

# Faculty of The Sciences Postgraduate Courses 2007

Students enrolling should read this guide in conjunction with the *All Faculties Enrolment Guide and Schedule of Units 2007*, available at [www.une.edu.au/studentcentre/schedules.htm](http://www.une.edu.au/studentcentre/schedules.htm)

## Faculty of The Sciences

This guide has been designed to summarise the full range of Science courses offered by the Faculty of The Sciences, at UNE. If you are interested in any of these courses and would like further information, please contact the Student Centre. It is not a substitute for *The University of New England Handbook*. The *UNE Handbook* may be purchased from The United Campus Bookshops. Cost is approximately \$12.00 plus postage and handling fee.

The United Campus Bookshops can be contacted either by;

email: [armidale@ucb.net.au](mailto:armidale@ucb.net.au)

phone: 02 6772 3468

mail: The Manager, United Campus Bookshops, The University of New England NSW 2351

**You are strongly advised to retain a copy of this booklet and refer to it during the course of your studies.**

Note that the information about the courses in this booklet is valid for students commencing these courses in 2007, unless otherwise advised. Students who commenced studies in this courses in previous years must refer to the course advice published in the year of their commencement.

Prepared by Information Integrity,

Student Centre,

The University of New England NSW 2351 Australia

*The information contained in this Guide was correct at the time of printing. Details may be subject to change.*

## Contents

Introduction .....	4
Why Choose UNE?.....	4
Faculty of The Sciences.....	4
Schools within The Faculty of The Sciences.....	4
Research Centres associated or within The Faculty of The Sciences.....	5
Admission and Enrolment.....	5
Progression Requirements.....	5
Scholarships .....	5
Courses available in 2007.....	5
Graduate Certificate in Computer Science .....	5
Graduate Certificate in Geographic Information Science.....	5
Graduate Certificate in Information Technology .....	6
Graduate Certificate in Marine Science and Management.....	6
Graduate Certificate in Natural Resources .....	6
Graduate Certificate in Rural Science.....	6
Graduate Diploma in Computer Science.....	7
Graduate Diploma in Geographic Information Science.....	7
Graduate Diploma in Information Technology.....	8
Graduate Diploma in Marine Science and Management .....	8
Graduate Diploma in Natural Resources.....	8
Graduate Diploma in Rural Science .....	8
Graduate Diploma in Science .....	9
Master of Agriculture .....	10
Master of Computer Studies .....	10
Master of Environmental Management .....	11
Master of Geographic Information Science.....	11
Master of Information Systems .....	11
Master of Information Systems with Honours .....	12
Master of Information Technology.....	12
Master of Information Technology with Honours .....	13
Master of Marine Science and Management .....	13
Master of Natural Resources.....	14
Master of Science in Agriculture .....	14
Master of Scientific Studies.....	15
Professional Doctorate in Science.....	16
Research Courses Offered by The Faculty of The Sciences .....	16

## Introduction

### Why choose UNE?

The University of New England (UNE) is internationally recognised as one of the great teaching and research universities. What sets UNE apart is the unique living and learning experience – which you will always remember.

- As a UNE student you will be treated as a “person” not a “number” and your educational achievements will be enriched by the UNE experience, personal growth, and a network of friends that will stay with you for life.
- As a UNE graduate you will leave with highly respected academic qualifications, because UNE combines regional character with a long tradition of academic excellence and the prestige of a major university.
- You will be taught by quality academic staff who are recruited world-wide, and whose teaching is backed up by research and specialised knowledge.
- As an on-campus student you will benefit from small class sizes with personal attention and experience a unique lifestyle, whether you choose UNE’s renowned college residences or live in town.
- Studying by distance education is just as rich and very flexible, because UNE is the most experienced, and one of the largest distance educators in Australia.
- UNE graduates earn a respected degree and have enhanced employment and career prospects.

UNE offers a wide range of student support services ensuring a vibrant educational and personal experience. These benefits include excellent academic support, careers and counselling services, extensive libraries and IT facilities and support. Our traditional campus residential system and outstanding sporting and recreational facilities are among the finest in Australia.

