1011:03 Chemistry for the Natural Sciences

CH1002:03 Chemistry: Principles and Applications

or

CH1012:03 Molecular Chemistry

Plus

At least 3 credit points of level 1 MA or PH subjects, but not PH1001

Plus

At least 3 credit points of level 1 EA or EV subjects

Plus

At least 3 credit points of level 1 BT, BZ, MB, or ZL subjects. BZ1001 is recommended.

Plus

Science level 1 options to bring the total credit points completed to 24. BM1000 is recommended.

LEVEL 2

9 credit points from:

BC2013:03 Principles of Biochemistry

BC2023:03 Molecular Genetics

BC2024:03 Cell Regulation

BZ2420:03 Genetics for Biology

Plus

Science level 2 options to bring the total credit points completed to 24

LEVEL 3

SC3002:03	Science, Research and Society
SC3003:03	Science Research Internship

Plus

12 credit points from:

BC5101:03	Genes, Genomes and Development
BC5102:03	Advanced Cell Biology
BC5201:03	Biotechnology
BC5202:03	Special Topics in Biochemistry and Molecular Biology
BZ5450:03	Ecological and Conservation Genetics

Plus

Science level 3 options to bring the total credit points completed to 24

Geography**Townsville, Cairns****LEVEL 1**

EV1001:03	Introduction to Environmental Science
EV1002:03	Society and Environment

Plus

At least 3 credit points of level 1 BT, BZ, MB, or ZL subjects

Plus

At least 3 credit points of level 1 MA or PH subjects, but not PH1001

Plus

At least 3 credit points of level 1 CH or CP subjects or BM1000, but not CH1020 or CP1030

Plus

Science level 1 options to bring the total credit points completed to 24

LEVEL 2

Select 9 credit points of level 2 EV subjects

Plus

Science level 2 options to take the total credit points completed to 24

LEVEL 3

SC3002:03	Science, Research and Society
SC3003:03	Science Research Internship

Plus

12 credit points of level 5 EV subjects

Plus

Science level 3 options to take the total credit points completed to 24

Mathematics**Townsville****LEVEL 1**

MA1000:03	Mathematical Foundations
MA1003:03	Mathematical Techniques

Plus

At least 3 credit points of level 1 EA or EV subjects

Plus

At least 3 credit points of level 1 BT, BZ, MB, or ZL subjects

Plus

At least 3 credit points of level 1 CH or CP subjects or BM1000, but not CH1020 or CP1030

Plus

Science level 1 options to bring the total credit points completed to 24

LEVEL 2

MA2000:03	Mathematics for Scientists and Engineers
MA2100:03	Mathematical Methods and Differential Equations
MA2201:03	Numerical Mathematics

Plus

Science level 2 options to bring the total credit points completed to 24

LEVEL 3

SC3002:03	Science, Research and Society
SC3003:03	Science Research Internship
MA5020:03	Special Study A
MA5021:03	Special Study B
MA5022:03	Special Study C
MA5023:03	Special Study D

Plus

Science level 3 options to bring the total credit points completed to 24

Microbiology**Townsville****LEVEL 1**

BM1000:03	Introductory Biochemistry and Microbiology
HS1000:03	Epidemiology

Plus

At least 3 credit points of level 1 MA or PH subjects, but not PH1001

Plus

At least 3 credit points of level 1 BT, BZ, MB, or ZL subjects

Plus

At least 3 credit points of level 1 EA or EV subjects

Plus

Science level 1 options to bring the total credit points completed to 24.

The following are recommended:

BT1001:03	Introduction to Plant Science
BZ1001:03	Fundamentals of Biology
CH1001:03	Chemistry: A Central Science
CH1002:03	Chemistry: Principles and Applications
ZL1001:03	The Diversity of Animal Life

or any AQ, AT, BT, BZ or PP subjects.

Note: Students wishing to specialise in Clinical Microbiology should also select:

AT1210:03	Introductory Human Anatomy and Histology
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LEVEL 2

MI2011:03	Microbial Diversity
MI2021:03	Introductory Infectious Diseases and Immunobiology
MI2031:03	Marine Microbiology

Plus

Science level 2 options to bring the total credit points completed to 24.

The following are recommended:

BS2001:03	Quantitative Methods in Biology
MB2050:03	Functional Biology of Marine Organisms

or any AQ, AT, BC, BT, BZ, MB, PP or ZL subjects.

