Faculty of Science, Engineering and Information Technology

Postgraduate Award Requirements

Postgraduate Courses

Research Activities

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

GENERAL

1.1 The graduate degrees shall be:

Master of Applied Science	MAppSc
Master of Astronomy	MAstron
Master of Astronomy Education[1]	MAstronEd
Master of Computational Engineering[2]	MCompEng
Master of Engineering Science	MEngSc
Master of Information Technology	MInfTech
Master of Information Technology-Master of Business Administration	MInfTech-MBA
Master of Science	MSc
Minerals Geoscience Masters	MMinGeoSc

1. Course disestablished from 2009. No new enrolments will be accepted in this course.
2. Course not offered in 2009. No new enrolments will be accepted in this course.

1.2 *There shall be awards of:*

Postgraduate Diploma of Computational Engineering[1]	PGDipCompEng
Graduate Diploma of Astronomy	GDipAstron
Graduate Diploma of Biotechnology	GDipBiotech
Graduate Diploma of Information Technology	GDipInfTech
Graduate Diploma of Science	GDipSc
Postgraduate Certificate of Computational Engineering[2]	PGCertCompEng
Graduate Certificate of Astronomy	GCertAstron
Graduate Certificate of Biotechnology	GCertBiotech
Graduate Certificate of Information Technology	GCertInfTech
Graduate Certificate of Science	GCertSc

1. Course not offered in 2098. No new enrolments will be accepted in this course.
2. Course not offered in 2009. No new enrolments will be accepted in this course.

1.3 *Doctorate awards associated with this faculty are:*

Doctor of Astronomy	DAstron
Doctor of Tropical Environmental Management	DTropEnvMgt

(Award requirements for these courses are shown under Doctorate Degree Requirements)

1.4 *Higher Doctorate awards associated with this faculty are:*

Doctor of Engineering	DEng
Doctor of Science	DSc

(Award requirements for these courses are shown under Doctorate Degree Requirements)

MASTER OF APPLIED SCIENCE

Enrolment in the degree

1. The degree of Master of Applied Science may be undertaken in the schools and institutes listed in Schedule A below.
2. A person may be approved to enrol for the degree if that person has qualified in this or another recognised institution of higher education for a Bachelor degree or its equivalent provided that the faculty, on the recommendation of the appropriate Head of School, is satisfied that the candidate has sufficient qualifications and/or experience for admission to candidature.

Requirements for the degree

3.1 A student for the degree shall pursue studies to obtain normally 36 credit points of level 5 subjects.

3.2 The 36 credit points from 3.1 above, shall be obtained in accordance with the requirements set out in the selected major of study or as decided by the relevant Head(s) of Schools.

3.3 A student must complete at least 18 credit points in the discipline in which he/she is taking out the degree or as specified by the relevant Head(s) of Schools.

Period of candidature

4. A student shall complete the requirements for the degree normally in three teaching periods and not more than two calendar years in the case of a full-time student and normally in six teaching periods and not more than four calendar years for a part-time student. The minimum period of candidature will be one calendar year.

Advanced standing for other studies

5. Advanced standing may be granted for:

5.1 subjects completed in the Graduate Diploma of Science offered at this University, to a maximum of 24 credit points, provided that this award is surrendered; or

5.2 equivalent subjects completed at this or another recognised institution of higher education, to a maximum of 12 credit points where that subject has not already counted towards an undergraduate degree.

Exemption for other studies

6. Exemption may be granted for a maximum of 9 credit points for relevant subjects completed at the undergraduate level provided that additional postgraduate subjects approved by the Head of the appropriate School are completed to bring to 36 the total credit points completed for the degree.

Evaluation by research option

7.1 If the research option is taken then the submission of the original and two copies of the dissertation or report on an approved research topic is to be submitted for examination.

7.2 The Heads of the Schools in which the student is registered shall nominate the names of two examiners. These may both be internal or one or both may be external.

7.3 The dissertation or report normally is to have a minimum value of 12 credit points and a maximum value of 15 credit points.

7.4 The faculty, on considering the reports of the examiners, may recommend the award of the degree, refuse the degree or require the student to submit to further examination.

7.5 On completion of all requirements to the satisfaction of the faculty and on the recommendation of the school, the faculty will recommend the award of the degree.

7.6 A copy of the dissertation or report shall be kept in the school and/or in the Library.

Award

8. A student who has complied with all the requirements, together with all other relevant statutes and requirements shall be recommended for the award of Master of Applied Science.

Entry to a Master of Science

9. A student who has completed the requirements of the Master of Applied Science including the attainment of at least a Credit grade in the project option may apply to the Head of the appropriate School/Institute for approval to enrol in a Master of Science.

Schedule A
Schools

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

MASTER OF ASTRONOMY

see also Courses, Master of Astronomy on page 286

1. A Master of Astronomy may be undertaken in the Centre for Astronomy in the School of Mathematics, Physics and Information Technology.
2. A person may enrol for the Master of Astronomy if that person:
   - 2.1 has qualified at this or another University for a Bachelors degree, provided that the faculty, on the recommendation of the Head of the School of Mathematics, Physics and Information Technology, is satisfied that the standard and the subjects of the previous studies are adequate for the field of study being selected; or
   - 2.2 has completed the requirements of the Graduate Diploma of Astronomy; or
   - 2.3 has other qualifications or practical experience recognised by the faculty as equivalent to Requirement 2.1 or 2.2.

Period of the candidature

3. A student shall normally complete the requirements for the degree in three teaching periods of full-time study or its equivalent. The maximum duration shall be three years full-time (six teaching periods) or its equivalent.

Evaluation

4. A candidate shall normally complete a total of 36 credit points of which 30 are core subjects. Any variation to this must be approved by the Head of the School of Mathematics, Physics and Information Technology.
5. Appeal procedures are as per the University appeals procedures.
6. A student who has complied with the provisions of these requirements and all other Statutes and Requirements of the University shall be recommended by the faculty for the award of the Master of Astronomy.

Advanced standing for previous studies

7. A student who has completed the requirements for the Graduate Certificate of Astronomy and/or the Graduate Diploma of Astronomy may be given full advanced standing for the credit points in the Graduate Certificate and/or Graduate Diploma towards the Master of Astronomy provided the Graduate Certificate and/or Graduate Diploma of Astronomy awards are surrendered.
8. A student who, at this or another institution of higher education, has passed a subject which is deemed by the Faculty, on the advice of the Head of the School of Mathematics, Physics and Information Technology, to be equivalent to a subject set out in the specified program shown under Postgraduate Courses may be granted advanced standing for that subject by the faculty, up to a maximum of 18 credit points.

MASTER OF ASTRONOMY EDUCATION

see also Courses, Master of Astronomy Education on page 286

Note: The Master of Astronomy Education is disestablished from 2009. No new enrolments will be accepted in this course.

1. A Master of Astronomy Education may be undertaken in the Centre for Astronomy in the School of Mathematics, Physics and Information Technology.
2. A person may enrol for the Master of Astronomy Education if that person:
   - 2.1 has qualified at this or another University for a Bachelors degree, provided that the faculty, on the recommendation of the Head of the School of Mathematics, Physics and Information Technology, is satisfied that the standard and the subjects of the previous studies are adequate for the field of study being selected; or
   - 2.2 has other qualifications or practical experience recognised by the faculty as equivalent to Requirement 2.1.

Period of the candidature

3. A student shall normally complete the requirements for the degree in three teaching periods of full-time study or its equivalent. The maximum duration shall be three years full-time (six teaching periods) or its equivalent.

Evaluation

4. A candidate shall normally complete 36 credit points of subjects listed under Postgraduate Courses. Any variation to this must be approved by the Head of the School of Mathematics, Physics and Information Technology.
5. The candidate must complete the four compulsory core subjects (24 credit points). At least two of these subjects must be completed before the student commences the Education subjects.
6. The candidate must complete a total of 12 credit points of the specified Education subjects.
7. Appeal procedures are as per the University appeals procedures for the Masters degrees.
8. A student who has complied with the provisions of these requirements and all other Statutes and Requirements of the University shall be recommended by the faculty for the award of Master of Astronomy Education.

Advanced standing for previous studies

9. A student who has completed the requirements for the Graduate Certificate of Astronomy and/or the Graduate Diploma of Astronomy at this University may be given full advanced standing for the credit points in the Graduate Certificate and/or Graduate Diploma towards the Master of Astronomy Education provided the Graduate Certificate and/or Graduate Diploma of Astronomy awards are surrendered.

10 A student who, at this or another institution of higher education, has passed a subject which is deemed by the faculty, on the advice of the Head of the School of Mathematics, Physics and Information Technology, to be equivalent to a subject set out in the specified program may be granted advanced standing for that subject by the faculty in accordance with the University's Framework for Postgraduate Courses.

MASTER OF COMPUTATIONAL ENGINEERING

see also Courses, Master of Computational Engineering on page 287

Note: The Master of Computational Engineering is not offered in 2009. No new enrolments will be accepted in this course.

1. The degree of Master of Computational Engineering shall consist of 36 credit points of study.

Entry requirements

2. A person may enrol for the degree of Master of Computational Engineering if that person:
   - 2.1 has completed a Bachelor of Engineering with Honours, a Postgraduate Diploma, or a Bachelor of Engineering with a minimum of two years of experience in aerospace, automotive, biomedical, civil, environmental, manufacturing, materials, mechanical or mining and/or additional education experience, such as the Research Methods course, which the Head of the School of Engineering deems as a demonstration of research potential; or
   - 2.2 has completed a Bachelor's degree in an allied field (eg Applied Mathematics, Physics, Chemical Engineering), which is considered adequate by the faculty, on the recommendation of the Head of the School of Engineering; or
   - 2.3 has a qualification from another faculty or institution accepted by the faculty as equivalent to Requirement 2.1 or 2.2 and with the approval of the Head of the School of Engineering.

Course of study

3.1 Unless granted advanced standing for previous study, a student shall follow the course of study prescribed for the specified program under Postgraduate Courses, to obtain 36 credit points including:
   - 3.1.1 24 credit points of coursework and 12 credit points of project work; or

3.1.2 30 credit points of coursework and 6 credit points of project work; or

3.1.3 36 credit points of coursework.

3.2 Each student shall follow a course of advanced study and investigation including self-study, attending lectures and tutorial classes as prescribed for each subject.

Advanced standing for previous study

4.1 A student who has completed the requirements for the Postgraduate Certificate of Computational Engineering or the Postgraduate Diploma of Computational Engineering may be given full advanced standing for the credit points in the Postgraduate Certificate or Postgraduate Diploma towards the Master of Computational Engineering provided the Postgraduate Certificate or Postgraduate Diploma of Computational Engineering is surrendered.

4.2 A student who, at another institution of higher education, has passed a postgraduate subject which is deemed by the School of Engineering to be equivalent to a subject set out in the specified program shown under Postgraduate Courses, may be granted advanced standing for that subject, up to a maximum of 12 credit points.

Duration

5. Each student shall complete the requirements for the degree, either full-time in normally not less than one year nor more than two years, or part-time in normally not less than two years nor more than four years.

Assessment

6.1 Assessment may include any or all of the following: assignments, a research project, report and oral presentation, quizzes, tests and examinations.

6.2 A student who has complied with the provisions of these Requirements and all other relevant Statutes and Requirements of the University shall be recommended by the faculty for the award of Master of Computational Engineering.

MASTER OF COMPUTATIONAL ENGINEERING (BRIDGING)

see also Courses, Master of Computational Engineering (Bridging) on page 287

Note: The Master of Computational Engineering (Bridging) is not offered in 2009. No new enrolments will be accepted in this course.

This program incorporates the Master of Computational Engineering with an additional 12 credit points of bridging subjects to allow candidates, who would otherwise not qualify, to gain entry to the Master of Computational Engineering.

Please note that the "Bridging" nomenclature does not appear on the testamur. Refer to Requirement 6.2 below for more information.

1. The degree of Master of Computational Engineering shall consist of 48 credit points of study.

Entry requirements

2. A person may enrol for the degree of Master of Computational Engineering (Bridging) if that person:

2.1 has completed a Diploma or Bachelor of Engineering (without Honours) with a background in solid mechanics and/or fluid mechanics; or

2.2 has completed a Bachelor's degree in an allied field such as Applied Mathematics, or Applied Science, which is considered adequate by the faculty, on the recommendation of the Head of the School of Engineering; or

2.3 has a qualification from another faculty or institution accepted by the faculty as equivalent to Requirement 2.1 or 2.2 and with the approval of the Head of the School of Engineering.

Course of study

3.1 Unless granted advanced standing for previous study, a student shall follow the course of study prescribed for the specified program under Postgraduate Courses, to obtain 48 credit points.

3.2 The course of study shall include four bridging subjects, equivalent to 12 credit points of study, as specified by the Head of the School of Engineering. An additional 36 credit points from the Master of Computational Engineering course of study shall be undertaken as:

3.2.1 24 credit points of coursework and 12 credit points of project work; or

3.2.2 30 credit points of coursework and 6 credit points of project work; or

3.2.3 36 credit points of coursework.

3.3 Each student shall follow a course of advanced study and investigation including self-study, attending lectures and tutorial classes as prescribed for each subject.

Advanced standing for previous study

4.1 Students transferring from the Postgraduate Certificate of Computational Engineering or the Postgraduate Diploma of Computational Engineering may be awarded advanced standing for subjects studied under the Postgraduate Certificate or Postgraduate Diploma provided that award is surrendered.

4.2 A student who, at another institution of higher education, has passed a postgraduate subject which is deemed by the School of Engineering to be equivalent to a subject set out in the specified program shown under Postgraduate Courses, may be granted advanced standing for that subject, up to a maximum of 12 credit points.

Duration

5. Each student shall complete the requirements for the degree, either full-time in normally not less than one and a half years nor more than two and a half years, or part-time in normally not less than three years nor more than five years.

Assessment

6.1 Assessment may include any or all of the following: assignments, a research project, report and oral presentation, quizzes, tests and examinations.

6.2 A student who has complied with the provisions of these Requirements and all other relevant Statutes and Requirements of the University shall be recommended by the faculty for the award of Master of Computational Engineering. (Please note that the "Bridging" nomenclature does not appear on the testamur.)

MASTER OF ENGINEERING SCIENCE

see also Courses, Master of Engineering Science on page 290

Entry requirements

1. To qualify for admission to candidature an applicant shall have completed the requirements for:

1.1 Bachelor of Engineering with Honours[1]; or

1.2 Bachelor of Engineering with at least two years of work and/or additional educational experience, such as the Research Methods course, which the Head of the School of Engineering deems as a demonstration of research potential;

1.3 Bachelor of Science with Honours or Bachelor of Applied Science with Honours and with the approval of the Head of the School of Engineering;

1.4 a qualification from another faculty or institution accepted by the faculty as equivalent to Requirements 1.1 to 1.3 and with the approval of the Head of the School of Engineering and the Board of Postgraduate Studies Committee (BPSC).

Course of study

2.1 The Master of Engineering Science is predominantly a research degree. The candidate will conduct a research project that is approved by the BPSC.

2.2 The degree may include coursework up to the value of 9 credit points that is either specified by the Head of the School of Engineering or desired by the candidate in order to broaden or strengthen the student's knowledge of his/her research area.

Duration

3. Each student shall complete the requirements for the degree, either full-time in normally not less than one year nor more than two years, or part-time in normally not less than two years nor more than four years.

Supervision

4. A candidate enrolled for the Master of Engineering Science shall be assigned a Principal Supervisor and a Co-supervisor or Associate Supervisor who shall be members of the staff of the University and on the Register of Supervisors of the University.

Confirmation of candidature

5. The candidate shall apply to have their candidature confirmed, normally within the first four months of enrolment for a full-time candidate; or normally within the first eight months of enrolment for a part-time candidate.

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1. It is expected that normally, the Honours course would include a research component.

Final year (exit) seminar presentation

6. A candidate shall at a seminar present an overview and synthesis of major findings of the thesis in a public forum during the final year of candidature.

Assessment

7.1 A candidate shall submit a thesis embodying the results of the research.

7.2 The original and two copies of the thesis shall be submitted to the Graduate Research School.

7.3 The Head of the School of Engineering shall advise the Graduate Research School in writing of the names of not less than two examiners, at least one of whom shall be external to the University. The student's supervisor shall not be an examiner.

7.4 The degree may be conferred only when a final unbound copy, and normally a PDF file, of the thesis have been deposited in the Library or a written guarantee has been provided by the appropriate Head of School that the said School holds all the material necessary for the preparation of these copies.

Appeal

8.1 A candidate affected by a decision of the Board of Postgraduate Studies Committee pursuant to the Masters by Research requirements may appeal against the decision. Such appeal shall be instituted by a notice in writing setting out the grounds thereof and shall be submitted to the University Registrar within 28 days of the notification to the candidate of the decision appealed from.

8.2 The Appeal shall be determined by an Appeal Panel which is independent of the Board of Postgraduate Studies and established by the University Registrar.

8.3 The Appeal Panel shall consist of the Chair, Academic Board (or nominee) (Chair) and four members appointed by the Chair. Two members of the Appeal Panel shall be postgraduate students chosen in consultation with the President of the Postgraduate Student Association.

8.4 The Appeal Panel shall meet within 28 days of the University Registrar receiving the notice in writing from the candidate as outlined in Requirement 8.1 above.

8.5 The Appeal Panel shall consider only:

8.5.1 the grounds of the request for the appeal;

8.5.2 any documents relevant to the decision against which the candidate has appealed;

8.5.3 such further material as the Appeal Panel may, in the exercise of its discretion, permit to be placed before it if it considers it necessary or desirable in the interests of justice to do so.

8.6 The candidate shall have the right to be heard in person or to make submissions in writing; and to be represented by the Student Association Academic Support Services Coordinator, the Student Association Welfare Coordinator, or another member of the University community not acting in a legal capacity, provided that any candidate to be so represented must notify the University Registrar at least 48 hours prior to the time set for the appeal.

8.7 The Appeal Panel shall have the power to allow or dismiss an appeal against the decision; or vary the decision of the Board of Postgraduate Studies Committee.

8.8 The Chair of the Appeal Panel shall notify the University Registrar forthwith of its decision and reasons and the University Registrar shall notify in writing the student within 14 days of the Appeal Panel's decision. The Chair of the Appeal Panel shall also advise the Board of Postgraduate Studies Committee of the outcome and any recommendations made by the Appeal Panel.

8.9 The Appeal Panel's decision shall be final.

MASTER OF INFORMATION TECHNOLOGY

see also Courses, Master of Information Technology on page 293

Requirements for candidature

1. A person may enrol for the Master of Information Technology if that person:

1.1 has qualified at this or another University for a Bachelors degree in Information Technology or a related discipline, provided that the faculty, on the recommendation of a Head of a School of the Faculty of Science, Engineering and Information Technology, is satisfied that the standard and the subjects of the previous studies are adequate preparation for the field of study being selected; or

1.2 has qualified at this or another University for a Bachelors degree, not in Information Technology nor in a related discipline, but which is considered by the faculty on the recommendation of the head of the appropriate school, to be adequate preparation for the field of study being selected; or

1.3 has other qualifications or practical experience recognised by the faculty as equivalent to Requirement 1.1 or 1.2.

Program of study

2. Unless granted advanced standing for previous study, a student shall follow the course of study prescribed under Postgraduate Courses, to obtain 36 credit points in one of the fields of study specified in Schedule A below.

3. The 36 credit points from requirement 2 shall consist of level 5 subjects, at least 18 credit points of which must be from CP subjects.

4. To complete a subject a student shall satisfy the written, practical and other examination requirements designated by the relevant Head of School and approved by the faculty.

5. Except with the approval of the Pro-Vice-Chancellor, a student may not enrol for any subject until advanced standing has been obtained for any prerequisite subject or subjects as listed in the Master Schedule of Subjects.

6. The normal duration of this degree is 1.5 years, commencing from the date of the first classes in the program. Full-time candidates shall normally complete the requirements of this degree within the normal duration.

7. When suitable block mode subjects are available, by approval of the Pro-Vice-Chancellor of the Faculty of Science, Engineering and Information Technology, candidates may commence this degree at the start of a block mode subject providing that full-time candidates can still complete the requirements of the degree within the normal duration.

Advanced standing for previous study

8. Students transferring from the Graduate Certificate of Information Technology or the Graduate Diploma of Information Technology may be awarded advanced standing for subjects studied under the Graduate Certificate or Graduate Diploma, provided that award is relinquished.

9. Advanced standing of up to 12 credit points may be granted for postgraduate level subjects in a relevant discipline or for recognised prior learning in accordance with University policy.

Schedule A – Fields of Study

E-Business
Industry Research and Development
Multimedia Game Development
Networking

MASTER OF INFORMATION TECHNOLOGY (EXTENDED)

see also Courses, Master of Information Technology (Extended) on page 293

Note: The Master of Information Technology (Extended) is designed for students whose background is not in IT. The course includes a bridge of four subjects specified by the Head of School of Mathematics, Physics and Information Technology to extend the background IT knowledge of the particular student.

Requirements for candidature

1. A person may enrol for the Master of Information Technology (Extended) if that person:

1.1 has qualified at this or another University for a Bachelors degree in Information Technology or a related discipline, provided that the faculty, on the recommendation of a Head of a School of the Faculty of Science, Engineering and Information Technology, is satisfied that the standard and the subjects of the previous studies are adequate preparation for the field of study being selected; or

1.2 has qualified at this or another University for a Bachelors degree, not in Information Technology nor in a related discipline, but which is considered by the faculty on the recommendation of the head of the appropriate school, to be adequate preparation for the field of study being selected; or

1.3 has other relevant qualifications (typically a three year full-time diploma in Information Technology) which is considered by the faculty, on the recommendation of the head of the appropriate school, to be adequate preparation for the field of study being selected; or

1.4 has completed the requirements for either the Graduate Certificate of Information Technology or the Graduate Diploma of Information Technology; or

1.5 has other qualifications or practical experience recognised by the faculty as equivalent to Requirement 1.1, 1.2, 1.3 or 1.4.