UNE’s campus is located in Armidale midway between Sydney and Brisbane, a city of four seasons and a centre for the arts and education.

The UNE Experience stays with you for life - see why at : [www.study.une.edu.au](http://www.study.une.edu.au)

## Faculty of The Sciences

Students of the Faculty of The Sciences have access to the latest developments in research across a wide range of areas as a result of the Faculty’s close affiliation with a range of Research Institutes and Centres, such as the Australian Cotton Cooperative Research Centre, the Australian Poultry Research Centre, the Australian Sheep Industry Cooperative Research Centre, the Cooperative Research Centre for Cattle and Beef Quality and the Cooperative Research Centre for Australian Weeds Management. Further information on these and other Research Institutes and Centres of the Faculty are available on the web at:

[www.sciences.une.edu.au/f-sci/research\\_centres.asp](http://www.sciences.une.edu.au/f-sci/research_centres.asp)

The academic staff of the Faculty have been recruited world-wide and include many who are internationally recognised leaders in their particular research fields. The Faculty has a long and proud tradition of excellence in teaching and research, and its degrees are recognised internationally.

The Faculty offers a range of Graduate Certificate, Graduate Diploma, coursework only Master, and coursework plus research Master programs together with the Professional Doctorate in Science. The Faculty’s strong research reputation also attracts enrolments in our research Master and PhD programs. Further details of our research only programs are available on the University’s Research Services Directorate website:

[www.une.edu.au/research-services/phd.html](http://www.une.edu.au/research-services/phd.html)

## Schools within the Faculty of The Sciences

### School of Rural Science and Agriculture

*Agronomy and Soil Science*

*Animal Physiology*

*Animal Science*

The School of Rural Science and Agriculture provides excellent facilities for teaching and research, with the staff involved in many initiatives, including the introduction of the fodder crop triticale, the development of a tissue culture program, investigations of the causes of footrot in sheep, and the role of inhibin on ovulation in sheep, and many other areas. Students benefit from the world class facilities and staff brought together in the CRCs and other research centres listed below associated with the Faculty, as well as other Schools within the Faculty.

### School of Biological, Biomedical and Molecular Sciences

*Chemistry*

*Human Biology*

*Molecular and Cellular Biology*

*Physics and Electronics*

The School of Biological, Biomedical and Molecular Sciences teaches and conducts research covering many of the more fundamental sciences, incorporates the disciplines of Chemistry, Human Biology (including Physiology), Molecular and Cellular Biology, Physics (including Electronics), and Zoology.

### School of Environmental Sciences and Natural Resources Management

*Botany*

*Earth Sciences*

*Ecosystem Management*

*Environmental Engineering*

*Zoology*

The School of Environmental Sciences and Natural Resources Management teaches and conducts research covering the spectrum from the enabling sciences through to managing our natural resources, such as water, soils, plants and animals. We work in both natural and highly modified environments, from the ocean and forests through to rural landscapes. Though much of the teaching and research involves tackling environmental problems, they are underpinned with science.

## School of Mathematics, Statistics and Computer Science

### Computer Science

### Mathematics

### Statistics

Mathematics, Statistics and Computer Science are core disciplines at the heart of all modern science, economics and technology. The School offers a wide range of undergraduate and postgraduate courses in its discipline areas, taught in both on-campus and off-campus modes. This teaching is supported by excellent computing facilities. The School hosts an extensive network of Linux servers and workstations, PC and Apple workstations, together with several student computer laboratories and a beowulf class supercomputer.

Active research across the three disciplines is supported by internal and external funding, including Australian Research Council grants.