Note: Students wishing to specialise in Clinical Microbiology should also select from:

AT2110:03	Comparative Mammalian Anatomy and Histology
BC2013:03	Principles of Biochemistry
BC2023:03	Molecular Genetics
BC2024:03	Cell Regulation
PP2101:03	Medical Physiology 1
PP2201:03	Medical Physiology 2

LEVEL 3

SC3002:03	Science, Research and Society
SC3003:03	Science Research Internship

Plus

A minimum of 12 credit points from:

MI5021:03	Advanced Clinical Microbiology
MI5031:03	Advanced Aquatic Pathobiology
MI5041:03	Food Microbiology
MI5051:03	Mechanisms of Infectious Diseases
MI5061:03	Advanced Immunobiology
PP5151:03	General Pathobiology

Plus

Science level 3 options to take the total credit points completed to 24

Note: Students wishing to specialise in Clinical Microbiology should also select from:

BC5101:03	Genes, Genomes and Development
PP5151:03	General Pathobiology

Pharmacology**Townsville, Cairns (first year only)****LEVEL 1 - Townsville**

CH1001:03	Chemistry: A Central Science
CH1002:03	Chemistry: Principles and Applications

Plus

At least 3 credit points of level 1 MA or PH subjects, but not PH1001

Plus

At least 3 credit points of level 1 BT, BZ, MB, or ZL subjects

Plus

At least 3 credit points of level 1 EA or EV subjects

Plus

Science level 1 options to bring the total credit points completed to 24.

The following are recommended:

AT1210:03	Introductory Human Anatomy and Histology
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BM1000:03	Introductory Biochemistry and Microbiology
BT1001:03	Introduction to Plant Science
BZ1001:03	Fundamentals of Biology
CP1030:03	Introduction to Information Technology
HS1000:03	Epidemiology
MA1000:03	Mathematical Foundations
MA1401:03	Statistics and Data Analysis 1
PP1201:03	Introduction to Physiology and Pharmacology
ZL1001:03	The Diversity of Animal Life

LEVEL 1 - Cairns

CH1011:03	Chemistry for the Natural Sciences
CH1012:03	Molecular Chemistry

Plus

Science level 1 options to bring the total credit points completed to 24

LEVEL 2

BC2024:03	Cell Regulation
PP2101:03	Medical Physiology 1
PP2201:03	Medical Physiology 2

Plus

Science level 2 options to bring the total credit points completed to 24. The following are recommended:

BC2013:03	Principles of Biochemistry
BS2001:03	Quantitative Methods in Biology
CH2032:03	Organic Chemistry (strongly recommended)

Any level 2 Anatomy and Histology (AT), Biochemistry (BC), Biological Sciences (BT, BZ, MB, ZL), Chemistry (CH) or Physiology (PP) subjects.

LEVEL 3

SC3002:03	Science, Research and Society
SC3003:03	Science Research Internship
PP5002:03	Literature Review
PP5055:03	Special Topics in Pharmacology
PP5151:03	General Pathobiology
PP5251:03	Systemic Pathophysiology and Therapeutics

Plus

Science level 3 options to bring the total credit points completed to 24. Level 3 BC, BT, BZ, CH, MB, PP or ZL subjects are recommended.

Physics**Townsville****LEVEL 1**

PH1005:03	Advanced Stream Physics
PH1007:03	Fundamental Physics

Plus

At least 3 credit points of level 1 EA or EV subjects

Plus

At least 3 credit points of level 1 BT, BZ, MB, or ZL subjects

Plus

At least 3 credit points of level 1 CH or CP subjects or BM1000, but not CH1020 nor CP1030

Plus

Science level 1 options to bring the total credit points completed to 24

LEVEL 2

PH2002:03	Structure of Matter
PH2008:03	Thermal and Statistical Physics
PH2019:03	Introduction to Electromagnetism Optics and Thermodynamics

Plus

Science level 2 options to bring the total credit points completed to 24

LEVEL 3

PH5010:03	Directed Study
PH5020:03	Special Study A
PH5021:03	Special Study B
PH5022:03	Special Study C
SC3002:03	Science, Research and Society
SC3003:03	Science Research Internship

Plus

Science level 3 options to bring the total credit points completed to 24

Physiology**Townsville****LEVEL 1**

AT1210:03	Introductory Human Anatomy and Histology
CH1001:03	Chemistry: A Central Science

Plus

At least 3 credit points of level 1 MA or PH subjects, but not PH1001

Plus

At least 3 credit points of level 1 BT, BZ, MB, or ZL subjects

Plus

At least 3 credit points of EA or EV subjects

Plus

Science level 1 options to bring the total credit points completed to 24.