Program of study

2. Unless granted advanced standing for previous study, a student shall follow the course of study prescribed under Postgraduate Courses, to obtain 48 credit points in one of the fields of study specified in Schedule A below.
3. The 48 credit points from requirement 2 shall consist of 12 credit points of CP subjects as directed by the Head of the School of Mathematics, Physics and Information Technology to extend the knowledge of a particular student, as appropriate for the major(s) chosen. These may be undergraduate level subjects. The remaining 36 credit pointsmust be at postgraduate level and satisfy the requirements for the Master of Information Technology.
4. To complete a subject a student shall satisfy the written, practical and other examination requirements designated by the relevant Head of School and approved by the faculty.
5. Except with the approval of the Pro-Vice-Chancellor, a student may not enrol for any subject until credit has been obtained for any prerequisite subject or subjects as listed in the Master Schedule of Subjects.
6. The normal duration of this degree is two years, commencing from the date of the first classes in the program. Full-time candidates shall normally complete the requirements of this degree within the normal duration.
7. When suitable block mode subjects are available, by approval of the Pro-Vice-Chancellor of the Faculty of Science, Engineering and Information Technology, candidates may commence this degree at the start of a block mode subject providing that full-time candidates can still complete the requirements of the degree within the normal duration.

Advanced standing for previous study

8. Students transferring from the Graduate Certificate of Information Technology or the Graduate Diploma of Information Technology may be awarded advanced standing for subjects studied under the Graduate Certificate or Graduate Diploma, provided that award is relinquished.
9. Advanced standing of up to 12 credit points may be granted for relevant previous postgraduate study or for recognised prior learning in accordance with University policy.

Schedule A – Fields of Study

E-Business
Industry Research and Development
Multimedia Game Development
Networking

MASTER OF INFORMATION TECHNOLOGY BY RESEARCH

Entry criteria

1.1 Admission is normally granted on the basis of a Bachelors degree in a relevant discipline with Honours Class I or II or a Graduate Diploma of Research Methods (graduates with a three year Bachelors degree) or Graduate Certificate of Research Methods (graduates with a four year Bachelors degree). It is desirable that a grade point average of at least Credit level be obtained in the research component of a research methods course.

1.2 Other qualifications will be considered for entry, subject to approval of the Head of the School of Mathematics, Physics and Information Technology, certifying that they are at least equivalent to the standard entry criteria. This normally includes the following:

- 1.2.1 a Bachelors degree with a final year average of Credit or better, plus working evidence of substantial self-directed achievements in ICT in activity that the Director of Research of the School of Mathematics, Physics and Information Technology judges to be equivalent to a Graduate Certificate of Research Methods;
- 1.2.2 a Bachelors degree plus working evidence of substantial self-directed achievement in ICT activity which the Director of Research (SIT) judges to be equivalent to a Graduate Diploma in Research Methods;
- 1.2.3 completion of four subjects from the MInfTech (Industry Research and Development) program, including completion, at Credit level or above, of both of the subjects Scientific Research Methods and Literature Review and Research Proposal.

Supervision

2. A candidate enrolled for the Master of Information Technology by Research shall be assigned a Principal Supervisor and a Co-supervisor or Associate Supervisor who shall be members of the staff of the University and on the Register of Supervisors of the University.

Confirmation of candidature

3. A candidate shall apply to have his/her candidature confirmed, normally within the first four months of enrolment for a full-time candidate; or normally within the first eight months of enrolment for a part-time candidate.

Final year (exit) seminar presentation

4. A candidate shall at a seminar present an overview and synthesis of major findings of the thesis in a public forum during the final year of candidature.

Assessment

5.1 A candidate shall submit a thesis embodying the results of the research within a minimum of 12 months and a maximum of 18 months of confirmation of candidature.

5.2 The original and two copies of the thesis shall be submitted to the Graduate Research School.

5.3 The Head of the School of Mathematics, Physics and Information Technology shall advise the Graduate Research School in writing of the names of not less than two examiners, at least one of whom shall be external to the University. The student's supervisor shall not be an examiner.

5.4 The degree may be conferred only when a final unbound copy, and normally a PDF file, of the thesis have been deposited in the Library or a written guarantee has been provided by the appropriate Head of School that the School holds all the material necessary for the preparation of these copies, and will submit to the Library in due course.

Appeal

6.1 A candidate affected by a decision of the Board of Postgraduate Studies Committee pursuant to the Masters by Research requirements may appeal against the decision. Such appeal shall be instituted by a notice in writing setting out the grounds thereof and shall be submitted to the University Registrar within 28 days of the notification to the candidate of the decision appealed from.

6.2 The Appeal shall be determined by an Appeal Panel which is independent of the Board of Postgraduate Studies and established by the University Registrar.

6.3 The Appeal Panel shall consist of the Chair, Academic Board (or nominee) (Chair) and four members appointed by the Chair. Two members of the Appeal Panel shall be postgraduate students chosen in consultation with the President of the Postgraduate Student Association.

6.4 The Appeal Panel shall meet within 28 days of the University Registrar receiving the notice in writing from the candidate as outlined in Requirement 6.1 above.

6.5 The Appeal Panel shall consider only:

- 6.5.1 the grounds of the request for the appeal;
- 6.5.2 any documents relevant to the decision against which the candidate has appealed;
- 6.5.3 such further material as the Appeal Panel may, in the exercise of its discretion, permit to be placed before it if it considers it necessary or desirable in the interests of justice to do so.

6.6 The candidate shall have the right to be heard in person or to make submissions in writing; and to be represented by the Student Association Academic Support Services Coordinator, the Student Association Welfare Coordinator, or another member of the University community not acting in a legal capacity, provided that any candidate to be so represented must notify the University Registrar at least 48 hours prior to the time set for the appeal.

6.7 The Appeal Panel shall have the power to allow or dismiss an appeal against the decision; or vary the decision of the Board of Postgraduate Studies Committee.

6.8 The Chair of the Appeal Panel shall notify the University Registrar forthwith of its decision and reasons and the University Registrar shall notify in writing the student within 14 days of the Appeal Panel's decision. The Chair of the Appeal Panel shall also advise the Board of Postgraduate Studies Committee of the outcome and any recommendations made by the Appeal Panel.

6.9 The Appeal Panel's decision shall be final.

MASTER OF INFORMATION TECHNOLOGY-MASTER OF BUSINESS ADMINISTRATION

see also Courses, Master of Information Technology-Master of Business Administration on page 293

Requirements for candidature

1. A person may enrol for the Master of Information Technology-Master of Business Administration if that person:
   - 1.1 has qualified at this or another University for an Australian Bachelors degree in Information Technology or a related discipline, provided that the faculty, on the recommendation of a Head of a School of the Faculty of Science, Engineering and Information Technology and the Faculty of Law, Business and the Creative Arts, is satisfied that the standard and the subjects of the previous studies are adequate preparation; or
   - 1.2 has qualified at this or another University for a Bachelor's degree, not in Information Technology nor in a related discipline, but which is considered by the faculty on the recommendation of the head of the appropriate school or faculty, to be adequate; or
   - 1.3 has completed the requirements for the Master of Information Technology or Master of Business Administration; or
   - 1.4 has other qualifications or practical experience recognised by the faculty as equivalent to Requirement 1.1, 1.2 or 1.3.

Program of study

2. Unless granted advanced standing for previous study, a student shall follow the course of study prescribed under Postgraduate Courses, to obtain 48 credit points.
3. The 48 credit points from requirement 2 shall consist of level 5 subjects, at least 21 credit points of which must be from CP subjects and at least 21 credit points of which must be LB subjects.
4. To complete a subject a student shall satisfy the written, practical and other examination requirements designated by the relevant Heads of Schools and approved by the relevant faculties.
5. Except with the approval of the relevant Pro-Vice-Chancellor, a student may not enrol for any subject until credit has been obtained for any prerequisite subject or subjects as listed in the Master Schedule of Subjects.
6. The normal duration of this degree is two years, commencing from the date of the first classes in the program. Full-time candidates shall normally complete the requirements of this degree within the normal duration.
7. When suitable block mode subjects are available, by approval of the Pro-Vice-Chancellor of the Faculty of Science, Engineering and Information Technology and the Pro-Vice-Chancellor of the Faculty of Law, Business and the Creative Arts, candidates may commence this degree at the start of a block mode subject providing that full-time candidates can still complete the requirements of the degree within the normal duration.

Advanced standing for previous study

8. Students transferring from the Graduate Certificate or Graduate Diploma of Information Technology or Business Administration or Master of Business Administration or Master of Information Technology may be awarded advanced standing for subjects studied under the relevant award, provided that award is relinquished.
9. Advanced standing of up to 12 credit points may be granted for previous postgraduate studies in a relevant discipline or for recognised prior learning in accordance with University policy.
10. A candidate who wishes to withdraw from the joint degree and convert their candidature to either the Master of Information Technology or Master of Business Administration, must complete the requirements of the degree in which they subsequently enrol.

MASTER OF INFORMATION TECHNOLOGY (EXTENDED)-MASTER OF BUSINESS ADMINISTRATION

see also Courses, Master of Information Technology (Extended)-Master of Business Administration on page 293

Requirements for candidature

1. A person may enrol for the Master of Information Technology (Extended)-Master of Business Administration if that person:
   - 1.1 has qualified at this or another University for an Australian Bachelors degree in Information Technology or a related discipline, provided that the faculty, on the recommendation of a Head of the School of Mathematics, Physics and Information Technology or the Faculty of Law, Business and the Creative Arts, is satisfied that the standard and the subjects of the previous studies are adequate preparation; or
   - 1.2 has qualified at this or another University for a Bachelors degree, not in Information Technology nor in a related discipline, but which is considered by the faculty on the recommendation of the head of the appropriate school, to be adequate preparation; or
   - 1.3 has other relevant qualifications (typically a 3-year full-time diploma in Information Technology) which is considered by the faculty on the recommendation of the head of the appropriate school, to be adequate preparation for the field of study selected; or
   - 1.4 has completed the requirements for the Master of Information Technology (Extended) or Master of Business Administration; or
   - 1.5 has other qualifications or practical experience recognised by the faculty as equivalent to Requirement 1.1, 1.2, 1.3 or 1.4.

Program of study

2. Unless granted advanced standing for previous study, a student shall follow the course of study prescribed under Postgraduate Courses, to obtain 60 credit points.
3. The 60 credit points from requirement 2 shall consist of 12 credit points of CP subjects as directed by the Head of the School of Mathematics, Physics and Information Technology to extend the knowledge of a particular student, as appropriate for the major(s) chosen. These may be undergraduate level subjects. The remaining 48 credit pointsmust be at postgraduate level and satisfy the requirements for the Master of Information Technology-Master of Business Administration award.
4. To complete a subject a student shall satisfy the written, practical and other examination requirements designated by the relevant Heads of Schools and approved by the relevant faculties.
5. Except with the approval of the relevant Pro-Vice-Chancellor, a student may not enrol for any subject until advanced standing has been obtained for any prerequisite subject or subjects as listed in the Master Schedule of Subjects.
6. The normal duration of this degree is 2.5 years, commencing from the date of the first classes in the program. Full-time candidates shall normally complete the requirements of this degree within the normal duration.
7. When suitable block mode subjects are available, by approval of the Pro-Vice-Chancellor of the Faculty of Science, Engineering and Information Technology and the Pro-Vice-Chancellor of the Faculty of Law, Business and the Creative Arts, candidates may commence this degree at the start of a block mode subject providing that full-time candidates can still complete the requirements of the degree within the normal duration.

Advanced standing for previous study

8. Students transferring from the Graduate Certificate or Graduate Diploma of Information Technology or Business Administration, or the Master of Information Technology (Extended) or the Master of Business Administration may be awarded advanced standing for subjects studied under the relevant award, provided that award is relinquished.
9. Advanced standing of up to 12 credit points may be granted for relevant previous postgraduate study or for recognised prior learning in accordance with University policy.
10. A candidate who wishes to withdraw from the joint degree and convert their candidature to either the Master of Information Technology (Extended) or Master of Business Administration, must complete the requirements of the degree in which they subsequently enrol.

MASTER OF SCIENCE

Enrolment in the degree

1. The degree of Master of Science may be undertaken in the schools and centres in the Faculty of Science, Engineering and Information Technology or the Faculty of Medicine, Health and Molecular Sciences listed in Schedule A below. The degree shall be awarded in recognition of research or alternatively for adequate progress in formal coursework combined with research.
2. A person may enrol for the degree of Master of Science if that person has:

2.1 qualified for the degree of Bachelor of Science with Honours of this University with Class I or Class II Honours; or

2.2 qualified at this University for a Master of Applied Science with at least a 12-credit point research option with a grade of Credit or above or with research publications deemed to be of equivalent value; or

2.3 obtained from another university, qualifications approved by the faculty as equivalent to the conditions set out in Requirement 2.1; or

2.4 passed such qualifying examinations, at least one year subsequent to qualifying for the degree of Bachelor of Science or its equivalent, as may be determined by the faculty on the recommendation of the appropriate Head of School; or

2.5 submitted as an exceptional case such other evidence of academic and professional attainments as meets with the approval of the faculty.

3. A student shall be designated as a full-time student or as a part-time student by the faculty upon recommendation of the Head of School in which the student is to be registered.

Supervision of candidates

4.1 Before permitting a person to enrol for the degree, the faculty shall be satisfied that adequate facilities are available for the studies proposed.

4.2 A student when enrolled, shall be registered in the appropriate school and assigned to a supervisor who shall be a member of the academic staff. One or more associate supervisors may be appointed on account of their special knowledge of the student's approved program of study or in order to ensure effective supervision of the candidate during any periods spent external to the University.

4.3 Unless specialist supervision in the particular field of study can be provided by the University, study in an environment external to the University will not be acceptable as a basis for registration for the degree.

4.4 Part-time students must attend the University as required by their supervisors and approved by the faculty. Applications for enrolment will be considered only if the faculty is satisfied that the attendance requirements can be met.

4.5 Periodically the supervisor may be requested by the Head of School to report on the student's work. If, in the opinion of the Head of School, the student's progress is unsatisfactory the Head may advise the faculty, which may terminate the candidature or take such other action as it deems necessary.

4.6 A student may be required by the Head of School to attend specified courses of study.

Duration and Progress

5.1 The student shall undertake a course of study leading to the submission of a thesis for examination. The thesis may not be submitted by a student earlier than one calendar year nor later than two (for a full-time student) or four (for a part-time student) calendar years after enrolment, except that in special circumstances the faculty may grant an extension of the relevant period.

5.2 A minor portion of the thesis may cover work undertaken before enrolment provided that this work has not been used in gaining another academic qualification.

5.3 Published contributions may be submitted to support or to form part of the thesis.

5.4 Students should present a progress seminar to members of the relevant school within six months of enrolment. The Head of School will report to the Pro-Vice-Chancellor. All students shall present a progress report at the completion of each 12 months of candidature unless the thesis is ready for submission within eight weeks of this period.

5.5 Students may at the discretion of the Pro-Vice-Chancellor on the advice of the appropriate school be granted an extension or suspension. The period for an extension will normally be up to six months for a full-time candidate and 12 months for a part-time candidate. Suspension of candidature will not normally exceed 12 months.

Examination

6.1 On completion of the thesis an original and two copies of the thesis[2], together with any separate published material, shall be submitted to the Registrar of the University.

6.2 The faculty, on the advice of the Head of School in which the student is registered, shall appoint two examiners of whom at least one shall be external to the University.

6.3 The faculty, on the recommendation of the examiners, may require the student to undertake a written or an oral examination or both.

6.4 The faculty, on considering the reports of the examiners, may recommend the award of the degree, refuse the degree, appoint another examiner or require the student to resubmit the thesis either re-written or including further research material. A student who fails to satisfy the examiners after resubmission of the thesis, shall not again be eligible for candidature for a Master's degree in the same discipline.

6.5 Grade awarded to overall degree to be pass or fail only.

6.6 All corrections if requested are to be made:

6.6.1 if minor within three months of the date of despatch of the advice to the student; or

6.6.2 if major within 12 months of the date of despatch of the advice to the student.

6.7 Award of the degree to be conferred when the following condition has been met: an acid free copy plus supporting documentation of the thesis has been deposited in the Library or a written guarantee has been provided by the school concerned that the said school holds all the material necessary for preparation of said copy.

Schedule A
Schools/Disciplines

Anthropology, Archaeology and Sociology
Earth and Environmental Sciences
Marine and Tropical Biology
Mathematics, Physics and Information Technology
Medicine
Nursing, Midwifery and Nutrition
Pharmacy and Molecular Sciences
Public Health, Tropical Medicine and Rehabilitation Sciences
Veterinary and Biomedical Sciences

MINERALS GEOSCIENCE MASTERS

see also Courses, Minerals Geoscience Masters on page 289

1. A candidate, unless admitted with advanced status, shall follow an approved course of study to obtain 48 credit points. The normal time for completion is two years full-time study or four years part-time study.

2. The minimum of 48 credit points from Requirement 1 shall be obtained by passing subjects from Science level 5 subjects from the Master Schedule of Subjects according to the following:

2.1 24 credit points from James Cook University six credit point subjects;

2.2 a minimum of 12 credit points from external subjects offered by the Minerals Geoscience Training Network as prescribed in Postgraduate Courses;

2.3 an optional six or 12 credit points of research dissertation;

2.4 a maximum of 24 credit points for relevant past experience and study not attributed to another degree program;

2.5 other combinations by permission of the Pro-Vice-Chancellor.

Period of candidature

3. A student shall normally complete the degree in two years of study.

4. A student shall follow a course of study prescribed in Postgraduate Courses.

2. The form of presentation of dissertation or thesis is available at the University Library.

POSTGRADUATE DIPLOMA OF COMPUTATIONAL ENGINEERING

see also Courses, Postgraduate Diploma of Computational Engineering on page 287

Note: The Postgraduate Diploma of Computational Engineering is not offered in 2009. No new enrolments will be accepted in this course.

1. The degree of Postgraduate Diploma of Computational Engineering shall consist of 24 credit points of coursework.

Entry requirements

2. A person may enrol for the degree of Postgraduate Diploma of Computational Engineering if that person:
   - 2.1 has completed a Bachelor of Engineering with Honours, a Postgraduate Certificate, or a Bachelor of Engineering with a minimum of two years of experience in aerospace, automotive, biomedical, civil, environmental, manufacturing, materials, mechanical or mining and/or additional education experience, such as the Research Methods course, which the Head of the School of Engineering deems as a demonstration of research potential; or
   - 2.2 has completed a Bachelor's degree in an allied field (eg Applied Mathematics, Physics, Chemical Engineering), which is considered adequate by the faculty, on the recommendation of the Head of the School of Engineering; or
   - 2.3 has a qualification from another faculty or institution accepted by the faculty as equivalent to Requirement 2.1 or 2.2 and with the approval of the Head of the School of Engineering.

Course of study

3.1 Unless granted advanced standing for previous study, a student shall follow the course of study prescribed for the specified program under Postgraduate Courses, to obtain 24 credit points of coursework.

3.2 Each student shall follow a course of advanced study and investigation including self-study, attending lectures and tutorial classes as prescribed for each subject.

Advanced standing for previous study

4.1 A student who has completed the requirements for the Postgraduate Certificate of Computational Engineering may be given full advanced standing for the credit points in the Postgraduate Certificate towards the Postgraduate Diploma of Computational Engineering provided the Postgraduate Certificate of Computational Engineering is surrendered.

4.2 A student who, at another institution of higher education, has passed a postgraduate subject which is deemed by the School of Engineering to be equivalent to a subject set out in the specified program shown under Postgraduate Courses, may be granted advanced standing for that subject, up to a maximum of six credit points.

Duration

5. The normal duration for the degree is one year full-time or two years part-time.

Assessment

6.1 Assessment may include any or all of the following: assignments, a research project, report and oral presentation, quizzes, tests and examinations.

6.2 A student who has complied with the provisions of these Requirements and all other relevant Statutes and Requirements of the University shall be recommended by the faculty for the award of Postgraduate Diploma of Computational Engineering.

GRADUATE DIPLOMA OF ASTRONOMY

see also Courses, Graduate Diploma of Astronomy on page 286

1. A Graduate Diploma of Astronomy may be undertaken in the Centre for Astronomy in the School of Mathematics, Physics and Information Technology.
2. A person may enrol for the Graduate Diploma of Astronomy if that person:
   - 2.1 has qualified at this or another University for a Bachelors degree, provided that the faculty, on the recommendation of the Director of the Centre for Astronomy, is satisfied that the standard and the subjects of the previous studies are adequate for the field of study being selected; or
   - 2.2 has completed the requirements of the Graduate Certificate of Astronomy; or
   - 2.3 has other qualifications or practical experience recognised by the faculty as equivalent to Requirement 2.1 or 2.2.

Period of the candidature

3. A student shall normally complete the requirements of the Graduate Diploma in one year (two teaching periods) of full-time or equivalent study. The maximum duration shall be two years full-time equivalent (four teaching periods).

Evaluation

4. A candidate shall normally complete 24 credit points made up of subjects provided in the Schedule. Any variation to this must be approved by the Director of the Centre for Astronomy.
5. Appeal procedures are as per the University appeals procedures.
6. A student who has complied with the provisions of these requirements and all other Statutes and Requirements of the University shall be recommended by the faculty for the award of the Graduate Diploma of Astronomy.

Advanced standing for previous studies

7. A student who has completed the requirements for the Graduate Certificate of Astronomy may be given full advanced standing for the credit points in the Graduate Certificate towards the Graduate Diploma of Astronomy provided the Graduate Certificate of Astronomy award is surrendered.
8. A student who, at this or another institution of higher education, has passed a subject which is deemed by the faculty, on the advice of the Director of the Centre for Astronomy, to be equivalent to a subject set out in the specified program shown under Postgraduate Courses may be granted advanced standing for that subject by the faculty, up to a maximum of 12 credit points.