### Research Centres associated or within the Faculty of The Sciences

Agricultural Business Institute (ABRI); Animal Genetics and Breeding Unit (AGBU); Australian Centre for Agriculture and Law; Cotton Catchment Communities Cooperative Research Centre; Australian Poultry CRC; Australian Sheep Industry CRC; Centre for Animal Health and Welfare; Centre for Behavioural and Physiological Ecology (BPERC); Centre for Bioactive Discovery in Health and Ageing; Centre for Ecological Economics & Water Policy Research; Centre for Ecology, Evolution and Systematics; Centre for Environmental Dispute Resolution; Centre for Molecular Microbiology; Centre for Neuroscience and Animal Behaviour; Centre for North Coast Aquatic Linkages (NCAL); Centre for Sustainable Farming Systems; CRC for Australian Weeds Management; CRC for Beef Genetic Technologies; CRC for Viticulture; CSIRO Livestock Industries; International Livestock Resource and Information Centre (ILRIC); National Marine Science Centre; and NSW DPI (Armidale Beef Industry Centre).

Unit outlines can be viewed on the Student Centre website - Faculty of The Sciences

### Progression Requirements

Every student must make adequate progress in their course. Adequate progress means maintaining a Grade Point Average (GPA) greater than three.

Full details on the University's progression requirements including information on what action the University may take where progress is inadequate is available at: [www.une.edu.au/studentcentre/Academic\\_Progress.pdf](http://www.une.edu.au/studentcentre/Academic_Progress.pdf)

### Scholarships

Postgraduate students at UNE can apply for a number of major postgraduate research scholarships including UNE Research Assistantships, International Postgraduate Research Scholarships and Australian Postgraduate Scholarships. Industry and Commonwealth based scholarships are also available to postgraduate students in many research areas.

Scholarships may be targeted to a specific discipline, research project or applicant type, or may be a general scholarship with broad eligibility criteria. UNE offers scholarships for a range of purposes, including living allowance, tuition fees, travel, honours and research.

See: [www.une.edu.au/research-services/schol.html](http://www.une.edu.au/research-services/schol.html)

## Courses available in 2007

### Graduate Certificate in Computer Science

The Graduate Certificate is the first award level of a fully articulated program in Computer Science which gives qualified applicants the opportunity for study at three progressive levels.

For admission to candidature an applicant must hold a Bachelor degree. Applicants who have other qualifications and/or experience deemed to be relevant preparation for candidature will also be considered. A further requirement is assumed knowledge in COMP 131 and 132 or their equivalent together with AMTH 140. COMP 131 and 132 provide the foundation for Computer Science at UNE. Emphasis is placed on the structured design of algorithms for computer-based implementations of real-life tasks. The expression of algorithms in a programming language C++ and the interactive execution, analysis and use of programs are also discussed. Practical elements of basic hardware components are introduced.

Also studied are: advanced algorithmic designs and programming techniques; informal notions of program specification and verification; a high-level description of the abstract architecture of the von Neumann machine; numerical and non-numerical applications; and social issues.

If an applicant admitted to the Graduate Certificate in Computer Science does not have the background knowledge required, the Course Coordinator may prescribe one or more units, which will be additional to the 24 cp required for the Certificate.

Candidates determine their own program of study in consultation with members of the academic staff. The various coursework programs are divided into basic units, advanced units and reading units. Units are available in such areas as data structure, operating systems, compilers, databases, management information systems and expert systems.

### Course Requirements

Candidates must complete units to the value of at least 24 cp chosen from:

COMP 503, 504, 507, 508, 509, 511, 513, 515, 516, 517, 518, 519, 520, 521, 522, 523, 570, 580, 582, 583, 584, 585, 586, 587, 589, 590, 591, 592, 593.

### Graduate Certificate in Geographic Information Science

The course is designed to provide further academic and professional training in the use and application of Geographic Information Systems (GIS) and remote sensing for those students who wish to increase their knowledge and application of this area. Graduates will

be well qualified for professional positions dealing with GIS and remote sensing.

For admission to candidature an applicant must hold a three-year Bachelor degree in a relevant area.

#### **Course Requirements**

Candidates must complete units to the value of at least 24 cp including EM 234/534 and NR 331/531. All units must be at 200 level or above.

### **Graduate Certificate in Information Technology**

The Graduate Certificate is the first award level of a fully articulated program in Information Technology which gives qualified applicants the opportunity for study at three progressive levels.