The following are recommended:

BM1000:03	Introductory Biochemistry and Microbiology
BT1001:03	Introduction to Plant Science
BZ1001:03	Fundamentals of Biology
CH1002:03	Chemistry: Principles and Applications
CP1030:03	Introduction to Information Technology
HS1000:03	Epidemiology
MA1000:03	Mathematical Foundations
MA1401:03	Statistics and Data Analysis 1
PP1201:03	Introduction to Physiology and Pharmacology
ZL1001:03	The Diversity of Animal Life

LEVEL 2

AT2110:03	Comparative Mammalian Anatomy and Histology
PP2101:03	Medical Physiology 1
PP2201:03	Medical Physiology 2

Plus

Science level 2 options to bring the total credit points completed to 24.

The following are recommended:

BC2013:03	Principles of Biochemistry
BC2024:03	Cell Regulation
BS2001:03	Quantitative Methods in Biology

or any BC, BT, BZ, CH, MB, or ZL subjects.

LEVEL 3

PP5002:03	Literature Review
PP5005:03	Special Topics in Physiology
PP5101:03	Advanced Physiology
PP5201:03	Applied Physiology
SC3002:03	Science, Research and Society
SC3003:03	Science Research Internship

Plus

Science level 3 options to take the total credit points completed to 24.

PP3150, PP3251 or BC, BT, BZ, CH, MB, or ZL subjects are recommended

Spatial Science**Townsville, Cairns (see below)****LEVEL 1**

EV1001:03	Introduction to Environmental Science
EV1002:03	Society and Environment

Plus

At least 3 credit points of level 1 MA or PH subjects, but not PH1001

Plus

At least 3 credit points of level 1 BT, BZ, MB, or ZL subjects

Plus

At least 3 credit points of level 1 CH or CP subjects or BM1000, but not CH1020 or CP1030

Plus

Science level 1 options to bring the total credit points completed to 24

LEVEL 2

EV2301:03	Urban Geography and Design
or	
EV2401:03	Australian Landscape Processes and Evolution
or	
EV2404:03	Biogeography and Climatology

EV2501:03	Introduction to Environmental Remote Sensing
EV2502:03	Introduction to Geographic Information Systems

Plus

Science level 2 options to bring the total credit points completed to 24

LEVEL 3

EV5501:03	Advanced Remote Sensing
EV5502:03	Advanced Geographic Information Systems
EV5503:03	GIS for Environmental Analysis
SC3002:03	Science, Research and Society
SC3003:03	Science Research Internship

Plus

At least 3 credit points (one subject) from the following:

CP5520:03	Advanced Databases and Applications
EV5001:03	Environmental and Regional Planning
EV5200:03	Terrestrial Resource Management
EV5401:03	Coasts and Catchments: Geomorphology and Management
EV5404:03	Field Studies in Tropical Geography
EV5406:03	Coral Reef Geomorphology
EV5601:03	Social Impact Assessment: Environmental Management

Plus

Science level 3 options to bring the total credit points completed to 24

Cairns**LEVEL 1**

EV1001:03	Introduction to Environmental Science
EV1002:03	Society and Environment

Plus

At least 3 credit points of level 1 MA or PH subjects, but not PH1001

Plus

At least 3 credit points of level 1 BT, BZ, MB, or ZL subjects

Plus

At least 3 credit points of level 1 CH or CP subjects or BM1000, but not CH1020 nor CP1030

Plus

Science level 1 options to bring the total credit points completed to 24

LEVEL 2

EV2301:03	Urban Geography and Design
<i>or</i>	
EV2360:03	Cradle to Grave: Population Economy and Environment
<i>or</i>	
EV2404:03	Biogeography and Climatology

EV2501:03	Introduction to Environmental Remote Sensing
EV2502:03	Introduction to Geographic Information Systems