Schedule

AS5011:06	Modern Astrophysics
AS5012:06	Astronomy Instrumentation
AS5021:06	The Solar System
AS5022:06	Galactic Astronomy and Cosmology

GRADUATE DIPLOMA OF BIOTECHNOLOGY

see also Courses, Graduate Diploma of Biotechnology on page 286

1. A person may enrol for the Graduate Diploma of Biotechnology if that person:
   - 1.1 has qualified for the degree of Bachelor of Science or Bachelor of Biomedical Science either from this or from another University provided that the faculty, on the recommendation of the Heads of the Schools concerned, is satisfied that the standard and the subjects of the previous studies are adequate; or
   - 1.2 has qualifications recognised by the faculty as equivalent to the conditions of Requirement 1.1; or
   - 1.3 has alternative qualifications deemed by the faculty to be appropriate for entry to the course.
2. A student shall pursue studies to obtain 24 credit points. The normal period of candidature shall be one year of full-time study or two years of part-time study.
3. The student will follow a course of study approved by the relevant Head of School and the Pro-Vice-Chancellor of the faculty. The program may include subjects from another discipline.
4. Assessment procedures may include any or all of the following: assignments and papers, a research project and report and examinations.
5. Except with the approval of the faculty, there shall be no re-examination.
6. A student who has complied with the provisions of these Requirements and all other relevant Statutes and Requirements of the University shall be recommended by the faculty for the award of the Graduate Diploma of Biotechnology.
7. Appeal procedures are as per normal University procedures for Masters requirements.

GRADUATE DIPLOMA OF INFORMATION TECHNOLOGY

see also Courses, Graduate Diploma of Information Technology on page 293

Requirements for candidature

1. A person may enrol for the Graduate Diploma of Information Technology if that person:
   - 1.1 has qualified at this or another University for a Bachelors degree in Information Technology or a related discipline, provided that the faculty, on the recommendation of a Head of a School of the Faculty of Science, Engineering

and Information Technology, is satisfied that the standard and the subjects of the previous studies are adequate preparation for the field of study being selected; or

1.2 has qualified at this or another University for a Bachelors degree not in Information Technology nor in a related discipline but which is considered by the faculty, on the recommendation of the head of the appropriate school, to be adequate preparation for the field of study being selected; or

1.3 has other relevant qualifications (typically a three year full-time diploma in Information Technology) which is considered by the faculty, on the recommendation of the head of the appropriate school, to be adequate preparation for the field of study being selected; or

1.4 has completed the requirements for the Graduate Certificate of Information Technology in the field of study being selected; or

1.5 has other qualifications or practical experience recognised by the faculty as equivalent to Requirement 1.1, 1.2, 1.3, or 1.4.

Program of study

2. Unless granted advanced standing for previous study, a student shall follow the course of study prescribed under Postgraduate Courses, to obtain 24 credit points in one of the fields of study specified in Schedule A below.
3. The 24 credit points from requirement 2 shall consist of level 5 subjects, at least 12 credit points of which must be from CP subjects.
4. To complete a subject a student shall satisfy the written, practical and other examination requirements designated by the relevant Head of School and approved by the faculty.
5. Except with the approval of the Pro-Vice-Chancellor, a student may not enrol for any subject until credit has been obtained for any prerequisite subject or subjects as listed in the Master Schedule of Subjects.
6. The normal duration of this degree is one year, commencing from the date of the first classes in the program. Full-time candidates shall normally complete the requirements of this degree within the normal duration.
7. When suitable block mode subjects are available, by approval of the Pro-Vice-Chancellor of the Faculty of Science, Engineering and Information Technology, candidates may commence this degree at the start of a block mode subject providing that full-time candidates can still complete the requirements of the degree within the normal duration.

Advanced standing for previous study

8. Students transferring from the Graduate Certificate of Information Technology may be awarded advanced standing for subjects studied under the Graduate Certificate provided that award is surrendered.
8. Advanced standing of up to six credit points may be granted for postgraduate level subjects in a relevant discipline or for recognised prior learning in accordance with University policy.

Schedule A – Fields of Study

E-Business
Industry Research and Development
Multimedia Game Development
Networking

GRADUATE DIPLOMA OF SCIENCE

The Graduate Diploma of Science may be undertaken in the schools, centres and institutes listed in Schedule A below.

1. A person may enrol for the Graduate Diploma of Science course if that person:
   1.1 has qualified for the degree of Bachelor of Science either from this or from another University provided that the faculty, on the recommendation of the Heads of the Schools concerned, is satisfied that the standard and the subjects of the previous studies are adequate; or
   1.2 has qualifications recognised by the faculty as equivalent to the conditions of Requirement 1.1; or
   1.3 has alternative qualifications deemed by the faculty to be appropriate for entry to the course.
2. A student shall pursue studies to obtain 24 credit points of level 5 subjects. The normal period of candidature shall be one year of full-time study or two years of part-time study.
3. The normal period of candidature shall be one year of full-time study or two years of part-time study. The maximum duration shall be four years.
4. A student shall select one of the disciplines offered in the schools, centres and institutes listed in Schedule A, or an approved combination of those disciplines and follow the course of study prescribed.
5. Assessment procedures may include any or all of the following: assignments and papers, a research project and report and examinations.
6. Except with the approval of the faculty, there shall be no re-examination.
7. A student who has qualified for the Graduate Diploma of Science in one discipline may enrol in a further discipline in a subsequent year.
8. A student who has complied with the provisions of these Requirements and all other relevant Statutes and Requirements of the University shall be recommended by the faculty for the award of the Graduate Diploma of Science.
9. Appeal procedures are as per normal University procedures for Master's Requirements.

Schedule A
Schools

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

Centre

Tropical Urban and Regional Planning

POSTGRADUATE CERTIFICATE OF COMPUTATIONAL ENGINEERING

see also Courses, Postgraduate Certificate of Computational Engineering on page 288

Note: The Postgraduate Certificate of Computational Engineering is not offered in 2009. No new enrolments will be accepted in this course.

1. The degree of Postgraduate Certificate of Computational Engineering shall consist of 12 credit points of coursework.

Entry requirements

2. A person may enrol for the degree of Postgraduate Certificate of Computational Engineering if that person:
   2.1 has completed a Bachelor of Engineering with Honours or a Bachelor of Engineering with a minimum of two years of experience in aerospace, automotive, biomedical, civil, environmental, manufacturing, materials, mechanical or mining and/or additional education experience, such as the Research Methods course, which the Head of the School of Engineering deems as a demonstration of research potential; or
   2.2 has completed a Bachelor's degree in an allied field (eg Applied Mathematics, Physics, Chemical Engineering), which is considered adequate by the faculty, on the recommendation of the Head of the School of Engineering; or
   2.3 has a qualification from another faculty or institution accepted by the faculty as equivalent to Requirement 2.1 or 2.2 and with the approval of the Head of the School of Engineering.

Course of study

3.1 Unless granted advanced standing for previous study, a student shall follow the course of study prescribed for the specified program under Postgraduate Courses, to obtain 12 credit points of coursework.

3.2 Each student shall follow a course of advanced study and investigation including self-study, attending lectures and tutorial classes as prescribed for each subject.

Advanced standing for previous study

4. A student who, at another institution of higher education, has passed a postgraduate subject which is deemed by the School of Engineering to be equivalent to a subject set out in the specified program shown under Postgraduate Courses, may be granted advanced standing for that subject, up to a maximum of three credit points.

Duration

5. The normal duration for the degree is one teaching period full-time or two teaching periods part-time.

Assessment

6.1 Assessment may include any or all of the following: assignments, a research project, report and oral presentation, quizzes, tests and examinations.

6.2 A student who has complied with the provisions of these Requirements and all other relevant Statutes and Requirements of the University shall be recommended by the faculty for the award of Postgraduate Certificate of Computational Engineering.

GRADUATE CERTIFICATE OF ASTRONOMY

see also Courses, Graduate Certificate of Astronomy on page 286

1. A Graduate Certificate of Astronomy may be undertaken in the Centre for Astronomy in the School of Mathematics, Physics and Information Technology.
2. A person may enrol for the Graduate Certificate of Astronomy if that person:
   - 2.1 has qualified at this or another University for a Bachelors degree, provided that the faculty, on the recommendation of the Director of the Centre for Astronomy, is satisfied that the standard and the subjects of the previous studies are adequate for the field of study being selected; or
   - 2.2 has other qualifications or practical experience recognised by the faculty as equivalent to Requirement 2.1.

Period of the candidature

3. A student shall normally complete the requirements of the Graduate Certificate in one teaching period of full-time or equivalent study . The maximum duration shall be one year full-time equivalent (two teaching periods).

Evaluation

4. A candidate shall normally complete 12 credit points made up of the subjects provided in the Schedule. Any variation to this must be approved by the Director of the Centre for Astronomy.
5. Appeal procedures are as per the University appeals procedures.
6. A student who has complied with the provisions of these requirements and all other Statutes and Requirements of the University shall be recommended by the faculty for the award of the Graduate Certificate of Astronomy.

Advanced standing for previous studies

7. A student who, at this or another institution of higher education, has passed a subject which is deemed by the faculty on the advice of the Director of the Centre for Astronomy, to be equivalent to a subject set out in the specified program shown under Postgraduate Courses, may be granted advanced standing for that subject by the faculty, up to a maximum of 6 credit points.

Schedule

AS5011:06	Modern Astrophysics
AS5012:06	Astronomy Instrumentation

GRADUATE CERTIFICATE OF BIOTECHNOLOGY

see also Courses, Graduate Certificate of Biotechnology on page 287

1. A person may enrol for the Graduate Certificate of Biotechnology if that person:
   - 1.1 has qualified for the degree of Bachelor of Science or Bachelor of Biomedical Science either from this or from another University provided that the faculty, on the recommendation of the Heads of the Schools concerned, is satisfied that the standard and the subjects of the previous studies are adequate; or
   - 1.2 has qualifications recognised by the faculty as equivalent to the conditions of Requirement 1.1; or
   - 1.3 has alternative qualifications deemed by the faculty to be appropriate for entry to the course.
2. A student shall pursue studies to obtain 12 credit points. The minimum period of candidature shall be one teaching period of full-time study or two teaching period of part-time study.
3. The student will follow a course of study approved by the relevant Head of School and the Pro-Vice-Chancellor of the faculty. The program may include subjects from another discipline.
4. Assessment procedures may include any or all of the following: assignments and papers, a research project and report and examinations.
5. A student who has complied with the provisions of these requirements and all other relevant Statutes and Requirements of the University shall be recommended by the faculty for the award of the Graduate Certificate of Biotechnology.
6. Appeal procedures are as per normal University procedures for Masters requirements.

GRADUATE CERTIFICATE OF INFORMATION TECHNOLOGY

see also Courses, Graduate Certificate of Information Technology on page 293

Requirements for candidature

1. A person may enrol for the Graduate Certificate of Information Technology if that person:
   - 1.1 has qualified at this or another University for a Bachelors degree in Information Technology or a related discipline provided that the faculty, on the recommendation of a Head of a School of the Faculty of Science, Engineering and Information Technology, is satisfied that the standard and the subjects of the previous studies are adequate preparation for the field of study selected; or
   - 1.2 has qualified at this or another University for a Bachelors degree, not in Information Technology nor in a related discipline, but which is considered by the faculty, on the recommendation of the head of the appropriate school, to be adequate preparation for the field of study selected; or
   - 1.3 has other relevant qualifications (typically a three year full-time diploma in Information Technology or a related discipline) which is considered by the faculty, on the recommendation of the head of the appropriate school, to be adequate preparation for the field of study selected; or
   - 1.4 has other qualifications or practical experience recognised by the faculty as equivalent to Requirement 1.1, 1.2, or 1.3.

Program of study

2. Unless granted advanced standing for previous study, a student shall follow the course of study prescribed under Postgraduate Courses, to obtain 12 credit points in one of the fields of study specified in Schedule A below.
3. The 12 credit points from requirement 2 shall consist of level 5 subjects, at least six credit points of which must be from CP subjects.
4. To complete a subject a candidate shall satisfy the written, practical and other examination requirements designated by the relevant Head of School and approved by the faculty.
5. Except with the approval of the Pro-Vice-Chancellor, a student may not enrol for any subject until credit has been obtained for any prerequisite subject or subjects as listed in the Master Schedule of Subjects.
6. The normal duration of this degree is 0.5 years, commencing from the date of the first classes in the program. Full-time candidates shall normally complete the requirements of this degree within the normal duration.

Advanced standing for previous study

7. Advanced standing of up to three credit points may be granted for postgraduate level subjects in a relevant discipline or for recognised prior learning in accordance with University policy.

Schedule A – Fields of Study

E-Business
Industry Research and Development
Multimedia Game Development
Networking

GRADUATE CERTIFICATE OF SCIENCE

The Graduate Certificate of Science may be undertaken in the schools, centres and institutes listed in Schedule A below.

1. A person may enrol for the Graduate Certificate of Science course if that person:
   - 1.1 has qualified for the degree of Bachelor of Science either from this or from another university provided that the faculty, on the recommendation of the Heads of the Schools concerned, is satisfied that the standard and the subjects of the previous studies are adequate; or
   - 1.2 has qualifications recognised by the faculty as equivalent to the conditions of Requirement 1.1; or

1.3 has alternative qualifications deemed by the faculty to be appropriate for entry to the course.

2. A student shall pursue studies to obtain 12 credit points of level 5 subjects.
3. The minimum period of candidature shall be one teaching period of full-time study or two teaching periods of part-time study. The maximum duration shall be two years.
4. A student shall select one of the disciplines offered in the schools, centres and institutes listed in Schedule A. The student will follow a course of study approved by the Head of the School, Centre or Institute. The program may include subjects from another discipline.
5. Assessment procedures may include any or all of the following: assignments and papers, a research project and report and examinations.
6. A student who has qualified for the Graduate Certificate of Science in one discipline may enrol in a further discipline in a subsequent year.
7. A student who has complied with the provisions of these requirements and all other relevant Statutes and Requirements of the University shall be recommended by the faculty for the award of the Graduate Certificate of Science.
8. Appeal procedures are as per normal university procedures for Masters requirements.

Schedule A
Schools

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

POSTGRADUATE COURSES

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

Contents

AQUACULTURE

The Master of Applied Science, Graduate Diploma of Science and Graduate Certificate of Science in Aquaculture provide training in the concepts and methods of aquaculture, emphasising tropical aquaculture generally, as well as the development and practice of the industry in Australia.

MASTER OF APPLIED SCIENCE

Townsville

Students complete 36 credit points for the Master of Applied Science in Aquaculture as follows:

Core Subjects

AQ5002:03	Aquaculture: Feeds and Nutrition
AQ5003:03	Aquaculture: Propagation
AQ5004:03	Aquaculture: Genetics and Stock Improvement
AQ5005:03	Aquaculture: Management of Culture Systems
AQ5006:03	Aquaculture: Principles and Practices
AQ5007:03	Aquatic Animal Ecophysiology
AQ5009:03	Aquaculture of Tropical Species
BS5001:03*	Quantitative Methods in Biology

* Compulsory except where a student has passed a subject which is deemed to be equivalent.

Plus

12 credit points of subjects satisfying the award requirements for the Master of Applied Science from:

AQ5008:03	Aquaculture: Systems Design
AQ5010:06	Aquaculture: Production and Evaluation Report
MB5003:03	Fisheries Science
MB5300:03	Sampling and Experimental Design
MB5310:03	Fisheries Biology, Assessment and Management
TV5240:03	Aquatic Pathobiology

or

Level 5 AQ subjects to complete the award requirements of 36 credit points. Subjects may, with the approval of the School of Marine and Tropical Biology, include a maximum of 12 credit points of research subjects.

GRADUATE DIPLOMA OF SCIENCE

Townsville

Students complete 24 credit points for the Graduate Diploma of Science in Aquaculture as follows:

Core Subject

BS5001:03*	Quantitative Methods in Biology

Plus

21 credit points from:

AQ5002:03	Aquaculture: Feeds and Nutrition
AQ5003:03	Aquaculture: Propagation
AQ5004:03	Aquaculture: Genetics and Stock Improvement
AQ5005:03	Aquaculture: Management of Culture Systems
AQ5006:03	Aquaculture: Principles and Practices
AQ5007:03	Aquatic Animal Ecophysiology
AQ5008:03	Aquaculture: Systems Design
AQ5009:03	Aquaculture of Tropical Species

* Compulsory except where a student has passed a subject which is deemed to be equivalent.

GRADUATE CERTIFICATE OF SCIENCE

Townsville

Students complete 12 credit points for the Graduate Certificate of Science in Aquaculture as follows:

Core Subject

BS5001:03*	Quantitative Methods in Biology

or

MB5300:03*	Sampling and Experimental Design
AQ5002:03	Aquaculture: Feeds and Nutrition

or

AQ5003:03	Aquaculture: Propagation

AQ5004:03 Aquaculture: Genetics and Stock Improvement
or
AQ5005:03 Aquaculture: Management of Culture Systems

Plus

Three credit points from:
AQ5006:03 Aquaculture: Principles and Practices
AQ5007:03 Aquatic Animal Ecophysiology
AQ5008:03 Aquaculture: Systems Design
AQ5009:03 Aquaculture of Tropical Species

* Compulsory except where a student has passed a subject which is deemed to be equivalent.

MASTER OF SCIENCE AND DOCTOR OF PHILOSOPHY

Students can study for the degrees of Master of Science and Doctor of Philosophy under the supervision of one or more of the academic or research staff of Aquaculture.

ARCHAEOLOGY

Postgraduate study towards the award of Master of Science may be undertaken within the School of Anthropology, Archaeology and Sociology.

ASTRONOMY

The JCU Centre for Astronomy offers full-time and part-time research degrees and other coursework programs. The Graduate Certificate of Astronomy, Graduate Diploma of Astronomy, Master of Astronomy and Doctor of Astronomy are delivered totally over the Internet. Details can be found on the Centre's website at www.jcu.edu.au/astronomy. In addition, students graduating with Bachelor of Science (Honours) at a suitably high level from JCU or another University may apply to carry out research for the on-campus degrees of Master of Science or Doctor of Philosophy.

DOCTOR OF ASTRONOMY

The Doctor of Astronomy (delivered via the Internet) consists of coursework study and a research thesis. Admission to the course requires an Australian honours degree or equivalent in physical science or a related discipline - see the Centre for Astronomy website:
http://www.jcu.edu.au/astronomy

The course is normally three and a half years of full-time study or seven years of part-time study.

CORE SUBJECTS

AS5011:06 Modern Astrophysics
AS5012:06 Astronomy Instrumentation
PD7605 Professional Doctorate Research Thesis (Astronomy)

MASTER OF ASTRONOMY

The Master of Astronomy (delivered via the Internet) consists of coursework study and research. Admission to the course requires a degree or equivalent in physical science or a related discipline - see the Centre for Astronomy website:
http://www.jcu.edu.au/astronomy

The course is one and a half academic years of full-time study or three years of part-time study.

CORE SUBJECTS

AS5011:06 Modern Astrophysics
AS5012:06 Astronomy Instrumentation
AS5021:06 The Solar System
AS5022:06 Galactic Astronomy and Cosmology
AS5042:06 Pilot Research Project

Plus

6 credit points from the following to satisfy the Award Requirements for the Master of Astronomy
AS5031:06 Special Astronomy Topic A
AS5032:03 Special Astronomy Topic B
AS5033:03 Special Astronomy Topic C
AS5041:06 Astronomy Literature Review
AS5051:06 Scientific and Technological Developments in Astronomy

GRADUATE DIPLOMA OF ASTRONOMY

The Graduate Diploma of Astronomy (delivered via the Internet) consists of coursework study only. Admission to the course requires a degree or equivalent in physical science or a related discipline- see the Centre for Astronomy website:
http://www.jcu.edu.au/astronomy

The course is one academic year of full-time study or two years of part-time study.

CORE SUBJECTS

AS5011:06 Modern Astrophysics
AS5012:06 Astronomy Instrumentation
AS5021:06 The Solar System
AS5022:06 Galactic Astronomy and Cosmology

GRADUATE CERTIFICATE OF ASTRONOMY

The Graduate Certificate of Astronomy (delivered via the Internet) consists of coursework study only. Admission to the course requires a degree or equivalent in physical science or a related discipline - see the Centre for Astronomy website:
http://www.jcu.edu.au/astronomy

The course is a half year of full-time study or one year of part-time study.

CORE SUBJECTS

AS5011:06 Modern Astrophysics
AS5012:06 Astronomy Instrumentation

MASTER OF APPLIED SCIENCE AND DOCTOR OF PHILOSOPHY

The Centre for Astronomy offers a research Masters degree and PhD for on-campus students. Research areas include:

Astrophysics

Astronomy Education

Quantitative Astronomy History

MASTER OF ASTRONOMY EDUCATION

Note: The Master of Astronomy Education is disestablished from 2009. No new enrolments will be accepted in this course.

The Master of Astronomy Education is delivered via the Internet and is available to a world-wide student base. It would be of particular interest to graduate teachers.

Students develop content knowledge in a range of astronomy subjects, construct and evaluate teaching units in astronomy suitable for their teaching levels in schools and use astronomy resources on the web for teaching-unit development.

CORE SUBJECTS

AS5011:06 Modern Astrophysics
AS5012:06 Astronomy Instrumentation
AS5021:06 The Solar System
AS5022:06 Galactic Astronomy and Cosmology

Plus

12 credit points of subjects satisfying the Award Requirements for the Master of Astronomy Education.
ED5091:03 Individual Subject
ED5190:03 Introduction to Educational Research
ED5812:03 Teaching and Learning with New ICTs
ED5820:03 Learning Technology in Schools
ED5881:03 Shaping Curriculum - Construction, Implementation and Review

BIOTECHNOLOGY

GRADUATE DIPLOMA OF BIOTECHNOLOGY

Townsville

The Graduate Diploma of Biotechnology is designed to allow science graduates to undertake specialist study in the knowledge, understanding, issues and application of biological products in modern biotechnology. The course is two teaching periods full time or four

teaching periods part time. Admission to the course requires a Bachelor of Science, Bachelor of Applied Science or other qualifications deemed appropriate by the faculty.