For admission to candidature an applicant must hold a Bachelor degree. Applicants who have other qualifications and/or experience deemed to be relevant preparation for candidature will also be considered. There is no assumed knowledge for the Graduate Certificate in Information Technology other than the necessity to satisfy the admission requirements.

Units are available in such areas as computer science, business and information technology, internet publishing, databases, artificial intelligence and multimedia studies.

#### **Course Requirements**

Candidates must complete units to the value of at least 24 cp chosen from:

AMTH 540; COMP 500, 503, 504, 507, 508, 509, 511, 513, 515, 516, 517, 518, 519, 520, 521, 522, 523, 530, 531, 532, 535, 560, 570, 580, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593.

**NB:** Candidates who commenced candidature for the Graduate Certificate in Information Technology prior to 2004 will be permitted to count any 100-level units completed prior to 2004 towards requirements for the Graduate Certificate.

### **Graduate Certificate in Marine Science and Management**

The course provides academic and professional training in some of the key topics in marine science and management. This includes updating the knowledge and skills of candidates who have previous training in this field. This qualification will be recognised in the market place as appropriate for managers dealing with marine and estuarine ecosystems. It also allows articulation to the higher awards of the Graduate Diploma in Marine Science and Management and the Master of Marine Science and Management. All units are taught at the National Marine Science Centre in Coffs Harbour.

For admission to candidature an applicant must have fulfilled all the requirements for admission to a degree, or an equivalent qualification, or relevant experience acceptable to the Faculty as sufficient qualification for admission to candidature.

#### **Course Requirements**

Candidates must complete units to the value of at least 24 cp including MSM 301/501 and MSM 302/502 and units counting 12 cp to be chosen from: MSM 303/503, 304/504, 305/505, 306/506, 307/507, 308/508 and approved by the Course Coordinator.

### **Graduate Certificate in Natural Resources**

This course is designed as a professional development course in areas relevant to natural resources and environmental management. The flexibility of the program gives candidates the opportunity to broaden or develop their professional knowledge and management skills in a chosen area of study. The program is well suited to practising resource managers wishing to become involved in short-term retraining or staff development programs.

For admission to candidature an applicant must hold a Bachelor degree in a relevant area. Applicants who have other qualifications and/or experience deemed to be adequate preparation for candidature will also be considered.

Study topics are available in the areas of park management, wildlife management, land use planning and management, soil and water conservation engineering, forest ecology and management, and resources management in developing countries.

#### **Course Requirements**

Candidates must complete units to the value of at least 24 cp related to a specific subject area. All units must be at 200 level or above.

### **Graduate Certificate in Rural Science**

This is an intensive course offered in Animal Breeding and Genetics, Cotton Production, Sustainable Grains Production, Change Management in Agriculture and Biosecurity. The Genetics program is designed to provide extension officers and consultants to the animal breeding industries with sufficient technical skills in quantitative genetics to assume a position of authority when giving animal breeding advice and the ability to design relevant breeding programs without extensive support from research specialists. The Cotton Production program may be used as refresher training and for accreditation of field consultants new to the cotton industry.

For admission to the Graduate Certificate applicants must hold a Bachelor degree, preferably in an agricultural or science-related area. Students without an appropriate background may be required to complete additional units having a total value of not more than 12 cp. The units will be additional to the 24 cp required.

#### **Course Requirements**

Candidates must complete units to the value of 24 cp of which at least 18 cp must be at 500-level. All units must be at 200 level or above. Alternatively, candidates may complete one of the Coursework Programs listed below:

### Coursework Programs

#### *Animal Genetics and Breeding*

Four units (three at 500 level) to be chosen from:

GENE 351, 500, 520, 522; BINF 550

#### *Cotton Production*

COTT 500, 501, 502, 503

#### *Sustainable Grains Production*

GRNS 500, 501, 502, 503

#### *Change Management in Agriculture*

Four units (three at 500 level) to be chosen from:

AGEX 501; AQUA 300; AGRO 501; HORT 420, 510; ENVE 521.