Plus

Science level 2 options to bring the total credit points completed to 24

LEVEL 3

EV5501:03	Advanced Remote Sensing
EV5502:03	Advanced Geographic Information Systems
EV5503:03	GIS for Environmental Analysis
SC3002:03	Science, Research and Society
SC3003:03	Science Research Internship

Plus

At least 3 credit points (one subject) from the following:

CP5520:03	Advanced Databases and Applications
EV5001:03	Environmental and Regional Planning
EV5200:03	Terrestrial Resource Management
EV5205:03	Conserving Tropical Rainforests
EV5254:03	Tropical Agroforestry
EV5404:03	Field Studies in Tropical Geography
EV5406:03	Coral Reef Geomorphology
EV5601:03	Social Impact Assessment: Environmental Management

Plus

Science level 3 options to bring the total credit points completed to 24

Zoology**Townsville, Cairns****LEVEL 1**

BZ1001:03	Fundamentals of Biology
ZL1001:03	The Diversity of Animal Life

Plus

At least 3 credit points of level 1 MA or PH subjects, but not PH1001. MA1401 is recommended.

Plus

At least 3 credit points of level 1 CH or CP subjects or BM1000, but not CH1020 or CP1030. The following are recommended:

BM1000:03	Introductory Biochemistry and Microbiology
CH1001:03	Chemistry: A Central Science

CH1011:03	Chemistry for the Natural Sciences
CH1012:03	Molecular Chemistry

Plus

At least 3 credit points of EA or EV subjects. EA1110 is recommended.

Plus

Science level 1 options to bring the total credit points completed to 24. Level 1 BT subjects are recommended.

LEVEL 2

BS2001:03	Quantitative Methods in Biology
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Plus

Select 6 credit points from:

BZ2420:03	Genetics for Biology
BZ2440:03	Ecology and Conservation
ZL2005:03	Marine and Terrestrial Invertebrate Biology
ZL2008:03	Animal Adaptation to Environmental Change

Plus

Science level 2 options to bring the total credit points completed to 24. Level 2 BC, BT, BZ, EV or MB subjects are recommended.

LEVEL 3

SC3002:03	Science, Research and Society
SC3003:03	Science Research Internship

Plus

12 credit points from:

BZ5212:03	Tropical Wetlands Ecology and Management
BZ5215:03	Conservation Biology
BZ5220:03	Rainforest Populations and Communities
BZ5400:03	Advanced Population and Community Ecology
BZ5450:03	Ecological and Conservation Genetics
BZ5490:03	Advanced Tropical Ecosystems and Climate Change
ZL5026:03	Animal Behaviour
ZL5061:03	Topics in Animal Behaviour (not offered in 2009)
ZL5203:03	The Australian Vertebrate Fauna
ZL5205:03	Wildlife Ecology and Management

Plus

Science level 3 options to bring the total credit points completed to 24. Level 3 BC, BS, BT, BZ, EV, MB or ZL subjects are recommended.

Bachelor of Science-Bachelor of Law and Bachelor of Science-Bachelor of Laws with Honours in both or either disciplines

Townsville**YEAR 1**

LA1101:03	Legal Institutions and Processes
LA1102:03	Legal Research, Writing and Analysis
LA1103:03	Law, Society and Change
LA1104:03	Legal Concepts

Plus

12 credit points of level 1 Science subjects from the Master Schedule of Subjects.

Students must discuss proposed program with the Pro-Vice-Chancellor or appropriate Academic Adviser.

YEAR 2

LA1105:03	Contract Law 1
LA1106:03	Contract Law 2
LA2019:03	Torts A – Specific Torts
LA2020:03	Torts B – Negligence

Plus

3 credit points of level 1 Science subjects and 9 credit points of level 2 Science subjects from the Master Schedule of Subjects.

YEAR 3

LA2015:03	Land Law 1
LA2016:03	Land Law 2
LA2017:03	Principles of Criminal Law A
LA2018:03	Principles of Criminal Law B

Plus

6 credit points of level 2 Science subjects and 6 credit points of level 3 Science subjects from the Master Schedule of Subjects.

YEAR 4

LA3011:03	Commercial and Personal Property Law
LA3013:03	Principles of Equity
LA3014:03	Law of Trusts

- LA3105:03 Constitutional Law
 LA3106:03 Company and Partnership Law

Plus

6 credit points of level 3 Science subjects from the Master Schedule of Subjects and 3 credit points from the Law Elective Program as shown in the Undergraduate Courses and Majors for the Bachelor of Laws.