Within the broad framework of the Award Requirements, each student's program, including the relative component of coursework and research, can be tailored to the individual student's background and requirements.

Prospective students should consult the Course Coordinator.

CORE SUBJECTS

BC5201:03 Biotechnology
BZ5420:03 Genetics for Biology
BZ5450:03 Ecological and Conservation Genetics

Plus

9 credit points from:
AQ5004:03 Aquaculture: Genetics and Stock Improvement
BC5101:03 Genes, Gameness and Development
BC5102:03 Advanced Cell Biology
MI5000:03 Epidemiology
MI5003:03 Advanced Marine Microbiology
MI5021:03 Advanced Clinical Microbiology
MI5031:03 Advanced Aquatic Pathobiology
TV5120:03 Advanced Microbiology and Immunology
including a maximum of 6 credit points from:
BC5202:03 Special Topics in Biochemistry and Molecular Biology
BZ5501:03 Special Topic 1
BZ5502:03 Special Topic 2
BZ5503:03 Literature Review

Plus

Level 5 AG, AQ, BC, BZ, MI, TV subjects to complete the award requirements of 24 credit points.

GRADUATE CERTIFICATE OF BIOTECHNOLOGY

Townsville

The Graduate Certificate of Biotechnology is designed to allow science graduates to undertake specialist study in the knowledge, understanding, issues and application of biological products in modern biotechnology. The course is one teaching period full time or two teaching periods part time. Admission to the course requires a Bachelor of Science, Bachelor of Applied Science or other qualifications deemed appropriate by the faculty.

CORE SUBJECTS

BC5101:03 Genes, Genomes and Development
or
BC5201:03 Biotechnology

AQ5004:03 Aquaculture: Genetics and Stock Improvement
or
BZ5450:03 Ecological and Conservation Genetics

Plus

3 credit points from:
BC5102:03 Advanced Cell Biology
BZ5420:03 Genetics for Biology
MI5000:03 Epidemiology
MI5003:03 Advanced Marine Microbiology
MI5031:03 Advanced Aquatic Pathobiology
TV5120:03 Advanced Microbiology and Immunology

Plus

Level 5 AQ, BC, BZ, MI, TV subjects to complete the award requirements of 12 credit points.
A maximum of 3 credit points of subjects outside the above may be taken with the approval of the School of Marine and Tropical Biology.

BOTANY

(See Tropical Plant Sciences)

CHEMICAL ENGINEERING

(See Engineering)

CIVIL AND ENVIRONMENTAL ENGINEERING

(See Engineering)

COMPUTATIONAL ENGINEERING

MASTER OF COMPUTATIONAL ENGINEERING

Note: The Master of Computational Engineering is not offered in 2009. No new enrolments will be accepted in this course.

Requirements for the award may be completed by choosing subjects from the schedule below in one of the three following ways:

(1) In addition to the three compulsory coursework subjects, students are required to select seven of the nine elective coursework subjects and undertake 6 credit points of research.
(2) In addition to the three compulsory coursework subjects, students are required to select five of the nine elective coursework subjects and undertake 12 credit points of research.
(3) Students complete the three compulsory coursework subjects and all nine of the elective coursework subjects without undertaking any research.

Schedule

COMPULSORY SUBJECTS

EG5501:03 Numerical Methods
EG5502:03 Solid Mechanics
EG5504:03 Finite Element Methods

ELECTIVE SUBJECTS[1]

EG5500:06 Computational Engineering Project (6 credit points)
EG5503:03 Fluid Mechanics
EG5511:03 Computational Plasticity
EG5512:03 Non Linear Continuum Mechanics
EG5521:03 Computational Fluid Dynamics
EG5531:03 FEM in Soil and Rock Mechanics
EG5532:03 Porous Media Mechanics
EG5541:03 Discrete Element Modelling
EG5551:03 Transient and Dynamic Analysis
EG5552:03 Plates and Shells
EG5600:12 Computational Engineering Project (12 credit points)

1. Elective subjects are offered on condition that there are a sufficient number of enrolments.

MASTER OF COMPUTATIONAL ENGINEERING (BRIDGING)

Note: The Master of Computational Engineering (Bridging) is not offered in 2009. No new enrolments will be accepted in this course.

This program incorporates the Master of Computational Engineering with an additional 12 credit points of bridging subjects, enabling candidates, who would otherwise not qualify, to gain entry into the Master of Computational Engineering. Bridging subjects will be allocated by the Head of the School of Engineering, depending on the qualifications and experience of individual candidates. Upon successful completion of these selected subjects, candidates will progress through the Master of Computational Engineering course of study.

POSTGRADUATE DIPLOMA OF COMPUTATIONAL ENGINEERING

Note: The Postgraduate Diploma of Computational Engineering is not offered in 2009. No new enrolments will be accepted in this course.

This 24 credit point award may be completed in a 12 month period by undertaking the three compulsory coursework subjects and choosing five of the elective coursework subjects from the schedule below.

Schedule

COMPULSORY SUBJECTS

EG5501:03 Numerical Methods
EG5502:03 Solid Mechanics
EG5504:03 Finite Element Methods

ELECTIVE SUBJECTS[1]

EG5503:03 Fluid Mechanics
EG5511:03 Computational Plasticity
EG5512:03 Non Linear Continuum Mechanics
EG5521:03 Computational Fluid Dynamics

EG5531:03 FEM in Soil and Rock Mechanics
EG5532:03 Porous Media Mechanics
EG5541:03 Discrete Element Modelling
EG5551:03 Transient and Dynamic Analysis
EG5552:03 Plates and Shells

1. Elective subjects are offered on condition that there are a sufficient number of enrolments.

POSTGRADUATE CERTIFICATE OF COMPUTATIONAL ENGINEERING

Note: The Postgraduate Certificate of Computational Engineering is not offered in 2009. No new enrolments will be accepted in this course.

This 12 credit point award may be completed in a 12 month period by undertaking the two compulsory coursework subjects and choosing two of the elective coursework subjects from the schedule below.

Schedule

COMPULSORY SUBJECTS
EG5501:03 Numerical Methods
EG5502:03 Solid Mechanics

ELECTIVE SUBJECTS[1]
EG5503:03 Fluid Mechanics
EG5504:03 Finite Element Methods
EG5511:03 Computational Plasticity
EG5512:03 Non Linear Continuum Mechanics
EG5521:03 Computational Fluid Dynamics
EG5531:03 FEM in Soil and Rock Mechanics
EG5532:03 Porous Media Mechanics
EG5541:03 Discrete Element Modelling
EG5551:03 Transient and Dynamic Analysis
EG5552:03 Plates and Shells

1. Elective subjects are offered on condition that there are a sufficient number of enrolments.

COMPUTER SCIENCE

(See also Information Technology)

CONSERVATION BIOLOGY

The Master of Applied Science, the Graduate Diploma of Science and the Graduate Certificate of Science, in Conservation Biology provide students with general and specific skills in Conservation Biology through coursework subjects of a generic and specialised nature. Specialisation is possible in a variety of disciplines.

Prospective students should consult the Course Coordinator. Within the broad framework of the Award Requirements, each student's program, including the relative component of coursework and research, can be tailored to the individual student's background and requirements.

MASTER OF APPLIED SCIENCE

Townsville, Cairns

The Master of Applied Science is three teaching periods full time or six teaching periods part time. Admission to the course requires a Bachelor of Science, Bachelor of Applied Science or other qualifications deemed appropriate by the faculty.

CORE SUBJECTS
BS5001:03 Quantitative Methods in Biology
BZ5215:03 Conservation Biology

BZ5400:03 Advanced Population and Community Ecology
or
BZ5440:03 Ecology and Conservation

BZ5450:03 Ecological and Conservation Genetics

Plus

9 credit points from:
BT5010:03 Advanced Biology of Plant Survival
BZ5210:03 Ecology of Tropical Forest Ecosystems
BZ5212:03 Tropical Wetlands Ecology and Management
BZ5220:03 Rainforest Populations and Communities
BZ5420:03 Genetics for Biology
MB5004:03 Marine Conservation Biology
ZL5005:03 Marine and Terrestrial Invertebrate Biology
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
ZL5211:03 Tropical Australian Herpetology
ZL5420:03 Ornithology
ZL5501:03 Tropical Entomology

Plus

Level 5 AG, BT, BZ, EV, MB, ZL subjects to complete the award requirements of 36 credit points. Subjects may, with the approval of the School of Marine and Tropical Biology, include a maximum of 15 credit points of research subjects.

GRADUATE DIPLOMA OF SCIENCE

Townsville, Cairns

The Graduate Diploma of Science is two teaching periods full time or four teaching periods part time. Admission to the course requires a Bachelor of Science, Bachelor of Applied Science or other qualifications deemed appropriate by the faculty.

CORE SUBJECTS
BS5001:03 Quantitative Methods in Biology
BZ5215:03 Conservation Biology

BZ5400:03 Advanced Population and Community Ecology
or
BZ5440:03 Ecology and Conservation

Plus

9 credit points from:
BT5010:03 Advanced Biology of Plant Survival
BT5400:03 Advanced Tropical Flora of Australia
BZ5210:03 Ecology of Tropical Forest Ecosystems
BZ5212:03 Tropical Wetlands Ecology and Management
BZ5220:03 Rainforest Populations and Communities
BZ5420:03 Genetics for Biology
BZ5450:03 Ecological and Conservation Genetics
BZ5490:03 Advanced Tropical Ecosystems and Climate Change
MB5004:03 Marine Conservation Biology
ZL5005:03 Marine and Terrestrial Invertebrate Biology
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
ZL5211:03 Tropical Australian Herpetology
ZL5420:03 Ornithology
ZL5501:03 Tropical Entomology

Plus

Level 5 AG, BT, BZ, EV, MB, ZL subjects to complete the award requirements of 24 credit points. Subjects may, with the approval of the School of Marine and Tropical Biology, include a maximum of 6 credit points of research subjects.

GRADUATE CERTIFICATE OF SCIENCE

Townsville, Cairns

The Graduate Certificate of Science is one teaching period full time or two teaching periods part time. Admission to the course requires a Bachelor of Science, Bachelor of Applied Science or other qualifications deemed appropriate by the faculty.

CORE SUBJECTS
BS5001:03 Quantitative Methods in Biology
or
MB5230:03 Design and Analyses in Ecological Studies
or
MB5300:03 Sampling and Experimental Design

BZ5215:03 Conservation Biology
or

BZ5440:03 Ecology and Conservation
or
MB5004:03 Marine Conservation Biology

Plus

6 credit points from subjects above, if not taken as core, or from the following:

BT5010:03 Advanced Biology of Plant Survival
BZ5210:03 Ecology of Tropical Forest Ecosystems
BZ5212:03 Tropical Wetlands Ecology and Management
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
ZL5203:03 The Australian Vertebrate Fauna
ZL5205:03 Wildlife Ecology and Management

EARTH SCIENCES

Within the School of Earth and Environmental Sciences students can pursue the Master of Applied Science (by coursework) or the Minerals Geoscience Masters. The following guidelines apply to students selecting a Master of Applied Science in Earth Sciences:

a student who has attained the standard of Bachelor of Science or equivalent with a major in Earth Sciences or another approved science discipline may be admitted;
the Masters degree is available full time or part time;
entry is permitted either at the start of the University teaching year (end of February, intake A), or in mid-year at the start of Teaching Period 2 (July, intake B);
completion of the Master of Applied Science (Economic Geology, Environmental Earth Science or Exploration and Mining Geology) requires undertaking 36 credit points of approved subjects in those disciplines.

MASTER OF APPLIED SCIENCE (ECONOMIC GEOLOGY)

Townsville

EA5041:03 Earth Dynamics
EA5042:03 Deformation, Metamorphism and Hydrothermal Fluids
EA5043:03 Ore Genesis
EA5044:03 Geological Mapping
EA5045:03 Advanced Geological Mapping
EA5046:03 Earth and Environmental Geochemistry
EA5048:03 Earth Materials
EA5049:03 Crustal Processes
EA5320:03 Metalliferous Resources
EA5330:03 Field Techniques
EV5505:03 Introduction to Geographic Information Systems

Plus

3 credit points from the following subjects:

EA5016:03 Hydrology
EA5017:03 Applied Soil Science
EA5340:03 Disturbed Site Repair
EA5620:03 Palaeoenvironments and Change in Greater Australia (not offered in 2009)
EV5502:03 Advanced Geographic Information Systems

MASTER OF APPLIED SCIENCE (ENVIRONMENTAL EARTH SCIENCE)

Townsville, Cairns

EA5016:03 Hydrology
EA5017:03 Applied Soil Science
EA5046:03 Earth and Environmental Geochemistry
EA5090:03 Advanced Hydrology
EA5320:03 Metalliferous Resources
EA5330:03 Field Techniques
EA5404:03 From Icehouse to Greenhouse
EV5002:03 Environmental Impact Assessment
EV5505:03 Introduction to Geographic Information Systems

Plus

9 credit points from the following subjects:

EA5018:06 Field Studies in Tropical Water and Soil Science
EA5340:03 Disturbed Site Repair
EA5620:03 Palaeoenvironments and Change in Greater Australia (not offered in 2009)
EV5401:03 Coasts and Catchments: Geomorphology and Management
EV5406:03 Coral Reef Geomorphology
EV5500:03 Introduction to Environmental Remote Sensing
EV5501:03 Advanced Remote Sensing
EV5502:03 Advanced Geographic Information Systems

MASTER OF APPLIED SCIENCE (EXPLORATION AND MINING GEOLOGY)

Townsville

Select a minimum of 24 credit points (four subjects) from the following or subjects as approved by the Minerals Geoscience Masters coordinator:

EA5023:06 Resource Estimation and Production Geology
EA5024:06 Business and Financial Management in the Minerals Industry
EA5026:06 Special Studies
EA5027:06 Advanced Field Training
EA5028:06 Advanced Techniques in Mining and Exploration Geology

Plus

12 credit points of research dissertation as follows

EA5531:06 Research Dissertation Part 1 of 2
EA5532:06 Research Dissertation Part 2 of 2
or
EA5535:03 Research Dissertation (Part Time) Part 1 of 4
EA5536:03 Research Dissertation (Part Time) Part 2 of 4
EA5537:03 Research Dissertation (Part Time) Part 3 of 4
EA5538:03 Research Dissertation (Part Time) Part 4 of 4
OR

12 credit points of equivalent subjects selected from the Minerals Geoscience Masters (inter-institutional) program as advised by the course coordinator

MINERALS GEOSCIENCE MASTERS

Townsville

Select a minimum of 24 credit points (four subjects) from the following:

EA5023:06 Resource Estimation and Production Geology
EA5024:06 Business and Financial Management in the Minerals Industry
EA5026:06 Special Studies
EA5027:06 Advanced Field Training
EA5028:06 Advanced Techniques in Mining and Exploration Geology

An optional 6 credit point or 12 credit point research dissertation from:

EA5521:06 Minor Research Dissertation
or
EA5525:03 Minor Research Dissertation (Part Time) Part 1 of 2
EA5526:03 Minor Research Dissertation (Part Time) Part 2 of 2
or
EA5531:06 Research Dissertation Part 1 of 2
EA5532:06 Research Dissertation Part 2 of 2
or
EA5535:03 Research Dissertation (Part Time) Part 1 of 4
EA5536:03 Research Dissertation (Part Time) Part 2 of 4
EA5537:03 Research Dissertation (Part Time) Part 3 of 4
EA5538:03 Research Dissertation (Part Time) Part 4 of 4

Plus

A minimum of two and up to four subjects from the programs offered within the National Minerals Geoscience Masters training program.

UNIVERSITY OF TASMANIA subjects include:

KEA841 Ore Deposit Modes and Exploration Strategies

KEA843	Volcanology and Mineralisation in Volcanic Terrains
KEA845	Geochemistry, Hydrology and Timing of Hydrothermal Systems
KEA846	Ore Deposits of South America
KEA847	Brownfield Exploration

UNIVERSITY OF WESTERN AUSTRALIA subjects include:

504	Applied Structural Geology and Field Mapping
506	Exploration Techniques
508	Ore Deposit Models
519	Ore Deposit Field Trip to South Africa

AUSTRALIAN NATIONAL UNVERSITY (incorporating LEME) subjects include:
Regolith Geology and Mineral Exploration

VICTORIAN INSTITUTE OF EARTH AND PLANETARY SCIENCES *(MONASH, MELBOURNE, LA TROBE) subjects include:*
Geodynamics and Geophysics of Mineralised Terrains

INTER-SCHOOL POSTGRADUATE DEGREE PROGRAMS

Students may elect to enrol in relevant Earth Science subjects to satisfy the requirements of several inter-school postgraduate degree programs offered in the Science Faculty. These include Master of Applied Science (Coursework) degree programs in Environmental Chemistry and Tropical Environmental Management and Graduate Diploma programs in Environmental Chemistry, Geographical and Land Information Systems and Tropical Environmental Management. Details may be found under the above headings.

GRADUATE DIPLOMA OF SCIENCE

The Graduate Diploma is available in the following majors:

Economic Geology
Environmental Earth Science
Exploration and Mining Geology

The following guidelines apply to students selecting one of the available Graduate Diploma disciplines in Earth Sciences.

A student who has attained the standard of Bachelor of Science or equivalent with a major in Earth Sciences or another approved science discipline may be admitted.

The Graduate Diploma is available as a one year full-time or two year part-time course of study.

Entry is permitted either at the start of the University teaching year (end of February, intake A), or in mid-year at the start of Teaching Period 2 (July, intake B).

Completion of the Graduate Diploma of Science in Environmental Earth Science, Exploration and Mining Geology or Economic Geology requires undertaking 24 credit points of approved subjects in those disciplines.

ECONOMIC GEOLOGY
Townsville

EA5043:03	Ore Genesis
EA5044:03	Geological Mapping
EA5045:03	Advanced Geological Mapping
EA5048:03	Earth Materials
EA5049:03	Crustal Processes
EA5320:03	Metalliferous Resources
EA5330:03	Field Techniques

Plus

One of the following subjects:

EA5046:03	Earth and Environmental Geochemistry
EA5340:03	Disturbed Site Repair
EV5505:03	Introduction to Geographic Information Systems

ENVIRONMENTAL EARTH SCIENCE
Townsville, Cairns

EA5016:03	Hydrology
EA5017:03	Applied Soil Science
EV5002:03	Environmental Impact Assessment
EV5505:03	Introduction to Geographic Information Systems

Plus

At least four of the following subjects:

EA5046:03	Earth and Environmental Geochemistry
EA5090:03	Advanced Hydrology
EA5320:03	Metalliferous Resources
EA5330:03	Field Techniques
EA5340:03	Disturbed Site Repair
EA5404:03	From Icehouse to Greenhouse

EXPLORATION AND MINING GEOLOGY
Townsville

The Graduate Diploma with a major in Exploration and Mining Geology comprises completion of a minimum of three of the six credit point subjects (18 credit points) offered in the Minerals Geoscience Masters program plus additional level 5 subjects.

At least 18 credit points from the following subjects:

EA5023:06	Resource Estimation and Production Geology
EA5024:06	Business and Financial Management in the Minerals Industry
EA5027:06	Advanced Field Training
EA5028:06	Advanced Techniques in Mining and Exploration Geology

Plus

If required, 6 credit points from the following level 5 subjects:

EA5026:06	Special Studies
EA5330:03	Field Techniques
EA5340:03	Disturbed Site Repair

RESEARCH DEGREE PROGRAMS

Students who satisfy the appropriate admission requirements may seek admission to the research degrees of Master of Science (by thesis only) or Doctor of Philosophy. Refer to the Index for the Award Requirements for these degrees.

Thesis topics will be considered in any branch of Earth Sciences suitably related to staff research interests. See section on "Research Activities" for details of current research areas.

ECONOMIC GEOLOGY

(See Earth Sciences)

ELECTRICAL AND COMPUTER SYSTEMS ENGINEERING

(See Engineering)

ENGINEERING

The School of Engineering offers postgraduate studies leading to the degree of Master of Engineering Science.

MASTER OF ENGINEERING SCIENCE

The degree may be taken in one of the following disciplines of the School of Engineering: Chemical, Civil, Computer Systems, Electrical and Electronic, Environmental or Mechanical Engineering. The degree comprises a research thesis. Current research interests can be obtained on the School of Engineering website at http://www.eng.jcu.edu.au.

ENTOMOLOGY

The Graduate Diploma of Science and the degrees of Master of Applied Science and Master of Science in Entomology emphasise tropical systems generally and encompass both pure (eg insect biodiversity) and applied (eg control of insect pests) aspects of entomology in Australia.

Prospective students should consult the Course Coordinator. Within the broad framework of the Award Rules, each student's program, including weighting of coursework and research, can be tailored to the individual candidate's background and requirements.

The course is available at Cairns.

ENVIRONMENTAL CHEMISTRY

Environmental Chemistry courses may be undertaken in the Master of Science (by research) and Doctor of Philosophy.

ENVIRONMENTAL SCIENCE

(See also Geography, Natural Resource Management, Protected Area Management)

The School of Earth and Environmental Sciences offers the following specialist areas of postgraduate coursework programs within Environmental Science/Environmental Studies: Geographical Information Systems and Spatial Analysis; Natural Resource Management; Protected Area Management and Tropical Urban and Regional Planning. For further details please refer to information under those headings.

EXPLORATION AND MINING GEOLOGY

(See Earth Sciences)

GEOGRAPHIC INFORMATION SYSTEMS AND SPATIAL ANALYSIS

The School of Earth and Environmental Sciences has the best equipped geographical information systems laboratories in northern Australia and a cartographic centre which contains an extensive archive of land and natural resource information for tropical Australia.