#### *Biosecurity*

AGRO 514; ANSC 514; NR 411/511; GEPL 325/425.

### The following applies to all Graduate Certificates offered by the Faculty:

#### Period of Candidature

Full-time study: maximum of one semester

Part-time study: maximum of four semesters

#### Advanced Standing

A maximum of 6 cp of advanced standing may be granted towards the Graduate Certificate, on the recommendation of the relevant Course Coordinator, as follows:

- Six cp for units which have been completed at either UNE or another institution provided they have not been counted towards another qualification **or**
- Six cp for units which have been completed at either UNE or another institution and which have been counted towards another qualification; **or**
- Six cp on the basis of considerable professional experience in a relevant field.

#### Award of Certificate

A successful candidate shall be awarded the Certificate at one of four levels - Pass, Credit, Distinction or High Distinction.

### Graduate Diploma in Computer Science

The Graduate Diploma is the second award level of a fully articulated program in Computer Science which gives qualified applicants the opportunity for study at three progressive levels. Candidates for this diploma may complete a research project (COMP 595) with the approval of the Course Coordinator.

For admission to candidature an applicant must hold a Bachelor degree. Applicants who have other qualifications and/or experience deemed to be relevant preparation for candidature will also be considered. A further requirement is assumed knowledge in COMP 131 and 132 plus AMTH 140. See details under Graduate Certificate in Computer Science.

Candidates determine their own program of study in consultation with members of the academic staff. The

various coursework programs are divided into basic units, advanced units, reading units and the Graduate Diploma in Computer Science project (COMP 595, 12 cp). Units are available in such areas as data structure, operating systems, compilers, databases, management information systems and expert systems.

#### Course Requirements

A candidate must complete units to the value of 48 cp chosen from:

1. COMP 503, 504, 507, 508, 509, 511, 513, 515, 516, 517, 518, 519, 520, 521, 522, 523, 580, 582, 583, 584, 585, 586, 587, 589, 590, 591, 592, 593.
2. With the approval of the Course Coordinator, the prescribed course of study may include the unit COMP 595. COMP 595 involves a project and project report. The project topic must be approved in advance by the Course Coordinator. The project may take the form of a design, management plan, literature review, or a field or laboratory investigation.

#### Award of the Graduate Diploma

A candidate who has successfully completed the unit COMP 595 within his/her study program will be awarded the Graduate Diploma at the level of Pass, Credit, Distinction or High Distinction. A candidate who does not complete COMP 595 within the study program will be awarded the Graduate Diploma at the level of Pass.

### Graduate Diploma in Geographic Information Science

The course is designed to provide further academic and professional training in the use and application of Geographic Information Systems (GIS) and remote sensing.

For admission to candidature an applicant must hold a three-year Bachelor degree in a relevant area of science or natural resources management.

#### Course Requirements

Candidates must complete units to the value of 48 cp including:

1. EM 234/534, 432/532, 433/533; NR 331/531; plus
2. Units to the value of 24 cp, including, with the approval of the Course Coordinator, NR 595 which involves a project and project report. The project topic must be approved by the Course Coordinator. The project may take the form of a design, management plan, literature review, or a field or laboratory investigation.
3. All units must be at 200 level or above.

#### Award of the Graduate Diploma

A candidate who has successfully completed the unit NR 595 within his/her study program will be awarded the Graduate Diploma at the level of Pass, Credit, Distinction or High Distinction. A candidate who does not complete NR 595 within the study program will be awarded the Graduate Diploma at the level of Pass.

### Graduate Diploma in Information Technology

The Graduate Diploma is the second award level of a fully articulated program in Information Technology which gives qualified applicants the opportunity for study at three progressive levels.

Units are available in areas such as: data structure; operating systems; compilers; databases; management information systems and expert systems.

For admission to candidature an applicant must hold a Bachelor degree. Applicants who have other qualifications and/or experience deemed to be relevant preparation for candidature will also be considered.

There is no assumed knowledge for the Graduate Diploma in Information Technology other than the necessity to satisfy the admission requirements.