YEAR 5/6

- LA3004:03 Evidence
 LA3006:03 Administrative Law
 LA4011:03 Environmental Law

Plus

9 credit points of level 4 Law subjects selected from the Law Elective Program as shown in the Undergraduate Courses and Majors for the Bachelor of Laws.

6 credit points of level 3 Science subjects from the Master Schedule of Subjects so as to complete the Science requirements of:

- 15 credit points of level 1 Science subjects
- 15 credit points of level 2 Science subjects
- 18 credit points of level 3 Science subjects

A candidate for the joint degree with Honours in Law must include LA4026 Research Dissertation A or LA4047 Research Dissertation B Part 1 of 2 and LA4048 Research Dissertation B Part 2 of 2 as part of the approved course of study.

Notes:

1. In accordance with the requirements of the Supreme Court (Legal Practitioners Admission) Rules 2004 (QLD), students who intend, at any time, to seek admission as a Legal Practitioner in Queensland must include as subjects within their degree:

- LA4022:03 Civil Procedure
 LA4038:03 Legal Ethics and Trust Accounting

2. Students seeking admission to practice are strongly advised to include the following level 4 subjects:

- LA4007:03 Succession
 LA4019:03 Conveyancing and Drafting
 LA4032:03 Family Law

3. Students seeking admission to practice are also encouraged to include LA4014:03 Clinical Legal Studies, however in Townsville a quota applies to this subject.

Bachelor of Tropical Agricultural Science and Bachelor of Tropical Agricultural Science with Honours

Townsville, Cairns

LEVEL 1

- AG1001:03 Agriculture and Agroecosystems (not offered in 2009)
 AG1002:03 Biological Principles for Agricultural and Veterinary Sciences
 AG1003:03 Plant Biology for Agricultural and Veterinary Sciences
 AG1004:03 Animal Biology for Agricultural and Veterinary Sciences

- CH1001:03 Chemistry: A Central Science
 or
 CH1011:03 Chemistry for the Natural Sciences

Plus

9 credit points (three subjects) selected from the following:

- BU1003:03 Economics for Business
 BU1008:03 Marketing Fundamentals
 CH1002:03 Chemistry: Principles and Applications
 CP1010:03 Introduction to Multimedia
 EA1002:03 Environmental Earth Science
 EV1001:03 Introduction to Environmental Science
 MA1401:03 Statistics and Data Analysis 1
 TV1102:03 Cell Biology and Biochemistry for Veterinary Science and Agriculture
 TV1202:03 Physiology and Pharmacology for Agricultural Science

LEVEL 2

- AG2001:03 Quantitative Methods in Agricultural Science
 AG2002:03 Agricultural Plant Ecological Physiology
 AG2005:03 Genetics for Agriculture
 AG2006:03 Ecological Principles in Agriculture
 AG2007:03 Diversity of Flowering Plants for Agricultural Science
 EA2007:03 Applied Soil Science

Plus

6 credit points (two subjects) selected from the following:

- AQ2001:03 Introduction to Aquaculture
 AQ2002:03 Aquaculture of Tropical Species
 BC2013:03 Principles of Biochemistry
 BC2023:03 Molecular Genetics
 EA2006:03 Hydrology
 EV2501:03 Introduction to Environmental Remote Sensing
 EV2502:03 Introduction to Geographic Information Systems
 IA2013:03 Ecology and Australian Indigenous Cultures
 LA2902:03 Environmental Law and Policy
 MI2011:03 Microbial Diversity
 MI2021:03 Introductory Infectious Diseases and Immunobiology
 ZL2005:03 Marine and Terrestrial Invertebrate Biology
 ZL2008:03 Animal Adaptation to Environmental Change

LEVEL 3

- AG3000:03 Project in Agricultural Science
 AG3002:03 Ecological Economics of Agricultural Systems
 AG3004:03 Crops and Products
 AG3005:03 Agroecology

Plus

12 credit points (two subjects) selected from the following:

- AG3003:03 Topics in Genetics
 AQ3002:03 Aquaculture: Feeds and Nutrition
 AQ3003:03 Aquaculture: Propagation
 AQ3004:03 Aquaculture: Genetics and Stock Improvement
 AQ3005:03 Aquaculture: Management of Culture Systems
 AQ3007:03 Aquatic Animal Ecophysiology
 AQ3008:03 Aquaculture: Systems Design
 BZ3212:03 Tropical Wetlands Ecology and Management
 BZ3215:03 Conservation Biology
 EA3006:03 Land Degradation Field Studies
 EV3200:03 Terrestrial Resource Management
 EV3254:03 Tropical Agroforestry
 EV3407:03 Fire Science and Management for Northern Australia
 EV3501:03 Advanced Remote Sensing
 EV3502:03 Advanced Geographic Information Systems
 GG3101:03 Advanced Genetics and Genomics
 GG3102:03 Molecular Cell Biology
 ZL3501:03 Tropical Entomology (Cairns)

LEVEL 4 (HONOURS)

- AG4001:12 Tropical Agricultural Sciences Honours (Part 1 of 2)
 AG4002:12 Tropical Agricultural Sciences Honours (Part 2 of 2)

Diploma of Introductory Engineering Studies

Townsville, Cairns

The Diploma of Introductory Engineering Studies is a pathway program for those who wish to enter tertiary engineering courses but do not have the necessary senior subjects for direct entry. Students who successfully complete this course may be eligible to enter the second year of the Bachelor of Engineering. Students can complete the diploma in Cairns, but must enter the second year of the Bachelor degree at Townsville.

CORE SUBJECTS

- CU1010:03 Effective Writing
 EG1000:03 Engineering 1
 MA1020:03 Preparatory Mathematics

OPTIONS

15 credit points of options selected from the following:

- EG1001:03 Engineering Statics
 EG1002:03 Computing for Engineers
 EG1010:03 Process Engineering
 EG1011:03 Engineering Dynamics
 EG1012:03 Electric Circuits

MA1000:03 Mathematical Foundations

MA1003:03 Mathematical Techniques

Diploma of Science

Majors:

- Information Technology
- Science

The Diploma of Science is a pathway program for those who wish to enrol tertiary science courses but do not have the necessary senior subjects for direct entry. This course includes bridging subjects in chemistry, maths, English and information technology. Students who successfully complete this course may be eligible for entry to the second year of the Bachelor of Science or Bachelor of Information Technology at JCU. Credit may be obtained for other science courses. If students wish to progress into a degree program, consultation with the appropriate Academic Registrar or Head of Campus is advised prior to commencement of the diploma, so that students may be advised of subjects which will be credited towards the degree program.

Information Technology

Townsville, Cairns, Brisbane, Singapore

CORE SUBJECTS

CP1200:03 Introduction to Computer Science 1

CP1300:03 Introduction to Computer Science 2

CP1500:03 Introduction to Database Principles

MA1401:03 Statistics and Data Analysis 1

OPTIONS

12 credit points of options selected from the following:

BU1010:03 Business Statistics

CO1821:03 Business Information Systems

CP1010:03 Introduction to Multimedia

CP1030:03 Introduction to Information Technology

CU1010:03 Effective Writing

MA1000:03 Mathematical Foundations

MA1020:03 Preparatory Mathematics

Science

Townsville, Cairns

CORE SUBJECTS

CH1020:03 Preparatory Chemistry

CP1030:03 Introduction to Information Technology

CU1010:03 Effective Writing

MA1020:03 Preparatory Mathematics

OPTIONS

12 credit points of science level 1 subjects selected from the following:

AG1001:03 Agriculture and Agroecosystems

AG1003:03 Plant Biology for Agricultural and Veterinary Sciences

AG1004:03 Animal Biology for Agricultural and Veterinary Sciences

BT1001:03 Introduction to Plant Science

BZ1001:03 Fundamentals of Biology

EA1002:03 Environmental Earth Science

EA1003:03 Introductory Earth Science (External)

EA1004:03 Environmental Earth Science (External)

EA1110:03 Evolution of the Earth

EV1001:03 Introduction to Environmental Science

EV1002:03 Society and Environment

EV1004:03 Understanding Environmental Issues (Townsville) (not offered in 2009)

MB1110:03 Introductory Marine Science (Townsville)

PH1001:03 Preparatory Physics

ZL1001:03 The Diversity of Animal Life