Links with the Australian Institute of Marine Science, the CSIRO Davies and Atherton Laboratories, Cooperative Research Centres and the Great Barrier Reef Marine Park Authority ensure that students have access to a wide range of research topics and supporting spatial data sets.

The degree of Master of Science in Spatial Analysis, by research aims to promote and develop research in the theory and practice of spatial analysis by reviewing:

- the temporal and spatial patterning of geographic phenomena;
- the integration of spatial data and the modelling of spatial relationships;
- the estimation of spatial properties; and
- the simulation of environmental and social processes.

The degree is of general relevance to the social, environmental and earth sciences and is complementary to the Master of Science and Master of Applied Science program in Tropical Environment Management.

Prospective students for each program should consult with the relevant Course Coordinator to organise their enrolment.

MASTER OF APPLIED SCIENCE

Townsville, Cairns

The degree of Master of Applied Science in Spatial Analysis, by coursework is designed to give students a sound theoretical knowledge of spatial data, its analysis and management, combined with technical skills and project experience of direct relevance to industry. The student will be required to undertake a significant project with an applied research and development flavour, normally in collaboration or consultation with an industry group.

The course emphasises the design, organisation and analysis of spatial databases, and the integration of spatial data to address commercial, social, resource management, scientific and other needs.

Complete at least four of the following subjects:

CP5520:03	Advanced Databases and Applications
EV5007:03	Introduction to Research
EV5500:03	Introduction to Environmental Remote Sensing
EV5501:03	Advanced Remote Sensing (not offered in 2009)
EV5502:03	Advanced Geographic Information Systems
EV5503:03	GIS for Environmental Analysis
EV5505:03	Introduction to Geographic Information Systems

Plus

At least two of the following:

EV5002:03	Environmental Impact Assessment
EV5100:03	Coastal Management
or	
EV5701:03	Managing Coastal and Marine Environments
EV5200:03	Terrestrial Resource Management
EV5205:03	Conserving Tropical Rainforests
EV5252:03	Indigenous Environmental Management
EV5401:03	Coasts and Catchments: Geomorphology and Management
EV5454:03	Natural Hazards
EV5601:03	Social Impact Assessment: Environmental Management

Plus

Level 5 AQ, BT, BZ, CP, EA, EV, MA, MB, PH, ZL electives to make up the Award Requirements of 36 credit points. Electives may, with the approval of the School of Earth and Environmental Sciences include a maximum of 12 credit points of research subjects.

Students are advised to consult the school's website: http://www.jcu.edu.au/ees/ for advice on selecting the campus and commencement date of their course.

GRADUATE DIPLOMA OF SCIENCE

Townsville, Cairns

The Graduate Diploma of Science in Spatial Analysis is a 12 month course offered by the School of Earth and Environmental Sciences. It aims to give participants a sound theoretical and practical education in the principles of geographic information analysis and the techniques of information system development using ecological, environmental and socioeconomic themes.

Students must complete six coursework subjects and a minor project.

Students are encouraged to undertake projects with a strong practical emphasis which address significant issues in information systems development; primarily the development of natural resource or socio-economic databases which can be applied to spatial analysis. Most projects involve direct liaison with government agencies.

Complete at least four of the following subjects:

EV5501:03	Advanced Remote Sensing
EV5502:03	Advanced Geographic Information Systems
EV5503:03	GIS for Environmental Analysis
EV5505:03	Introduction to Geographic Information Systems
CP5520:03	Advanced Databases and Applications

Plus

At least two of the following:

EV5002:03	Environmental Impact Assessment
EV5100:03	Coastal Management
or	
EV5701:03	Managing Coastal and Marine Environments
EV5200:03	Terrestrial Resource Management
EV5252:03	Indigenous Environmental Management
EV5401:03	Coasts and Catchments: Geomorphology and Management
EV5454:03	Natural Hazards
EV5601:03	Social Impact Assessment: Environmental Management

Plus

Level 5 AQ, BT, BZ, CP, EA, EV, MA, MB, PH, ZL electives to complete the Award Requirements of 24 credit points. Electives may, with the approval of the School of Earth and Environmental Sciences include a maximum of 6 credit points of research subjects.

Students are advised to consult the school's website: http://www.jcu.edu.au/ees/ for advice on selecting the campus and commencement date of their course.

GRADUATE CERTIFICATE OF SCIENCE

Townsville, Cairns

Note: The Graduate Certificate of Science majoring in Spatial Analysis is not offered in 2009. No new enrolments will be accepted in this course for 2009.

Complete four of the following subjects:

CP5520:03	Advanced Databases and Applications
EV5501:03	Advanced Remote Sensing
EV5502:03	Advanced Geographic Information Systems
EV5503:03	GIS for Environmental Analysis
EV5505:03	Introduction to Geographic Information Systems (Cairns)

Students are advised to consult the school's website:
http://www.jcu.edu.au/ees/
for advice on selecting the campus and commencement date of their course.

GEOGRAPHY (HUMAN)

(See also Tropical Urban and Regional Planning)

Human geography at James Cook University is offered in the School of Earth and Environmental Sciences. The program takes a broad approach to human activities in urban and rural settings and human interaction with natural and built environments. Staff and students consider how human societies function and how this influences the nature of places, including the use of resources, environmental impacts and linkages between regions.

Students take advantage of the interdisciplinary nature of the school, which brings together physical, biological and social aspects of the environment and provides opportunity for creative and dynamic research into environmental issues and problems, particularly in relation to social aspects.

Postgraduate coursework is available through the Tropical Urban and Regional Planning program. Students interested in research degrees may qualify for entry into either a Doctor of Philosophy or Master of Science program in Human Geography. Examples of current and recent research projects in this area include projects on transport and energy efficiency, investigation of village tourist projects in the South Pacific, modelling planning for outback towns and the location and economics of private sector nature conservation. The diverse environments and settlements of northern Australia provide some exciting opportunities for interesting projects in the human geography area.

Further details of opportunities for research degrees in human geography can be obtained through the School of Earth and Environmental Sciences.

GEOGRAPHY (PHYSICAL)

(See also Environmental Science, GIS and Spatial Analysis)

Physical geography deals with the materials and processes (physical, biological and chemical) that shape and influence landscapes and environments. The physical geography program at James Cook University, offered through the School of Earth and Environmental Sciences takes a broad approach. It considers how environments and landscapes function and how they may change over time (including how they may change as a result of the ongoing effects of human activities). The interdisciplinary nature of the school also provides perspectives from a physical, biological and social background, facilitating creative and dynamic solutions to existing and evolving problems.

The school's programs in physical geography have particular strengths in geomorphology, biogeography and climatology, with special emphasis being given to the tropical perspective. Postgraduate geography students at JCU enjoy access to outstanding and diverse natural locations, including rainforest, woodland, savanna, arid zone, stream, wetland, coral reef, mangrove, seagrass, soft bottom benthic and open water pelagic environments.

Students interested in undertaking research in tropical north Queensland, may qualify for entry into a Doctor of Philosophy or a Master of Science program in physical geography. Research students take advantage of field stations on Orpheus Island, Horn Island or Moreton Island, in rainforest ("Kirrama" and "Paluma") or savanna ("Fletcherview") habitats and at the Australian Canopy Crane Research Facility at Cape Tribulation. The University's strong involvement with the Cooperative Research Centres for the Great Barrier Reef World Heritage Area, Tropical Rainforest Ecology and Management, Sustainable Sugar Production and Sustainable Development of Tropical Savannas also provide significant strengths in the areas of applied and strategic research.

Further details of opportunities for research degrees in physical geography can be obtained through the School of Earth and Environmental Sciences.

GEOLOGY

(See Earth Sciences)

INFORMATION TECHNOLOGY

Majors:

E-BUSINESS
INDUSTRY RESEARCH AND DEVELOPMENT
MULTIMEDIA GAME DEVELOPMENT
NETWORKING

Postgraduate studies in Information Technology are available at Graduate Certificate, Graduate Diploma and Masters levels with four majors listed above. The E-Business major is also available within the joint degree, Master of Information Technology-Master of Business Administration.

The E-Business specialisation is designed to provide a mix of business and marketing skills, multimedia production and support skills and computer networking skills. It provides a path for business, commerce and other non-computer science/information technology graduates, as well as for CS/IT graduates, seeking to move into IT/E-Business intensive industries such as finance, banking and retailing.

The Multimedia Game Development specialisation suits graduates from any field with a CS/IT background and teaches the necessary skills to enter computer game and animation development careers. The aim is to produce developers who are also well-rounded IT graduates with an understanding of design, story-telling and culture. As well as the traditional IT subjects, the students will study animation, advanced graphics, design, virtual world creation, character and plot development and the ethics of computer games.

The Networking specialisation is designed to provide the 'convergent IP technology' skills of computing, networking and software that underpin the operation of the on-line IP-based business world. It will provide an upgrade path for computer science/information technology graduates, seeking to move into the networking industry, as network designers, network administrators, system integrators, WWW designers and web masters and intranet supervisors; suitable for careers in networking intensive industries such as telecommunications, media, entertainment and finance.

The Industry Research and Development specialisation is designed for information technology/computer science graduates seeking careers within the product research and development sectors of the Information and Communications Technology industry. This specialisation provides a coursework introduction to research concepts and skills, builds IT systems and software development skills and provides advanced knowledge in specialist areas; suitable for careers in IT intensive original equipment manufacturing industries.

In addition, a joint Master of Information Technology-Master of Business Administration program is available with the E-Business major only. There is a growing demand for graduates skilled in a range of multimedia, computing, networking and software technologies. In addition there is a worldwide demand for graduates with critical business skills for managing in the twenty-first century. This joint degree provides a blend of skills as required in technology management careers.

All programs are accredited at the highest level, the professional level, by the Australian Computer Society.

Many programs include preparation for industry certification, including Cisco (CCBA), Microsoft (MCSE) and Oracle.

DEGREE STRUCTURE

Degrees administered by the Faculty of Science, Engineering and Information Technology:

Graduate Certificate of Information Technology (GCertInfTech)
Graduate Diploma of Information Technology (GDipInfTech)
Master of Information Technology (MInfTech)

Master of Information Technology (Extended) (MInfTech).

Degrees administered jointly by the Faculty of Science, Engineering and Information Technology and the Faculty of Law, Business and the Creative Arts:

Master of Information Technology-Master of Business Administration (MInfTech-MBA)
Master of Information Technology (Extended)-Master of Business Administration (MInfTech-MBA)

The prescribed course of study for each major is a program of study which is:

(a) approved by the Head of the School of Mathematics, Physics and Information Technology for the E-Business, Industry Research and Development, Multimedia, Multimedia Game Development, and Networking majors;
(b) approved by both the Head of the School of Mathematics, Physics and Information Technology and the head of a Science school for the Science Informatics major;
(c) in the case of the Master of Information Technology-Master of Business Administration and the Master of Information Technology (Extended)-Master of Business Administration, approved by both the Pro-Vice-Chancellor of the Faculty of Law, Business and the Creative Arts and the Head of the School of Mathematics, Physics and Information Technology.

GRADUATE CERTIFICATE OF INFORMATION TECHNOLOGY

12 credit points in which:

- at least 6 credit points are CP subjects assessed at postgraduate level
- at least 9 credit points are assessed at postgraduate level

GRADUATE DIPLOMA OF INFORMATION TECHNOLOGY

24 credit points in which:

- at least 12 credit points are CP subjects assessed at postgraduate level
- at least 18 credit points are assessed at postgraduate level

MASTER OF INFORMATION TECHNOLOGY

36 credit points in which:

- at least 18 credit points are CP subjects assessed at postgraduate level
- at least 27 credit points are assessed at postgraduate level

MASTER OF INFORMATION TECHNOLOGY (EXTENDED)

48 credit points in which:

- 12 credit points are CP subjects as directed by the Head of the School of Mathematics, Physics and Information Technology to extend the IT knowledge of a particular student, as appropriate for the major(s) chosen. These may be undergraduate level subjects
- plus 36 credit points which satisfy the requirements for the Master of Information Technology

MASTER OF INFORMATION TECHNOLOGY-MASTER OF BUSINESS ADMINISTRATION

Townsville, Cairns, Brisbane, Singapore

CP5046:03 ICT Project 1: Analysis and Design
CP5047:03 ICT Project 2: Implementation and Commissioning
CP5220:03 On-line Multimedia Design
CP5231:03 Internetworking Principles
CP5310:03 E-Business Technologies
CP5503:03 Enterprise Database Systems - Oracle

Plus

a total of 30 credit points of subjects selected from level 5 CP subjects and level 5 LB subjects consisting of a minimum of 3 credit points from CP subjects and a minimum 21 credit points of LB subjects selected from:

LB5002:03 Data Management and Information Technology
LB5003:03 Economics for Managers
LB5004:03 Business and the Law
LB5201:03 Business: A Global Perspective
LB5202:03 Marketing and Innovation
LB5203:03 Sustainable Enterprise
LB5204:03 Global is at ion, Governance and the State
LB5205:03 Human Relations in the Workplace
LB5206:03 Competitive Strategy
LB5207:03 Entrepreneurship
LB5208:03 Leadership in Contemporary Organisations
LB5209:03 Managing Globally
LB5210:03 Independent Studies
LB5211:03 Finance for Managers
LB5212:03 Accounting for Managers

MASTER OF INFORMATION TECHNOLOGY (EXTENDED)-MASTER OF BUSINESS ADMINISTRATION

Townsville, Cairns, Brisbane, Singapore

12 credit points of core subjects selected from:

CP1010:03 Introduction to Multimedia
CP1200:03 Introduction to Computer Science 1
CP1300:03 Introduction to Computer Science 2
CP1500:03 Introduction to Database Principles
CP2001:03 Data Structures and Algorithms
CP2402:03 Operating Systems and Architectures
CP5504:03 Object Oriented Programming with Java

Plus

CP5046:03 ICT Project 1: Analysis and Design
CP5047:03 ICT Project 2: Implementation and Commissioning
CP5220:03 On-line Multimedia Design
CP5231:03 Internetworking Principles
CP5310:03 E-Business Technologies
CP5503:03 Enterprise Database Systems - Oracle

Plus

a total of 30 credit points of subjects selected from level 5 CP subjects and level 5 LB subjects consisting of a minimum of 3 credit points from CP subjects and a minimum 21 credit points of LB subjects selected from

LB5002:03 Data Management and Information Technology
LB5003:03 Economics for Managers
LB5004:03 Business and the Law
LB5201:03 Business: A Global Perspective
LB5202:03 Marketing and Innovation
LB5203:03 Sustainable Enterprise
LB5204:03 Globalisation, Governance and the State
LB5205:03 Human Relations in the Workplace
LB5206:03 Competitive Strategy
LB5207:03 Entrepreneurship
LB5208:03 Leadership in Contemporary Organisations
LB5209:03 Managing Globally
LB5210:03 Independent Studies
LB5211:03 Finance for Managers
LB5212:03 Accounting for Managers

E-BUSINESS

MASTER OF INFORMATION TECHNOLOGY (E-Business)

Townsville, Cairns, Brisbane, Singapore

CORE SUBJECTS

CP5046:03 ICT Project 1: Analysis and Design
CP5047:03 ICT Project 2: Implementation and Commissioning
CP5220:03 On-line Multimedia Design
CP5231:03 Internetworking Principles
CP5310:03 E-Business Technologies
CP5503:03 Enterprise Database Systems - Oracle

Plus

18 credit points selected from level 5 CP subjects and/or

LB5002:03 Data Management and Information Technology
LB5003:03 Economics for Managers
LB5004:03 Business and the Law
LB5201:03 Business: A Global Perspective
LB5202:03 Marketing and Innovation
LB5203:03 Sustainable Enterprise

LB5204:03 Globalisation, Governance and the State
LB5205:03 Human Relations in the Workplace
LB5206:03 Competitive Strategy
LB5207:03 Entrepreneurship
LB5208:03 Leadership in Contemporary Organisations
LB5209:03 Managing Globally
LB5211:03 Finance for Managers
LB5212:03 Accounting for Managers

MASTER OF INFORMATION TECHNOLOGY (EXTENDED) (E-Business)
Townsville, Cairns, Brisbane, Singapore

12 credit points of subjects selected from:
CP1010:03 Introduction to Multimedia
CP1200:03 Introduction to Computer Science 1
CP1300:03 Introduction to Computer Science 2
CP1500:03 Introduction to Database Principles
CP2001:03 Data Structures and Algorithms
CP2402:03 Operating Systems and Architectures
CP5504:03 Object Oriented Programming with Java

Plus

CORE SUBJECTS
CP5046:03 ICT Project 1: Analysis and Design
CP5047:03 ICT Project 2: Implementation and Commissioning
CP5220:03 On-line Multimedia Design
CP5231:03 Internetworking Principles
CP5310:03 E-Business Technologies
CP5503:03 Enterprise Database Systems - Oracle

Plus

18 credit points selected from level 5 CP subjects and/or
LB5002:03 Data Management and Information Technology
LB5003:03 Economics for Managers
LB5004:03 Business and the Law
LB5201:03 Business: A Global Perspective
LB5202:03 Marketing and Innovation
LB5203:03 Sustainable Enterprise
LB5204:03 Globalisation, Governance and the State
LB5205:03 Human Relations in the Workplace
LB5206:03 Competitive Strategy
LB5207:03 Entrepreneurship
LB5208:03 Leadership in Contemporary Organisations
LB5209:03 Managing Globally
LB5211:03 Finance for Managers
LB5212:03 Accounting for Managers

GRADUATE DIPLOMA OF INFORMATION TECHNOLOGY (E-Business)
Townsville, Cairns, Brisbane

CORE SUBJECTS
CP5046:03 ICT Project 1: Analysis and Design
CP5220:03 On-line Multimedia Design
CP5231:03 Internetworking Principles
CP5310:03 E-Business Technologies

Plus

12 credit points selected from level 5 CP subjects and/or
LB5002:03 Data Management and Information Technology
LB5003:03 Economics for Managers
LB5004:03 Business and the Law
LB5201:03 Business: A Global Perspective
LB5202:03 Marketing and Innovation
LB5203:03 Sustainable Enterprise
LB5204:03 Globalisation, Governance and the State
LB5205:03 Human Relations in the Workplace
LB5206:03 Competitive Strategy
LB5207:03 Entrepreneurship
LB5208:03 Leadership in Contemporary Organisations
LB5209:03 Managing Globally
LB5211:03 Finance for Managers
LB5212:03 Accounting for Managers

GRADUATE CERTIFICATE OF INFORMATION TECHNOLOGY (E-Business)
Townsville, Cairns, Brisbane

CORE SUBJECTS
CP5220:03 On-line Multimedia Design
CP5231:03 Internetworking Principles

Plus

6 credit points selected from:
level 5 CP subjects and/or
level 5 LB subjects

INDUSTRY RESEARCH AND DEVELOPMENT

MASTER OF INFORMATION TECHNOLOGY (Industry Research and Development)
Townsville, Cairns

CORE SUBJECTS
CP5001:06 Thesis Project (Part 1 of 2)
CP5003:06 Thesis Project (Part 2 of 2)
CP5046:03 ICT Project 1: Analysis and Design
CP5080:03 Literature Review and Research Proposal
CP5090:03 Scientific Research Methods
CP5110:03 Cryptography
CP5150:03 Algorithms and Complexity

Plus

9 credit points selected from the following:
CP5030:03 Special Topics 1
CP5170:03 Topics in Systems and Networks
CP5290:03 Unix - Linux Systems
CP5310:03 E-Business Technologies
CP5377:03 Portable Programming
CP5503:03 Enterprise Database Systems - Oracle
CP5504:03 Object Oriented Programming with Java
CP5610:03 Fundamentals of Software Engineering
CP5620:03 Object Oriented Software Engineering

MASTER OF INFORMATION TECHNOLOGY (EXTENDED) Industry Research and Development)
Townsville, Cairns

12 credit points of subjects selected from:
CP2001:03 Data Structures and Algorithms
CP2402:03 Operating Systems and Architectures
CP3020:03 Advanced Database Management
CP3050:03 Algorithms and Complexity
CP3070:03 Principles of Data Communications
or
Other subjects approved by the Head of the School of Mathematics, Physics and Information Technology.