#### Course Requirements

Candidates must complete units to the value of 48 cp chosen from:

1. AMTH 540; COMP 500, 503, 504, 507, 508, 509, 511, 513, 515, 516, 517, 518, 519, 520, 521, 522, 523, 530, 531, 532, 535, 560, 570, 580, 582, 583, 584, 585, 586, 587, 589, 590, 591, 592, 593.
2. With the approval of the Course Coordinator, the prescribed course of study may include the unit COMP 595. COMP 595 involves a project and project report. The project topic must be approved in advance by the Course Coordinator. The project may take the form of a design, management plan, literature review, or a field or laboratory investigation.

#### Award of the Graduate Diploma

A candidate who has successfully completed the unit COMP 595, within his/her study program will be awarded the Graduate Diploma at the level of Pass, Credit, Distinction or High Distinction. A candidate who does not complete COMP 595 within the study program will be awarded the Graduate Diploma at the level of Pass.

**NB:** Candidates who commenced candidature for the GradDiplInfoTech prior to 2004 will be permitted to count any 100-level units completed prior to 2004 towards requirements for the Graduate Diploma.

### Graduate Diploma in Marine Science and Management

This course provides professional training in some of the key topics in marine science and management.

For admission to candidature an applicant must hold a relevant Bachelor degree in Science.

All MSM units will be taught at the National Marine Science Centre, Coffs Harbour.

#### Course Requirements

A candidate must complete a study program comprising 48 cp chosen from:

1. AQUA 200/300; ECOL 210/510, 202/502; ZOOL 210 with at least 30 cp from MSM 301/501, 302/502, 303/503, 304/504, 305/505, 306/506, 307/507, 308/508. approved by the Course Coordinator,

2. Including, with the approval of the Course Coordinator, SCI 595 which involves a project and a project report. The project topic must be approved by the Course Coordinator. The project may take the form of a design, management plan, literature review, or a field or laboratory investigation.
3. All units must be at 200 level or above.

#### Award of the Graduate Diploma

A candidate who has successfully completed the unit SCI 595 within his/her study program will be awarded the Graduate Diploma at the level of Pass, Credit, Distinction or High Distinction.

### Graduate Diploma in Natural Resources

This course is designed primarily for graduates who have majored in other disciplines and wish to gain experience in the practical and theoretical application of resource management. It is also suitable for resource and environmental science majors who wish to specialise in a chosen field.

For admission to candidature an applicant must hold a relevant Bachelor degree in science or natural resources management.

#### Course Requirements

A candidate must complete units to the value of 48 cp chosen from:

1. At least 12 cp from ECON 326 or 329; EM 311/511, 312/512; ENVE 421/521; NR 411/511; RSNR 421/521; and
2. Up to 36 cp approved by the Course Coordinator including, NR 595 which involves a project and a project report. The project topic must be approved by the Course Coordinator. The project may take the form of a design, management plan, literature review, or a field or laboratory investigation.
3. All units must be at 200 level or above.

#### Award of the Graduate Diploma

A candidate who has successfully completed the unit NR 595 within his/her study program will be awarded the Graduate Diploma at the level of Pass, Credit, Distinction or High Distinction.

A candidate who does not complete NR 595 within the study program will be awarded the Graduate Diploma at the level of Pass.

### Graduate Diploma in Rural Science

The course is designed to give graduates an opportunity to undertake specialised study in an area of agriculture, or for those holding a three-year degree, to upgrade their qualifications. Each candidate is required to complete a course of study prescribed by the Faculty, the content of the course being determined by the candidate's interests and academic background. Candidates may include a thesis reporting the results of an individual research project.

Areas of specialisation are: animal production/animal products; animal genetics; horticultural science; mammalian physiology; agronomy and soil science.

For admission to candidature an applicant must hold a relevant Bachelor degree in science or agriculture.