Plus

CORE SUBJECTS
CP5001:06 Thesis Project (Part 1 of 2)
CP5003:06 Thesis Project (Part 2 of 2)
CP5046:03 ICT Project 1: Analysis and Design
CP5080:03 Literature Review and Research Proposal
CP5090:03 Scientific Research Methods
CP5110:03 Cryptography
CP5150:03 Algorithms and Complexity

Plus

9 credit points selected from level 5 CP subjects and/or
CP5030:03 Special Topics 1
CP5170:03 Topics in Systems and Networks
CP5290:03 Unix - Linux Systems
CP5310:03 E-Business Technologies
CP5377:03 Portable Programming

CP5503:03 Enterprise Database Systems - Oracle
CP5504:03 Object Oriented Programming with Java
CP5610:03 Fundamentals of Software Engineering
CP5620:03 Object Oriented Software Engineering

GRADUATE DIPLOMA OF INFORMATION TECHNOLOGY (Industry Research and Development)
Townsville, Cairns

CORE SUBJECTS
CP5001:06 Thesis Project (Part 1 of 2)
CP5003:06 Thesis Project (Part 2 of 2)
CP5046:03 ICT Project 1: Analysis and Design
CP5080:03 Literature Review and Research Proposal
CP5090:03 Scientific Research Methods

Plus

3 credit points selected from the following:
CP5030:03 Special Topics 1
CP5110:03 Cryptography
CP5150:03 Algorithms and Complexity
CP5170:03 Topics in Systems and Networks
CP5290:03 Unix - Linux Systems
CP5310:03 E-Business Technologies
CP5377:03 Portable Programming
CP5503:03 Enterprise Database Systems - Oracle
CP5504:03 Object Oriented Programming with Java
CP5610:03 Fundamentals of Software Engineering
CP5620:03 Object Oriented Software Engineering

GRADUATE CERTIFICATE OF INFORMATION TECHNOLOGY (Industry Research and Development)
Townsville, Cairns

CORE SUBJECTS
CP5080:03 Literature Review and Research Proposal
CP5090:03 Scientific Research Methods

Plus

6 credit points selected from the following:
CP5001:06 Thesis Project (Part 1 of 2)
CP5003:06 Thesis Project (Part 2 of 2)
CP5030:03 Special Topics 1
CP5046:03 ICT Project 1: Analysis and Design
CP5110:03 Cryptography
CP5150:03 Algorithms and Complexity
CP5170:03 Topics in Systems and Networks
CP5290:03 Unix - Linux Systems
CP5310:03 E-Business Technologies
CP5377:03 Portable Programming
CP5503:03 Enterprise Database Systems - Oracle
CP5504:03 Object Oriented Programming with Java
CP5610:03 Fundamentals of Software Engineering
CP5620:03 Object Oriented Software Engineering

MULTIMEDIA GAME DEVELOPMENT

MASTER OF INFORMATION TECHNOLOGY (Multimedia Game Development)
Cairns

CORE SUBJECTS
CP5046:03 ICT Project 1: Analysis and Design
CP5410:03 Advanced Game Design
CP5420:03 Graphics and Animation Technologies
CP5430:03 Computer Games - Characteristics and Culture
CP5560:03 Computer Graphics Principles
CP5630:03 Advanced Directed Project - Game Principles

Plus

18 credit points selected from:
CP5047:03 ICT Project 2: Implementation and Commissioning
CP5110:03 Cryptography
CP5150:03 Algorithms and Complexity
CP5170:03 Topics in Systems and Networks
CP5290:03 Unix - Linux Systems
CP5377:03 Portable Programming
CP5504:03 Object Oriented Programming with Java
CP5610:03 Fundamentals of Software Engineering
CP5620:03 Object Oriented Software Engineering

MASTER OF INFORMATION TECHNOLOGY (EXTENDED) (Multimedia Game Development)
Cairns

12 credit points of subjects selected from:
CP1010:03 Introduction to Multimedia
CP1200:03 Introduction to Computer Science 1
CP1300:03 Introduction to Computer Science 2
CP1500:03 Introduction to Database Principles
CP2001:03 Data Structures and Algorithms
CP2402:03 Operating Systems and Architectures
CP5504:03 Object Oriented Programming with Java

Plus

CORE SUBJECT
CP5046:03 ICT Project 1: Analysis and Design
CP5410:03 Advanced Game Design
CP5420:03 Graphics and Animation Technologies
CP5430:03 Computer Games - Characteristics and Culture
CP5560:03 Computer Graphics Principles
CP5630:03 Advanced Directed Project - Game Principles

Plus

18 credit points selected from:
CP5047:03 ICT Project 2: Implementation and Commissioning
CP5110:03 Cryptography
CP5150:03 Algorithms and Complexity
CP5170:03 Topics in Systems and Networks
CP5290:03 Unix - Linux Systems
CP5377:03 Portable Programming
CP5610:03 Fundamentals of Software Engineering
CP5620:03 Object Oriented Software Engineering

GRADUATE DIPLOMA OF INFORMATION TECHNOLOGY (Multimedia Game Development)
Cairns

CORE SUBJECTS
CP5410:03 Advanced Game Design
CP5420:03 Graphics and Animation Technologies
CP5430:03 Computer Games - Characteristics and Culture
CP5630:03 Advanced Directed Project - Game Principles

Plus

12 credit points selected from:
CP5046:03 ICT Project 1: Analysis and Design
CP5047:03 ICT Project 2: Implementation and Commissioning
CP5110:03 Cryptography
CP5150:03 Algorithms and Complexity
CP5170:03 Topics in Systems and Networks
CP5290:03 Unix - Linux Systems
CP5377:03 Portable Programming
CP5504:03 Object Oriented Programming with Java
CP5610:03 Fundamentals of Software Engineering
CP5620:03 Object Oriented Software Engineering

GRADUATE CERTIFICATE OF INFORMATION TECHNOLOGY (Multimedia Game Development)
Cairns

CORE SUBJECTS
CP5410:03 Advanced Game Design
CP5630:03 Advanced Directed Project - Game Principles

Plus

6 credit points of subjects selected from:

CP5046:03 ICT Project 1: Analysis and Design
CP5047:03 ICT Project 2: Implementation and Commissioning
CP5110:03 Cryptography
CP5150:03 Algorithms and Complexity
CP5170:03 Topics in Systems and Networks
CP5290:03 Unix - Linux Systems
CP5377:03 Portable Programming
CP5504:03 Object Oriented Programming with Java
CP5610:03 Fundamentals of Software Engineering
CP5620:03 Object Oriented Software Engineering

NETWORKING

MASTER OF INFORMATION TECHNOLOGY (Networking)
Townsville, Singapore, Brisbane

CORE SUBJECTS
CP5046:03 ICT Project 1: Analysis and Design
CP5047:03 ICT Project 2: Implementation and Commissioning
CP5110:03 Cryptography
CP5231:03 Internetworking Principles
CP5241:03 Advanced Internetworking
CP5250:03 Network Administration 1
CP5370:03 Advanced Data Communications

Plus

15 credit points of electives, with a minimum of 6 credit points from level 5 CP subjects; the remaining credit points to be selected from level 5 CP subjects and/or LB subjects as advised by the Manger, Postgraduate Program, School of Business, from the following subjects:
LB5002:03 Data Management and Information Technology
LB5003:03 Economics for Managers
LB5004:03 Business and the Law
LB5201:03 Business: A Global Perspective
LB5202:03 Marketing and Innovation
LB5203:03 Sustainable Enterprise
LB5204:03 Globalisation, Governance and the State
LB5205:03 Human Relations in the Workplace
LB5206:03 Competitive Strategy
LB5207:03 Entrepreneurship
LB5208:03 Leadership in Contemporary Organisations
LB5209:03 Managing Globally
LB5211:03 Finance for Managers
LB5212:03 Accounting for Managers

MASTER OF INFORMATION TECHNOLOGY (EXTENDED) (Networking)
Townsville, Singapore, Brisbane

12 credit points of subjects selected from:
CP1010:03 Introduction to Multimedia
CP1200:03 Introduction to Computer Science 1
CP1300:03 Introduction to Computer Science 2
CP1500:03 Introduction to Database Principles
CP2001:03 Data Structures and Algorithms
CP2402:03 Operating Systems and Architectures

Plus

CORE SUBJECTS
CP5046:03 ICT Project 1: Analysis and Design
CP5047:03 ICT Project 2: Implementation and Commissioning
CP5110:03 Cryptography
CP5231:03 Internetworking Principles
CP5241:03 Advanced Internetworking
CP5250:03 Network Administration 1
CP5370:03 Advanced Data Communications

Plus

15 credit points of electives, with a minimum of 6 credit points from level 5 CP subjects; the remaining credit points to be selected from level 5 CP subjects and/or LB subjects as advised by the Manger, Postgraduate Program, School of Business, from the following subjects:
LB5002:03 Data Management and Information Technology
LB5003:03 Economics for Managers
LB5004:03 Business and the Law
LB5201:03 Business: A Global Perspective
LB5202:03 Marketing and Innovation
LB5203:03 Sustainable Enterprise
LB5204:03 Globalisation, Governance and the State
LB5205:03 Human Relations in the Workplace
LB5206:03 Competitive Strategy
LB5207:03 Entrepreneurship
LB5208:03 Leadership in Contemporary Organisations
LB5209:03 Managing Globally
LB5211:03 Finance for Managers
LB5212:03 Accounting for Managers

GRADUATE DIPLOMA OF INFORMATION TECHNOLOGY (Networking)
Townsville

CORE SUBJECTS
CP5046:03 ICT Project 1: Analysis and Design
CP5231:03 Internetworking Principles
CP5241:03 Advanced Internetworking
CP5250:03 Network Administration 1

Plus

12 credit points selected from level 5 CP subjects and/or:
LB5002:03 Data Management and Information Technology
LB5003:03 Economics for Managers
LB5004:03 Business and the Law
LB5201:03 Business: A Global Perspective
LB5202:03 Marketing and Innovation
LB5203:03 Sustainable Enterprise
LB5204:03 Globalisation, Governance and the State
LB5205:03 Human Relations in the Workplace
LB5206:03 Competitive Strategy
LB5207:03 Entrepreneurship
LB5208:03 Leadership in Contemporary Organisations
LB5209:03 Managing Globally
LB5211:03 Finance for Managers
LB5212:03 Accounting for Managers

GRADUATE CERTIFICATE OF INFORMATION TECHNOLOGY (Networking)
Townsville

CORE SUBJECTS
CP5231:03 Internetworking Principles
CP5250:03 Network Administration 1

Plus

6 credit points selected from level 5 CP subjects and/or:
LB5002:03 Data Management and Information Technology
LB5003:03 Economics for Managers
LB5004:03 Business and the Law
LB5201:03 Business: A Global Perspective
LB5202:03 Marketing and Innovation
LB5203:03 Sustainable Enterprise
LB5204:03 Globalisation, Governance and the State
LB5205:03 Human Relations in the Workplace
LB5206:03 Competitive Strategy
LB5207:03 Entrepreneurship
LB5208:03 Leadership in Contemporary Organisations
LB5209:03 Managing Globally
LB5211:03 Finance for Managers
LB5212:03 Accounting for Managers

MARINE BIOLOGY

JCU enjoys national and international recognition for its teaching and research in tropical marine biology. The School of Marine and Tropical Biology offers both research and coursework postgraduate programs dedicated to the study of tropical shallow water marine systems, with an emphasis on whole-organism biology, the ecology and biogeography

of tropical marine organisms and the evolutionary mechanisms that underlie their diversity.

Coursework postgraduate programs consist of introductory subjects (of one teaching period duration) and more advanced block mode subjects in a variety of areas including quantitative marine ecology, fisheries science and marine conservation. Other subjects focus on the life histories, biogeography and evolution of tropical marine animals. Postgraduate coursework emphasises quantitative and analytical approaches through specialist subjects in sampling design and modelling.

Research postgraduate programs benefit from the unparalleled opportunities provided by JCU's proximity to the Great Barrier Reef, which facilitates investigations of ecological and evolutionary questions for reef fish, corals and other marine animals. Current research activities within the school, many of which are ARC (Australian Research Council) funded, provide a diversity of research opportunities for postgraduate students.

MASTER OF APPLIED SCIENCE
Townsville

CORE SUBJECT
MB5300:03 Sampling and Experimental Design

Plus

OPTIONAL SUBJECTS
18 credit points selected from the following subjects:

Study Period 1
BS5001:03 Quantitative Methods in Biology
MB5003:03 Fisheries Science
MB5055:03 Biological Oceanography
MB5070:03 Marine Evolution and Biogeography
MB5160:03 Evolution and Ecology of Reef Fishes
MB5400:03 Life History and Evolution of Reef Corals

Study Period 2
MB5004:03 Marine Conservation Biology
MB5190:03 Coral Reef Ecology
MB5230:03 Design and Analyses in Ecological Studies
MB5260:03 Ecological Dynamics: An Introduction to Modelling
MB5270:03 Coastal and Estuarine Ecosystems
MB5380:03 Marine and Terrestrial Invertebrate Biology

Block Mode Subjects
MB5005:03 Scientific Diving and Diving Physiology
MB5310:03 Fisheries Biology, Assessment and Management (odd years)
MB5340:03 Ecological Dynamics: Modelling With Data (even years)
MB5350:03 Current Issues in Coral Reef Ecology (odd years)
MB5370:03 Techniques in Marine Biology
MB5430:03 Behaviour of Marine Animals (even years)
MB5450:03 Molecular Approaches to Marine Ecology and Evolution

Plus

Level 5 MB subjects to complete the award requirements of 36 credit points. Subjects may, with the approval of the School of Marine and Tropical Biology, include a maximum of 15 credit points of research subjects.

GRADUATE DIPLOMA OF SCIENCE
Townsville

CORE SUBJECTS
MB5300:03 Sampling and Experimental Design

Plus

OPTIONAL SUBJECTS
plus 21 credit points selected from the following subjects:

Study Period 1
BS5001:03 Quantitative Methods in Biology
MB5003:03 Fisheries Science
MB5055:03 Biological Oceanography
MB5070:03 Marine Evolution and Biogeography
MB5160:03 Evolution and Ecology of Reef Fishes
MB5400:03 Life History and Evolution of Reef Corals

Study Period 2
MB5004:03 Marine Conservation Biology
MB5190:03 Coral Reef Ecology
MB5230:03 Design and Analyses in Ecological Studies
MB5260:03 Ecological Dynamics: An Introduction to Modelling
MB5270:03 Coastal and Estuarine Ecosystems
MB5380:03 Marine and Terrestrial Invertebrate Biology

Block Mode Subjects
MB5005:03 Scientific Diving and Diving Physiology
MB5310:03 Fisheries Biology, Assessment and Management (odd years)
MB5340:03 Ecological Dynamics: Modelling With Data (even years)
MB5350:03 Current Issues in Coral Reef Ecology (odd years)
MB5370:03 Techniques in Marine Biology
MB5430:03 Behaviour of Marine Animals (even years)
MB5450:03 Molecular Approaches to Marine Ecology and Evolution

GRADUATE CERTIFICATE OF SCIENCE
Townsville

CORE SUBJECTS
MB5300:03 Sampling and Experimental Design

Plus

OPTIONAL SUBJECTS
9 credit points selected from the following subjects:

Study Period 1
BS5001:03 Quantitative Methods in Biology
MB5003:03 Fisheries Science
MB5055:03 Biological Oceanography
MB5070:03 Marine Evolution and Biogeography
MB5160:03 Evolution and Ecology of Reef Fishes
MB5400:03 Life History and Evolution of Reef Corals

Study Period 2
MB5004:03 Marine Conservation Biology
MB5190:03 Coral Reef Ecology
MB5230:03 Design and Analyses in Ecological Studies
MB5260:03 Ecological Dynamics: An Introduction to Modelling
MB5270:03 Coastal and Estuarine Ecosystems
MB5380:03 Marine and Terrestrial Invertebrate Biology

Block Mode Subjects
MB5005:03 Scientific Diving and Diving Physiology
MB5310:03 Fisheries Biology, Assessment and Management (odd years)
MB5340:03 Ecological Dynamics: Modelling With Data (even years)
MB5350:03 Current Issues in Coral Reef Ecology (odd years)
MB5370:03 Techniques in Marine Biology
MB5430:03 Behaviour of Marine Animals (even years)
MB5450:03 Molecular Approaches to Marine Ecology and Evolution

MASTER OF SCIENCE AND DOCTOR OF PHILOSOPHY
Students can study for the degrees of Master of Science and Doctor of Philosophy under the supervision of one or more members of the academic or research staff in Marine Biology. Associate supervision by staff members of other University schools and by staff members of the Australian Institute of Marine Science may be arranged. Students seeking enrolment in the Master of Science may be required to undertake a Graduate Diploma of Research Methods or Graduate Certificate of Research Methods within the Tropical Marine Ecology and Fisheries Biology program.

MATHEMATICS AND STATISTICS

The discipline of Mathematics and Statistics is contained in the School of Mathematics, Physics and Information Technology.

A variety of postgraduate courses are available for students wishing to pursue a higher degree in Mathematics and Statistics. These include:

- Doctor of Philosophy
- Master of Applied Science
- Master of Science

- Graduate Diploma of Science

MASTER OF SCIENCE AND DOCTOR OF PHILOSOPHY

The Master of Science and the Doctor of Philosophy degrees consist of directed study and a research project. They both provide research training in modern mathematics and statistics.

Admission to the course requires an honours degree or equivalent in mathematics or a closely related discipline. A minimum of one academic year of full-time study for a Master's degree and three years for a doctorate are required to complete the course. Programs of study are subject to the approval of the Head of School.

MASTER OF APPLIED SCIENCE

The Master of Applied Science in Mathematics and Statistics provides specialist training in the principles of modern mathematics and statistics, together with a project in an area of current research.

Admission to the course requires a degree or equivalent in an appropriate discipline (usually in the mathematical, biological, chemical, environmental or health sciences). The minimum mathematical prerequisite is at least two teaching periods of mathematics at university level. Normally, 18 months of full-time study, or three years of part-time study will be required to complete the course. Programs of study are subject to the approval of the Head of School.

The course comprises 36 credit points of coursework which will normally be chosen in Mathematics at graduate and upper undergraduate level. Typically, the project will count for a total of 12-15 credit points. The course may also include up to 6 credit points in a related discipline.

Select 24 credit points from the following:	
MA5101:03	Mathematical Methods
MA5402:03	Time Series and Spatial Data Analysis
MA5403:03	Applied Statistical Computation
MA5405:03	Data Mining
MA5410:03	Mathematical Statistics
MA5411:03	Statistical Consulting
MA5611:03	Continuum Mechanics
MA5621:03	General Relativity
At least 12 credit points from:	
MA5030:03	Literature Review
MA5050:06	Research Project A
MA5051:06	Research Project B

GRADUATE DIPLOMA OF SCIENCE

The Graduate Diploma of Science in Mathematics and Statistics provides specialist training in the principles of modern mathematics and statistics.

Admission to the course requires a degree or equivalent in an appropriate discipline (usually in the mathematical, biological, chemical, environmental or health sciences fields). The minimum mathematical prerequisite is at least two teaching periods of mathematics at university level. Normally, one year of full-time study, or two years of part-time study will be required to complete the course. Programs of study are subject to the approval of the Head of School.

The course comprises 24 credit points of coursework which will normally be chosen in Mathematics at graduate and upper undergraduate level. The course may also include up to 6 credit points in a related discipline.

Subject to the approval of the Head of School, students enrolled in the course may be permitted to transfer to the Master of Applied Science degree on completion of one teaching period of the course with good grades.

Select 24 credit points from the following:	
MA5101:03	Mathematical Methods
MA5402:03	Time Series and Spatial Data Analysis
MA5403:03	Applied Statistical Computation
MA5405:03	Data Mining
MA5410:03	Mathematical Statistics
MA5411:03	Statistical Consulting
MA5611:03	Continuum Mechanics
MA5621:03	General Relativity

MECHANICAL ENGINEERING

(See Engineering)

NATURAL RESOURCE MANAGEMENT

(See also Environmental Science)

Coordinated by the School of Earth and Environmental Sciences, the graduate Certificate of Science, the Graduate Diploma of Science and Master of Applied Science programs in Natural Resource Management aim to educate students in the background, principles and practices of natural resource management applied to tropical systems. The wide range of electives allows students to specialise in the management of marine or terrestrial environments.

Within the broad framework of the Award Requirements, each student's program, including weighting of coursework and research, can be tailored to the individual candidate's background and requirements.

Research degrees in natural resource management may be undertaken through a Doctor of Philosophy or a Master of Science program in environmental studies.

Further details of opportunities for coursework degrees can be obtained by contacting the Course Coordinator in the School of Earth and Environmental Sciences and all students should consult the Course Coordinator when arranging their subject enrolment.

MASTER OF APPLIED SCIENCE

Townsville, Cairns

BS5001:03	Quantitative Methods in Biology
EV5007:03	Introduction to Research
Plus	
At least four of the following:	
EV5001:03	Environmental and Regional Planning
EV5002:03	Environmental Impact Assessment
EV5003:03	Environmental Economics
EV5100:03	Coastal Management
or	
EV5701:03	Managing Coastal and Marine Environments
EV5200:03	Terrestrial Resource Management
EV5203:03	Conserving Marine Wildlife: Sea Mammals, Birds, Reptiles
EV5205:03	Conserving Tropical Rainforests
EV5252:03	Indigenous Environmental Management
EV5254:03	Tropical Agroforestry
EV5255:03	Managing Rainforest Wildlife
EV5401:03	Coasts and Catchments: Geomorphology and Management
EV5601:03	Social Impact Assessment: Environmental Management
LA5902:03	Environmental Law and Policy
Plus	

18 credit points of level 5 AQ, BT, BZ, CP, EA, EV, MA, MB, PH, ZL electives that may, with the approval of the School of Earth and Environmental Sciences include a minimum of 12 and a maximum of 15 credit points of research subjects.

GRADUATE DIPLOMA OF SCIENCE

Townsville, Cairns

BS5001:03	Quantitative Methods in Biology
EV5007:03	Introduction to Research
Plus	
At least four of the following:	
EV5001:03	Environmental and Regional Planning
EV5002:03	Environmental Impact Assessment
EV5003:03	Environmental Economics
EV5100:03	Coastal Management
or	
EV5701:03	Managing Coastal and Marine Environments

EV5200:03	Terrestrial Resource Management
EV5203:03	Conserving Marine Wildlife: Sea Mammals, Birds, Reptiles
EV5205:03	Conserving Tropical Rainforests
EV5252:03	Indigenous Environmental Management
EV5254:03	Tropical Agroforestry
EV5255:03	Managing Rainforest Wildlife
EV5401:03	Coasts and Catchments: Geomorphology and Management
EV5601:03	Social Impact Assessment: Environmental Management
LA5902:03	Environmental Law and Policy

Plus

6 credit points of level 5 AQ, BT, BZ, CP, EA, EV, MA, MB, PH, ZL electives that may, with the approval of the School of Earth and Environmental Sciences, include EV5910:03 and EV5920:03.

GRADUATE CERTIFICATE OF SCIENCE

Townsville, Cairns

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

BS5001:03	Quantitative Methods in Biology
EV5001:03	Environmental and Regional Planning
EV5002:03	Environmental Impact Assessment
EV5003:03	Environmental Economics
EV5100:03	Coastal Management
or	
EV5701:03	Managing Coastal and Marine Environments
EV5200:03	Terrestrial Resource Management
EV5203:03	Conserving Marine Wildlife: Sea Mammals, Birds, Reptiles
EV5205:03	Conserving Tropical Rainforests
EV5252:03	Indigenous Environmental Management
EV5254:03	Tropical Agroforestry
EV5255:03	Managing Rainforest Wildlife
EV5401:03	Coasts and Catchments: Geomorphology and Management
EV5601:03	Social Impact Assessment: Environmental Management
LA5902:03	Environmental Law and Policy

OCEANOGRAPHY AND METEOROLOGY

The study of Oceanography and Meteorology is contained in the School of Mathematics, Physics and Information Technology.

A variety of postgraduate courses are available for students wishing to pursue a higher degree in Oceanography and Meteorology. These include:

Doctor of Philosophy.
Master of Applied Science
Master of Science
Graduate Diploma of Science

MASTER OF SCIENCE AND DOCTOR OF PHILOSOPHY

The Master of Science and the Doctor of Philosophy degrees consist of direct study and a research project. They both provide research training in Applied Physics, in Physical Oceanography and/or Meteorology.

Admission to the course requires an honours degree or equivalent in Physics or a closely related discipline. A minimum of one academic year of full-time study for a masters degree and three years for a doctorate are required to complete the course. Programs of study are subject to the approval of the Head of School.

MASTER OF APPLIED SCIENCE

This course, taken by coursework and minor project, provides training in the background, principles and practices of physics.

Admission to the course requires a degree in an appropriate discipline (normally in physical sciences, mathematics or engineering).

CORE SUBJECT

PH5008:03	Physical Oceanography

Plus

Select 21 credit point from the following:

MA5020:03	Special Study A *
MA5021:03	Special Study B *
MA5621:03	General Relativity
PH5004:03	Electronics
PH5006:03	Data Analysis
PH5007:03	Radar Techniques
PH5008:03	Physical Oceanography
PH5010:03	Directed Study
PH5011:03	Geophysical Fluid Dynamics
PH5012:03	Meteorology
PH5013:03	Quantum Mechanics

Complete 12 credit points of the research project:

PH5050:06	Research Project A
PH5051:06	Research Project B

*Note: MA5020 and MA5021 may be completed if the mathematics background of the student is not satisfactory.

GRADUATE DIPLOMA OF SCIENCE

The Graduate Diploma of Science in Oceanography and Meteorology by coursework and minor project provides specialist training in the background, principles and practices of applied physics, specialising in Environmental Physics.

Physics has research activities in coastal oceanography, micro- and meso-scale meteorology, air-sea interactions and radar remote sensing and it is likely that project work would be offered in these areas.

Students are urged to discuss their study program with the Head of Physics at an early stage. Within the broad framework of the Award Requirements, each student's program, including weighting of coursework and research, can be tailored to the individual student's background and requirements. The course comprises 24 credit points.

CORE SUBJECTS

PH5008:03	Physical Oceanography
PH5030:03	Literature Review
PH5050:06	Research Project A

Plus

Select 12 credit points from the following:

MA5020:03	Special Study A *
MA5021:03	Special Study B *
PH5004:03	Electronics
PH5006:03	Data Analysis
PH5007:03	Radar Techniques
PH5010:03	Directed Study
PH5013:03	Quantum Mechanics

*Note: MA5020 and MA5021 are completed only when the mathematics background of the student is not satisfactory.

PHYSICS

Physics offers full-time or part-time research to qualify for the degree of Master of Applied Science, Master of Science or Doctor of Philosophy. Students graduating with a Bachelor of Science with Honours at a suitably high level from other universities may normally carry out research work in Physics to qualify for the degree of Master of Science or Doctor of Philosophy. Students graduating from other universities without honours would normally be considered for entry to a Graduate Diploma of Science in Applied Physics.

MASTER OF SCIENCE AND DOCTOR OF PHILOSOPHY

The Master of Science and the Doctor of Philosophy degrees consist of direct study and a research project. They both provide research training in Physics and Applied Physics. Admission to the course requires a degree or equivalent in Physics or a closely related discipline. A minimum of one academic year of full-time study for a Masters degree and three years for a doctorate are required to complete the course. Programs of study are subject to the approval of the Head of the School.

MASTER OF APPLIED SCIENCE

This course, taken by coursework and minor project, provides training in the background, principles and practices of physics.

Admission to the course required a degree in an appropriate discipline (normally in physical sciences, mathematics or engineering).

Select 24 credit points from the following:

MA5020:03	Special Study A *
MA5021:03	Special Study B *
MA5621:03	General Relativity
PH5004:03	Electronics
PH5006:03	Data Analysis
PH5007:03	Radar Techniques
PH5008:03	Physical Oceanography
PH5010:03	Directed Study
PH5011:03	Geophysical Fluid Dynamics
PH5012:03	Meteorology
PH5013:03	Quantum Mechanics

Complete 12 credit points of the research project:

PH5050:06	Research Project A
PH5051:06	Research Project B

*Note: MA5020 and MA5021 may be completed if the mathematics background of the student is not satisfactory.

GRADUATE DIPLOMA OF SCIENCE

This course, taken by coursework and minor project, provides specialist training in the background, principles and practices of applied physics.

Admission to the course requires a degree in an appropriate discipline (normally in physical sciences, mathematics or engineering). Please refer to the Award Requirements in this handbook.

Students enrolled in the course may be permitted to transfer to the Master of Science (Physics) degree course on the completion, with good grades, of at least three graduate coursework subjects.

Select 15 credit points from the following:

MA5020:03	Special Study A *
MA5021:03	Special Study B *
MA5621:03	General Relativity
PH5004:03	Electronics
PH5006:03	Data Analysis
PH5007:03	Radar Techniques
PH5008:03	Physical Oceanography
PH5010:03	Directed Study
PH5011:03	Geophysical Fluid Dynamics
PH5012:03	Meteorology
PH5013:03	Quantum Mechanics

Plus

9 credit points to complete the research project as follows:

PH5030:03	Literature Review
PH5050:06	Research Project A

*Note: MA5020 and MA5021 may be completed if the mathematics background of the student is not satisfactory.

PROTECTED AREA MANAGEMENT

(See also Environmental Science)

Coordinated by the School of Earth and Environmental Sciences, the Graduate Certificate of Science, the Graduate Diploma of Science and Master of Applied Science in Protected Area Management provide specialist training in the background, principles and practice of protected area management with particular emphasis on tropical environments. The wide range of electives allows students to specialise in the management of marine or terrestrial environments.

Within the broad framework of the Award Requirements, each student's program, including weighting of coursework and research, can be tailored to the individual candidate's background and requirements.

Research degrees in protected area management may be undertaken as a Doctor of Philosophy or a Master of Science program in environmental studies.

Further details of opportunities for coursework degrees can be obtained by contacting the Course Coordinator in the School of Earth and Environmental Sciences and all students should consult the Course Coordinator when arranging their subject enrolment.

MASTER OF APPLIED SCIENCE
Townsville, Cairns

At least 9 credit point to be selected from:

EV5007:03	Introduction to Research
EV5208:03	World Heritage and National Estate Processes
EV5209:03	Principles and Practices of Protected Area Management
EV5210:03	Management of Marine Protected Areas
EV5251:03	Environmental Impacts of Human Activities in Protected Areas
TO5002:03	Introduction to Tourism and the Environment

Plus

At least 9 credit points from the following:

EV5100:03	Coastal Management
or	
EV5701:03	Managing Coastal and Marine Environments
EV5002:03	Environmental Impact Assessment
EV5003:03	Environmental Economics
EV5200:03	Terrestrial Resource Management
EV5203:03	Conserving Marine Wildlife: Sea Mammals, Birds, Reptiles
EV5205:03	Conserving Tropical Rainforests
EV5252:03	Indigenous Environmental Management
EV5255:03	Managing Rainforest Wildlife
EV5505:03	Introduction to Geographic Information Systems
SS5100:03	Qualitative Research in Social Science
TO5005:03	Managing Tourism in Protected Areas
or	
TO5025:03	Ecotourism and Wildlife Tourism Management

Plus

18 credit points of subjects that may, upon the approval of the School of Earth and Environmental Sciences include a minimum of 12 and a maximum of 15 credit points of research subjects.

GRADUATE DIPLOMA OF SCIENCE
Townsville, Cairns

At least 9 credit point to be selected from:

EV5007:03	Introduction to Research
EV5208:03	World Heritage and National Estate Processes
EV5209:03	Principles and Practices of Protected Area Management
EV5210:03	Management of Marine Protected Areas
EV5251:03	Environmental Impacts of Human Activities in Protected Areas
TO5002:03	Introduction to Tourism and the Environment

Plus

At least 9 credit points from the following:

EV5002:03	Environmental Impact Assessment
EV5100:03	Coastal Management
or	
EV5701:03	Managing Coastal and Marine Environments
EV5200:03	Terrestrial Resource Management
EV5203:03	Conserving Marine Wildlife: Sea Mammals, Birds, Reptiles
EV5205:03	Conserving Tropical Rainforests
EV5252:03	Indigenous Environmental Management
EV5255:03	Managing Rainforest Wildlife
SS5100:03	Qualitative Research in Social Science
TO5005:03	Managing Tourism in Protected Areas
or	
TO5025:03	Ecotourism and Wildlife Tourism Management

Plus

6 credit points of subjects that may, with the approval of the School of Earth and Environmental Sciences include the research subjects EV5910:03 and EV5920:03.

GRADUATE CERTIFICATE OF SCIENCE

Townsville, Cairns

Choose at least one subject (3 credit points) from:

EV5200:03	Terrestrial Resource Management
EV5205:03	Conserving Tropical Rainforests
EV5210:03	Management of Marine Protected Areas
EV5251:03	Environmental Impacts of Human Activities in Protected Areas

Plus

EV5208:03	World Heritage and National Estate Processes
or	
EV5209:03	Principles and Practices of Protected Area Management

Plus

Subjects to complete the award requirements of 12 credit points from the following:

EV5100:03	Coastal Management
or	
EV5701:03	Managing Coastal and Marine Environments
EV5203:03	Conserving Marine Wildlife: Sea Mammals, Birds, Reptiles
EV5252:03	Indigenous Environmental Management
EV5255:03	Managing Rainforest Wildlife
TO5002:03	Introduction to Tourism and the Environment

SPATIAL ANALYSIS

(See Geographic Information Systems and Spatial Analysis)

STATISTICS

(See Mathematics)

TROPICAL AGRICULTURE

The Master of Applied Science, Graduate Diploma of Science and Graduate Certificate of Science in Tropical Agriculture provide students with general and specific skills in the science of agriculture through coursework subjects of a generic and specialised nature with an emphasis on tropical systems.

Prospective students should consult the Course Coordinator. Within the broad framework of the Award Requirements, each student's program, including the relative component of coursework and research, can be tailored to the individual student's background and requirements.

MASTER OF APPLIED SCIENCE

Townsville, Cairns

The Master of Applied Science in Tropical Agriculture is three teaching periods full time or six teaching periods part time. Admission to the course requires a Bachelor of Science, Bachelor of Applied Science or other qualifications deemed appropriate by the faculty.

CORE SUBJECT

BS5001:03	Quantitative Methods in Biology

Plus

At least 6 credit points selected from:

AG5002:03	Advanced Ecological Economics of Agricultural Systems
AG5004:03	Advanced Crops and Products
AG5005:03	Advanced Agroecology
BZ5420:03	Genetics for Biology
EV5254:03	Tropical Agroforestry

Plus

At least 9 credit points selected from:

BT5010:03	Advanced Biology of Plant Survival
BT5106:03	Contemporary Issues in Agriculture (not offered in 2009)
BZ5440:03	Ecology and Conservation
BZ5450:03	Ecological and Conservation Genetics
EV5003:03	Environmental Economics

Plus

Level 5 AG, AQ, BC, BT, BZ, EA, EV, MA, MI, TV, ZL subjects to complete the award requirements of 36 credit points. Subjects may, with the approval of the School of Marine and Tropical Biology, include a maximum of 15 credit points of research subjects.

GRADUATE DIPLOMA OF SCIENCE

Townsville, Cairns

The Graduate Diploma of Science in Tropical Agriculture is two teaching periods full time or four teaching periods part time. Admission to the course requires a Bachelor of Science, Bachelor of Applied Science or other qualifications deemed appropriate by the faculty.

CORE SUBJECTS

BS5001:03	Quantitative Methods in Biology

Plus

At least 6 credit points selected from:

AG5002:03	Advanced Ecological Economics of Agricultural Systems
AG5004:03	Advanced Crops and Products
AG5005:03	Advanced Agroecology
BZ5420:03	Genetics for Biology
EV5254:03	Tropical Agroforestry

Plus

Level 5 AG, AQ, BC, BT, BZ, EA, EV, MA, MI, TV, ZL subjects to complete the award requirements of 24 credit points. Subjects may, with the approval of the School of Marine and Tropical Biology, include a maximum of 6 credit points of research subjects.

GRADUATE CERTIFICATE OF SCIENCE

Townsville, Cairns

The Graduate Certificate of Science in Tropical Agriculture is one teaching period full time or two teaching periods part time. Admission to the course requires a Bachelor of Science, Bachelor of Applied Science or other qualifications deemed appropriate by the faculty.

CORE SUBJECTS

BS5001:03	Quantitative Methods in Biology
or	
MB5230:03	Design and Analyses in Ecological Studies
or	
MB5300:03	Sampling and Experimental Design
AG5002:03	Advanced Ecological Economics of Agricultural Systems
or	
AG5004:03	Advanced Crops and Products
or	
BZ5501:03	Special Topic 1
AG5005:03	Advanced Agroecology
or	
BZ5502:03	Special Topic 2
or	
EV5254:03	Tropical Agroforestry

Plus

3 credit points selected from the above, not taken as core subjects, or from:

Level 5 AG, AQ, BC, BT, BZ, EA, EV, MA, MI, TV, ZL subjects to complete the award requirements of 12 credit points

MASTER OF SCIENCE AND DOCTOR OF PHILOSOPHY

Students can study for the degrees of Master of Science and Doctor of Philosophy under the supervision of one or more members of the academic or research staff in the School of Marine and Tropical Biology. Associate supervision by staff members of other University schools and by staff members of relevant agencies may be arranged. Students seeking enrolment in the Master of Science may be required to

undertake a Graduate Diploma of Research Methods or Graduate Certificate of Research Methods.

TROPICAL ECOLOGY

The Master of Applied Science, Graduate Diploma of Science of Tropical Ecology and the Graduate Certificate of Science of Tropical Ecology provide students with general and specific skills in ecology through coursework subjects of a generic and specialised nature with a tropical emphasis. Specialisation is possible in a variety of disciplines.

Prospective students should consult the Course Coordinator. Within the broad framework of the Award Requirements, each student's program, including the relative component of coursework and research, can be tailored to the individual student's background and requirements.

MASTER OF APPLIED SCIENCE

Townsville, Cairns

The Master of Applied Science is three teaching periods full time or six teaching periods part time. Admission to the course requires a Bachelor of Science, Bachelor of Applied Science or other qualifications deemed appropriate by the faculty

CORE SUBJECT

BS5001:03 Quantitative Methods in Biology

Plus

At least 6 credit points selected from:

BT5400:03 Advanced Tropical Flora of Australia
BZ5210:03 Ecology of Tropical Forest Ecosystems
BZ5212:03 Tropical Wetlands Ecology and Management
BZ5220:03 Rainforest Populations and Communities
BZ5400:03 Advanced Population and Community Ecology
BZ5440:03 Ecology and Conservation
BZ5450:03 Ecological and Conservation Genetics
BZ5490:03 Advanced Tropical Ecosystems and Climate Change
ZL5205:03 Wildlife Ecology and Management

Plus

At least 6 credit points selected from:

AG5002:03 Advanced Ecological Economics of Agricultural Systems
AG5005:03 Advanced Agroecology
BT5010:03 Advanced Biology of Plant Survival
BZ5215:03 Conservation Biology
BZ5420:03 Genetics for Biology
MB5300:03 Sampling and Experimental Design
ZL5005:03 Marine and Terrestrial Invertebrate Biology
ZL5026:03 Animal Behaviour
ZL5061:03 Topics in Animal Behaviour (not offered in 2009)
ZL5203:03 The Australian Vertebrate Fauna
ZL5211:03 Tropical Australian Herpetology
ZL5501:03 Tropical Entomology

Plus

Level 5 AG, BT, BZ, ZL subjects to complete the award requirements of 36 credit points. Subjects may, with the approval of the School of Marine and Tropical Biology, include a maximum of 15 credit points of research subjects.

GRADUATE DIPLOMA OF SCIENCE

Townsville, Cairns

The Graduate Diploma of Applied Science is two teaching periods full time or four teaching periods part time. Admission to the course requires a Bachelor of Science, Bachelor of Applied Science or other qualifications deemed appropriate by the faculty.

CORE SUBJECT

BS5001:03 Quantitative Methods in Biology

Plus

At least 6 credit points selected from:

BT5400:03 Advanced Tropical Flora of Australia
BZ5210:03 Ecology of Tropical Forest Ecosystems
BZ5212:03 Tropical Wetlands Ecology and Management
BZ5220:03 Rainforest Populations and Communities
BZ5400:03 Advanced Population and Community Ecology
BZ5440:03 Ecology and Conservation
BZ5450:03 Ecological and Conservation Genetics
BZ5490:03 Advanced Tropical Ecosystems and Climate Change
ZL5205:03 Wildlife Ecology and Management

Plus

At least 6 credit points selected from:

AG5002:03 Advanced Ecological Economics of Agricultural Systems
AG5005:03 Advanced Agroecology
BZ5215:03 Conservation Biology
BZ5420:03 Genetics for Biology
MB5300:03 Sampling and Experimental Design
ZL5005:03 Marine and Terrestrial Invertebrate Biology
ZL5026:03 Animal Behaviour
ZL5061:03 Topics in Animal Behaviour (not offered in 2009)
ZL5203:03 The Australian Vertebrate Fauna
ZL5211:03 Tropical Australian Herpetology

Plus

Level 5 AG, BT, BZ, ZL subjects to complete the award requirements of 24 credit points. Subjects may, with the approval of the School of Marine and Tropical Biology, include a maximum of 6 credit points of research subjects.

GRADUATE CERTIFICATE OF SCIENCE

Townsville, Cairns

The Graduate Certificate of Science is one teaching period full time or two teaching periods part time. Admission to the course requires a Bachelor of Science, Bachelor of Applied Science or other qualifications deemed appropriate by the faculty.

CORE SUBJECT

BS5001:03 Quantitative Methods in Biology

or

MB5230:03 Design and Analyses in Ecological Studies

or

MB5300:03 Sampling and Experimental Design

Plus

At least 6 credit points selected from:

BT5010:03 Advanced Biology of Plant Survival
BT5400:03 Advanced Tropical Flora of Australia
BZ5210:03 Ecology of Tropical Forest Ecosystems
BZ5212:03 Tropical Wetlands Ecology and Management
BZ5215:03 Conservation Biology
BZ5220:03 Rainforest Populations and Communities
BZ5400:03 Advanced Population and Community Ecology
BZ5440:03 Ecology and Conservation
BZ5450:03 Ecological and Conservation Genetics
BZ5490:03 Advanced Tropical Ecosystems and Climate Change
ZL5205:03 Wildlife Ecology and Management

Plus

Level 5 AG, BT, BZ, ZL subjects to complete the award requirements of 12 credit points.

TROPICAL ENVIRONMENTAL MANAGEMENT

DOCTOR OF TROPICAL ENVIRONMENTAL MANAGEMENT

Townsville, Cairns

The Doctor of Tropical Environmental Management is a research professional doctorate which includes 24 credit points of coursework and 48 credit points of research (36 research credit points and 12 credit points of professional placement). It requires students to undertake some coursework study at the University of Queensland and Charles Darwin University during their candidature at James Cook University. (at least one subject from each of UQ and CDU).

Tropical biology, environmental management and geography are research and teaching strengths in this faculty. This course will draw upon these strengths, and complementary teaching and research strengths at the University of Queensland and Charles Darwin University, and will provide students with a savanna-wide perspective on natural resource management. The course as a whole provides

increased opportunities for links between tertiary education institutions and the land management agencies within the region.

TROPICAL MARINE ECOLOGY AND FISHERIES BIOLOGY

JCU enjoys national and international recognition for its teaching and research in tropical marine biology. The School of Marine and Tropical Biology offers both research and coursework postgraduate programs dedicated to the study of tropical shallow water marine systems, with an emphasis on whole-organism biology, the ecology and biogeography of tropical marine organisms and the evolutionary mechanisms that underlie their diversity.

Coursework postgraduate programs consist of introductory subjects (of one teaching period duration) and more advanced block subjects in a variety of areas including quantitative marine ecology, fisheries science and marine conservation. Other subjects focus on the life histories, biogeography and evolution of tropical marine animals. Postgraduate coursework emphasises quantitative and analytical approaches through specialist subjects in sampling design and modelling.

Research postgraduate programs benefit from the unparalleled opportunities provided by JCU's proximity to the Great Barrier Reef which facilitates investigations of ecological and evolutionary questions for reef fish, corals and other marine animals. Current activities within the school (many of which are ARC funded) provide a diversity of research opportunities for postgraduate students.

MASTER OF APPLIED SCIENCE
Townsville

CORE SUBJECT
MB5300:03 Sampling and Experimental Design

Plus

18 credit points selected from the following subjects:

Study Period 1
BS5001:03 Quantitative Methods in Biology
MB5003:03 Fisheries Science
MB5055:03 Biological Oceanography
MB5070:03 Marine Evolution and Biogeography
MB5160:03 Evolution and Ecology of Reef Fishes
MB5400:03 Life History and Evolution of Reef Corals

Study Period 2
MB5004:03 Marine Conservation Biology
MB5190:03 Coral Reef Ecology
MB5230:03 Design and Analyses in Ecological Studies
MB5260:03 Ecological Dynamics: An Introduction to Modelling
MB5270:03 Coastal and Estuarine Ecosystems
MB5380:03 Marine and Terrestrial Invertebrate Biology

Block Mode Subjects
MB5005:03 Scientific Diving and Diving Physiology
MB5310:03 Fisheries Biology, Assessment and Management (odd years)
MB5340:03 Ecological Dynamics: Modelling With Data (even years)
MB5350:03 Current Issues in Coral Reef Ecology (odd years)
MB5370:03 Techniques in Marine Biology
MB5430:03 Behaviour of Marine Animals (even years)
MB5450:03 Molecular Approaches to Marine Ecology and Evolution

Plus

15 credit points of level 5 MB subjects to complete the award requirements of 36 credit points. Subjects may, with the approval of the School of Marine and Tropical Biology, include a maximum of 15 credit points of research subjects.

GRADUATE DIPLOMA OF SCIENCE
Townsville

CORE SUBJECT
MB5300:03 Sampling and Experimental Design

Plus

OPTIONAL SUBJECTS
21 credit points selected from the following subjects:

Study Period 1
BS5001:03 Quantitative Methods in Biology
MB5003:03 Fisheries Science
MB5055:03 Biological Oceanography
MB5070:03 Marine Evolution and Biogeography
MB5160:03 Evolution and Ecology of Reef Fishes
MB5400:03 Life History and Evolution of Reef Corals

Study Period 2
MB5004:03 Marine Conservation Biology
MB5190:03 Coral Reef Ecology
MB5230:03 Design and Analyses in Ecological Studies
MB5260:03 Ecological Dynamics: An Introduction to Modelling
MB5270:03 Coastal and Estuarine Ecosystems
MB5380:03 Marine and Terrestrial Invertebrate Biology

Block Mode Subjects
MB5005:03 Scientific Diving and Diving Physiology
MB5310:03 Fisheries Biology, Assessment and Management (odd years)
MB5340:03 Ecological Dynamics: Modelling With Data (even years)
MB5350:03 Current Issues in Coral Reef Ecology (odd years)
MB5370:03 Techniques in Marine Biology
MB5430:03 Behaviour of Marine Animals (even years)
MB5450:03 Molecular Approaches to Marine Ecology and Evolution

GRADUATE CERTIFICATE OF SCIENCE
Townsville

CORE SUBJECT
MB5300:03 Sampling and Experimental Design

Plus

OPTIONAL SUBJECTS
9 credit points selected from the following subjects:

Study Period 1
BS5001:03 Quantitative Methods in Biology
MB5003:03 Fisheries Science
MB5055:03 Biological Oceanography
MB5070:03 Marine Evolution and Biogeography
MB5160:03 Evolution and Ecology of Reef Fishes
MB5400:03 Life History and Evolution of Reef Corals

Study Period 2
MB5004:03 Marine Conservation Biology
MB5190:03 Coral Reef Ecology
MB5230:03 Design and Analyses in Ecological Studies
MB5260:03 Ecological Dynamics: An Introduction to Modelling
MB5270:03 Coastal and Estuarine Ecosystems
MB5380:03 Marine and Terrestrial Invertebrate Biology

Block Mode Subjects
MB5005:03 Scientific Diving and Diving Physiology
MB5310:03 Fisheries Biology, Assessment and Management (odd years)
MB5340:03 Ecological Dynamics: Modelling With Data (even years)
MB5350:03 Current Issues in Coral Reef Ecology (odd years)
MB5370:03 Techniques in Marine Biology
MB5430:03 Behaviour of Marine Animals (even years)
MB5450:03 Molecular Approaches to Marine Ecology and Evolution

TROPICAL PLANT SCIENCES

The Master of Applied Science, the Graduate Diploma of Science and the Graduate Certificate of Science in Tropical Plant Sciences, provide students with general and specific skills in the Tropical Plant Sciences through coursework subjects of a generic and specialised nature with an emphasis on tropical systems. Specialisation is possible in the disciplines of plant systematics and population biology, plant ecology, plant physiology and metabolism, cytology, genetics and novel crop development, marine and freshwater plant biology, tropical soils and the theoretical and applied aspects of tropical agroforestry, tropical crops and pastures and horticulture.

Prospective students should consult the Course Coordinator. Within the broad framework of the Award Requirements, each student's program, including the relative component of coursework and research, can be tailored to the individual student's background and requirements.

MASTER OF APPLIED SCIENCE

Townsville, Cairns

The Master of Applied Science in Tropical Plant Sciences is three teaching periods full time or six teaching periods part time. Admission to the course requires a Bachelor of Science, Bachelor of Applied Science or other qualifications deemed appropriate by the faculty.

CORE SUBJECT

BS5001:03 Quantitative Methods in Biology

BT5010:03 Advanced Biology of Plant Survival
or
BT5400:03 Advanced Tropical Flora of Australia

BZ5210:03 Ecology of Tropical Forest Ecosystems
or
BZ5490:03 Advanced Tropical Ecosystems and Climate Change

Plus

At least 12 credit points selected from:

AG5001:03 Advanced Tropical Crops and Pastures (not offered in 2009)
AG5002:03 Advanced Ecological Economics of Agricultural Systems
AG5004:03 Advanced Crops and Products
BZ5212:03 Tropical Wetlands Ecology and Management
BZ5215:03 Conservation Biology
BZ5220:03 Rainforest Populations and Communities
BZ5440:03 Ecology and Conservation
BZ5450:03 Ecological and Conservation Genetics
MB5300:03 Sampling and Experimental Design

Plus

Level 5 AG, BT, BZ subjects to complete the award requirements of 36 credit points. Subjects may, with the approval of the School of Marine and Tropical Biology, include a maximum of 15 credit points of research subjects.

GRADUATE DIPLOMA OF SCIENCE

Townsville, Cairns

The Graduate Diploma of Science in Tropical Plant Sciences is two teaching periods full time Admission to the course requires a Bachelor of Science, Bachelor of Applied Science or other qualifications deemed appropriate to the faculty.

CORE SUBJECTS

BS5001:03 Quantitative Methods in Biology
or
MB5300:03 Sampling and Experimental Design

BT5010:03 Advanced Biology of Plant Survival
or
BT5400:03 Advanced Tropical Flora of Australia

BZ5210:03 Ecology of Tropical Forest Ecosystems
or
BZ5490:03 Advanced Tropical Ecosystems and Climate Change

Plus

At least 9 credit points selected from:

AG5001:03 Advanced Tropical Crops and Pastures (not offered in 2009)
AG5002:03 Advanced Ecological Economics of Agricultural Systems
AG5004:03 Advanced Crops and Products
BZ5212:03 Tropical Wetlands Ecology and Management
BZ5215:03 Conservation Biology
BZ5220:03 Rainforest Populations and Communities
BZ5440:03 Ecology and Conservation
BZ5450:03 Ecological and Conservation Genetics
MB5300:03 Sampling and Experimental Design

Plus

Level 5 AG, BT, BZ subjects to complete the award requirements of 24 credit points. Subjects may, with the approval of the School of Marine and Tropical Biology, include a maximum of 6 credit points of research subjects.

GRADUATE CERTIFICATE OF SCIENCE

Townsville, Cairns

The Graduate Certificate of Science in Tropical Plant Sciences is one teaching period full time or two teaching periods part time. Admission to the course requires a Bachelor of Science, Bachelor of Applied Science or other qualifications deemed appropriate to the faculty.

CORE SUBJECTS

BS5001:03 Quantitative Methods in Biology
or
MB5230:03 Design and Analyses in Ecological Studies
or
MB5300:03 Sampling and Experimental Design

BT5010:03 Advanced Biology of Plant Survival
or
BT5400:03 Advanced Tropical Flora of Australia

BZ5210:03 Ecology of Tropical Forest Ecosystems
or
BZ5490:03 Advanced Tropical Ecosystems and Climate Change

Plus

3 credit points from the above when not taken as core subjects or from the following:

AG5001:03 Advanced Tropical Crops and Pasture (not offered in 2009)
AG5002:03 Advanced Ecological Economics of Agricultural Systems
AG5004:03 Advanced Crops and Products
AG5005:03 Advanced Agroecology
BZ5212:03 Tropical Wetlands Ecology and Management
BZ5215:03 Conservation Biology
BZ5220:03 Rainforest Populations and Communities
BZ5440:03 Ecology and Conservation
BZ5450:03 Ecological and Conservation Genetics

MASTER OF SCIENCE AND DOCTOR OF PHILOSOPHY

Students can study for the degrees of Master of Science and Doctor of Philosophy under the supervision of one or more members of the academic or research staff in the School of Marine and Tropical Biology. Associate supervision by staff members of other University schools and by staff members of relevant agencies may be arranged. Students seeking enrolment in the Master of Science may be required to undertake a Graduate Diploma of Research Methods or Graduate Certificate of Research Methods.

TROPICAL URBAN AND REGIONAL PLANNING

(See also Human Geography)

Professionally trained environmental and urban planners are increasingly coming to the fore in the process of ecologically sustainable development. The initial skills needed to assess whether development is acceptable and which elements of project design are appropriate can best be gained through a course of tertiary study. This program provides a career qualification that is widely recognised by employers.

The program, administered by the School of Earth and Environmental Sciences, may be taken towards the Graduate Certificate of Science, the Graduate Diploma of Science or Master of Applied Science as a coursework degree. The aim of the program is to provide a broadly-based postgraduate education for planners in urban, shire and regional settings, as well as to provide scope for allied professionals to widen their accreditation in the field of planning.

Research degrees in tropical urban and regional planning may be undertaken as a Doctor of Philosophy or a Master of Science program in Human Geography.

Further details of opportunities and programs in tropical urban and regional planning can be obtained by contacting the school and all students should consult the Course Coordinator when arranging their subject enrolment.

MASTER OF APPLIED SCIENCE
Townsville, Cairns

Students complete the following:
EV5001:03 Environmental and Regional Planning
EV5301:03 Urban Geography and Design
EV5603:03 Planning Legislation and Professional Practice
EV5605:03 Professional Planning Work Experience
EV5916:06 Independent Project and Dissertation Part 1
EV5926:06 Independent Project and Dissertation Part 2

Plus

At least one subject from:
EV5252:03 Indigenous Environmental Management
EV5601:03 Social Impact Assessment: Environmental Management
EV5606:03 Disasters: Vulnerability, Mitigation and Planning

Plus

At least one subject from:
EV5502:03 Advanced Geographic Information Systems
EV5503:03 GIS for Environmental Analysis
EV5505:03 Introduction to Geographic Information Systems

Plus

At least one subject from:
EV5002:03 Environmental Impact Assessment
EV5200:03 Terrestrial Resource Management
EV5205:03 Conserving Tropical Rainforests
EV5209:03 Principles and Practices of Protected Area Management
EV5210:03 Management of Marine Protected Areas
EV5251:03 Environmental Impacts of Human Activities in Protected Areas
EV5255:03 Managing Rainforest Wildlife
EV5401:03 Coasts and Catchments: Geomorphology and Management

Plus

Level 5 EV subjects to complete the award requirements of 36 credit points.
Students are advised to consult the school's website:
http://www.jcu.edu.au/ees/
for advice on selecting the campus and commencement date of the course.

GRADUATE DIPLOMA OF SCIENCE
Townsville, Cairns

Students complete the following:
EV5001:03 Environmental and Regional Planning
EV5301:03 Urban Geography and Design
EV5603:03 Planning Legislation and Professional Practice
EV5605:03 Professional Planning Work Experience
EV5901:03 Special Topic 1

Plus

One subject from:
EV5252:03 Indigenous Environmental Management
EV5601:03 Social Impact Assessment: Environmental Management
EV5606:03 Disasters: Vulnerability, Mitigation and Planning

Plus

One subject from:
EV5502:03 Advanced Geographic Information Systems
EV5503:03 GIS for Environmental Analysis
EV5505:03 Introduction to Geographic Information Systems

Plus

One subject from:
EV5002:03 Environmental Impact Assessment
EV5200:03 Terrestrial Resource Management
EV5205:03 Conserving Tropical Rainforests
EV5209:03 Principles and Practices of Protected Area Management
EV5210:03 Management of Marine Protected Areas
EV5251:03 Environmental Impacts of Human Activities in Protected Areas
EV5255:03 Managing Rainforest Wildlife
EV5401:03 Coasts and Catchments: Geomorphology and Management

Students are advised to consult the school's website:
http://www.jcu.edu.au/ees/
for advice on selecting the campus and commencement date of the course.

GRADUATE CERTIFICATE OF SCIENCE
Townsville, Cairns

Complete the following:
EV5001:03 Environmental and Regional Planning
EV5002:03 Environmental Impact Assessment
EV5301:03 Urban Geography and Design
EV5603:03 Planning Legislation and Professional Practice

Students are advised to consult the School's website:
http://www.jcu.edu.au/ees/
for advice on selecting the campus and commencement date of the course.

WILDLIFE BIOLOGY AND MANAGEMENT

The Master of Applied Science, the Graduate Diploma of Science and the Graduate Certificate of Science - Wildlife Ecology and Management, provide students with general and specific skills in the broad theoretical and practical disciplines relevant to Wildlife Ecology and Management through coursework subjects of a generic and specialised nature. Specialisation is possible in a variety of disciplines. The Master of Applied Science is three teaching periods full time or six teaching periods part time. The Graduate Diploma of Science is two teaching periods full time or four teaching periods part time. Admission to the course requires a Bachelor of Science, Bachelor of Applied Science or other qualifications deemed appropriate by the faculty.

Prospective students should consult the Course Coordinator. Within the broad framework of the Award Requirements, each student's program, including the relative component of coursework and research can be tailored to the individual students's background and requirements.

MASTER OF APPLIED SCIENCE
Townsville, Cairns

The Master of Applied Science is three teaching periods full time or six teaching periods part time. Admission to the course requires a Bachelor of Science, Bachelor of Applied Science or other qualifications deemed appropriate by the faculty.

CORE SUBJECTS
BS5001:03 Quantitative Methods in Biology
ZL5203:03 The Australian Vertebrate Fauna

Plus

15 credit points from:
BZ5210:03 Ecology of Tropical Forest Ecosystems
BZ5212:03 Tropical Wetlands Ecology and Management
BZ5215:03 Conservation Biology
BZ5220:03 Rainforest Populations and Communities
BZ5420:03 Genetics for Biology
BZ5440:03 Ecology and Conservation
BZ5450:03 Ecological and Conservation Genetics
MB5300:03 Sampling and Experimental Design
ZL5005:03 Marine and Terrestrial Invertebrate Biology
ZL5026:03 Animal Behaviour
ZL5061:03 Topics in Animal Behaviour (not offered in 2009)
ZL5205:03 Wildlife Ecology and Management
ZL5211:03 Tropical Australian Herpetology
ZL5501:03 Tropical Entomology

Plus

Level 5 AG, BT, BZ, EV, ZL subjects to complete the award requirements of 36 credit points. Subjects may, with the approval of the School of Marine and Tropical Biology, include a maximum of 15 credit points of research subjects.

GRADUATE DIPLOMA OF SCIENCE

Townsville, Cairns

The Graduate Diploma of Science is two teaching periods full time or four teaching periods part time. Admission to the course requires a Bachelor of Science, Bachelor of Applied Science or other qualifications deemed appropriate by the faculty.

CORE SUBJECTS

BS5001:03 Quantitative Methods in Biology

Plus

At least 15 credit points from:

BZ5210:03 Ecology of Tropical Forest Ecosystems
BZ5212:03 Tropical Wetlands Ecology and Management
BZ5215:03 Conservation Biology
BZ5220:03 Rainforest Populations and Communities
BZ5420:03 Genetics for Biology
BZ5440:03 Ecology and Conservation
BZ5450:03 Ecological and Conservation Genetics
MB5300:03 Sampling and Experimental Design
ZL5005:03 Marine and Terrestrial Invertebrate Biology
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
ZL5211:03 Tropical Australian Herpetology
ZL5501:03 Tropical Entomology

Plus

Level 5 BT, BZ, EV, ZL subjects to complete the award requirements of 24 credit points. Subjects may, with the approval of the School of Marine and Tropical Biology, include a maximum of 6 credit points of research subjects.

GRADUATE CERTIFICATE OF SCIENCE

Townsville, Cairns

The Graduate Certificate of Science is one teaching period full time or two teaching periods part time. Admission to the course requires a Bachelor of Science, Bachelor of Applied Science or other qualifications deemed appropriate by the faculty.

CORE SUBJECTS

BS5001:03 Quantitative Methods in Biology
or
MB5230:03 Design and Analyses in Ecological Studies
or
MB5300:03 Sampling and Experimental Design

Plus

9 credit points from:

BZ5210:03 Ecology of Tropical Forest Ecosystems
BZ5212:03 Tropical Wetlands Ecology and Management
BZ5215:03 Conservation Biology
BZ5220:03 Rainforest Populations and Communities
BZ5420:03 Genetics for Biology
BZ5440:03 Ecology and Conservation
BZ5450:03 Ecological and Conservation Genetics
ZL5005:03 Marine and Terrestrial Invertebrate Biology
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
ZL5211:03 Tropical Australian Herpetology
ZL5501:03 Tropical Entomology

Note: A maximum of 3 credit points of subjects outside the above may be taken with the approval of the School of Marine and Tropical Biology.

ZOOLOGY

The Master of Applied Science, the Graduate Diploma of Science and the Graduate Certificate of Science in Zoology provide students with general and specific skills in Zoology through coursework subjects of a generic and specialised nature with an emphasis on tropical systems. Specialisation is possible in a variety of disciplines.

Prospective students should consult the Course Coordinator. Within the broad framework of the Award Requirements, each student's program, including the relative component of coursework and research, can be tailored to the individual student's background and requirements.

MASTER OF APPLIED SCIENCE

Townsville, Cairns

The Master of Applied Science is three teaching periods full time or six teaching periods part time. Admission to the course requires a Bachelor of Science, Bachelor of Applied Science or other qualifications deemed appropriate by the faculty.

CORE SUBJECTS

BS5001:03 Quantitative Methods in Biology

Plus

9 credit points from:

ZL5005:03 Marine and Terrestrial Invertebrate Biology
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
ZL5211:03 Tropical Australian Herpetology
ZL5420:03 Ornithology
ZL5501:03 Tropical Entomology

Plus

6 credit points from:

BZ5210:03 Ecology of Tropical Forest Ecosystems
BZ5212:03 Tropical Wetlands Ecology and Management
BZ5215:03 Conservation Biology
BZ5220:03 Rainforest Populations and Communities
BZ5400:03 Advanced Population and Community Ecology
BZ5420:03 Genetics for Biology
BZ5440:03 Ecology and Conservation
BZ5450:03 Ecological and Conservation Genetics
BZ5490:03 Advanced Tropical Ecosystems and Climate Change

Plus

Level 5 BZ, MB, ZL subjects to complete the award requirements of 36 credit points. Subjects may, with the approval of the School of Marine and Tropical Biology, include a maximum of 15 credit points of research subjects.

GRADUATE DIPLOMA OF SCIENCE

Townsville, Cairns

The Graduate Diploma of Science is two teaching periods full time or 4 teaching periods part time. Admission to the course requires a Bachelor of Science, Bachelor of Applied Science or other qualifications deemed appropriate by the faculty.

CORE SUBJECTS

BS5001:03 Quantitative Methods in Biology

Plus

At least 6 credit points from:

ZL5005:03 Marine and Terrestrial Invertebrate Biology
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
ZL5211:03 Tropical Australian Herpetology
ZL5501:03 Tropical Entomology
ZL5420:03 Ornithology

Plus

At least 6 credit points from:

BZ5210:03 Ecology of Tropical Forest Ecosystems
BZ5212:03 Tropical Wetlands Ecology and Management
BZ5215:03 Conservation Biology

BZ5220:03 Rainforest Populations and Communities
BZ5400:03 Advanced Population and Community Ecology
BZ5420:03 Genetics for Biology
BZ5440:03 Ecology and Conservation
BZ5450:03 Ecological and Conservation Genetics
BZ5490:03 Advanced Tropical Ecosystems and Climate Change

Plus

Level 5 BZ, ZL Level 5 subjects to complete the award requirements of 24 credit points. Subjects may, with the approval of the School of Marine and Tropical Biology, include a maximum of 6 credit points of research subjects.

GRADUATE CERTIFICATE OF SCIENCE

Townsville, Cairns

The Graduate Certificate of Science is one teaching period full time or two teaching periods part time. Admission to the course requires a Bachelor of Science, Bachelor of Applied Science or other qualifications deemed appropriate by the faculty.

CORE SUBJECTS

BS5001:03 Quantitative Methods in Biology
or
MB5230:03 Design and Analyses in Ecological Studies
or
MB5300:03 Sampling and Experimental Design

Plus

At least 6 credit points from:
BZ5215:03 Conservation Biology
BZ5440:03 Ecology and Conservation
BZ5450:03 Ecological and Conservation Genetics
ZL5005:03 Marine and Terrestrial Invertebrate Biology
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
ZL5211:03 Tropical Australian Herpetology
ZL5420:03 Ornithology
ZL5501:03 Tropical Entomology

Plus

Any remaining credit points from:
BZ5210:03 Ecology of Tropical Forest Ecosystems
BZ5212:03 Tropical Wetlands Ecology and Management
BZ5220:03 Rainforest Populations and Communities
BZ5400:03 Advanced Population and Community Ecology
BZ5420:03 Genetics for Biology
BZ5490:03 Advanced Tropical Ecosystems and Climate Change

MASTER OF SCIENCE AND DOCTOR OF PHILOSOPHY

Students can study for the degrees of Master of Science and Doctor of Philosophy under the supervision of one or more members of the academic or research staff in the School of Marine and Tropical Biology. Associate supervision by staff members of other University schools and by staff members of relevant agencies may be arranged. Students seeking enrolment in the Master of Science may be required to undertake a Graduate Diploma of Research Methods or Graduate Certificate of Research Methods.