### Course Requirements

A candidate must complete a study program comprising units to the total value of 48 cp :

1. Of which not more than 18 cp must be for units below the level of third year. With the approval of the Course Coordinator, the prescribed course of study may include the unit RUSC 595 or HORT 595. RUSC 595 and HORT 595 involve a project and project report. The project topic must be approved in advance by the Course Coordinator. The project may take the form of a design, management plan, literature review, or a field or laboratory investigation.
2. All units must be at 200 level or above.

### Award of the Graduate Diploma

A candidate who has successfully completed the unit RUSC 595 or HORT 595 within his/her study program will be awarded the Graduate Diploma at the level of Pass, Credit, Distinction or High Distinction. A candidate who does not complete RUSC 595 or HORT 595 within the study program will be awarded the Graduate Diploma at the level of Pass.

### Graduate Diploma in Science

The course provides an opportunity for graduates to upgrade or extend their qualifications in a field of study not covered in depth in their undergraduate studies. Study programs are designed to meet the candidate's interests and academic background and involve coursework selected from a chosen field of study. Students have the option of undertaking a small research project leading to the submission of a thesis.

For admission to candidature an applicant must hold a degree or equivalent qualification from a recognised university or tertiary institution and have completed the equivalent of first-year units in the intended area of specialisation.

### Course Requirements

A candidate must complete units to the value of 48 cp, approved by the Course Coordinator or complete one of the prescribed coursework programs listed below.

1. Not more than 24 cp can be completed for units at 200 level. If SCI 595 is included in the program of study, not more than 18 cp can be completed for units below 200 level.
2. All units must be at 200 level or above.

### Coursework Programs

#### Biomedical Science

BCHM 210, 220, 320/520, 330/530; GENE 210, 340/540, 500; HUMN 340; MICR 220; 350; PHAR 222; PSIO 210, 220, 321/521, 322/522, 323/523, 324/524, 325/525, 410/510; PSYC 363, 366; STAT 200.

#### Botany

BOTY 211/411, 241/341, 355/555, 260/360, 270/370; ECOL 202/502, 210/510, 220, 307/507, 311/511; EVOL 211/311; BIOL 301/501, 302/502.

#### Chemistry

CHEM 201, 202, 203, 204, 302, 303, 305, 306, 307; PHYS 301, plus 6 cp from other relevant units offered by the faculty.

#### Ecology

BOTY 211/411, 241/341, 260/360, 270/370; ECOL 202/502, 210/510, 220, 307/507, 311/511; EM 331/531, 423/523, 453/553, 454/554; ZOOL 210, 220, 230, 321, 326, 327, 328/528.

#### Genetics

At least 42 cp from BCHM 210, 330/530; GENE 210, 322, 335, 340/540, 351, 500, 422/522; STAT 200, 300, plus 6 cp from other relevant units offered by the Faculty.

#### Health

BCHM 210, 220, 320/520; BIOP 320/520; GENE 210, 340/540; HUMN 340; MICR 220, 350; PHAR 222, PSIO 210, 220, 321/521, 322/522, 323/523, 324/524; SCI 501, 502; STAT 200; not more than 18 cp chosen from ARPA 361; HHSC 243/343, 383/583, 384/584, 385/585, 398/498; HS 352; PSYC 363, 366.

#### Molecular Genetics and Biotechnology

BCHM 210, 220, 310/510, 320/520, 330/530; CHEM 204; GENE 210, 322, 335, 340/540; MICR 220, 360/560

#### Physics

PHYS 204, 211, 212, 311, and at least 12 cp chosen from AMTH 246, 247; ASTY 221; COMP 282/582, 389/589, 395; PHYS 301; STAT 200, 300.

#### Statistics

AMTH 246; PMTH 212, 213; STAT 260, 261, 300, 354, 356, 357, 501, 502, 503, 504.

#### Zoology

ECOL 210/510, 220; EVOL 211/311; GENE 322; ZOOL 210, 220, 230, 321, 326, 327, 328/528.

The Course Coordinator may approve alternate units in special circumstances.

With the approval of the Course Coordinator, the study program may include the unit SCI 595. The unit can count for at least one quarter and up to one half of the assessment for the award of the Graduate Diploma. SCI 595 involves a project and project report. The project topic must be approved by the Course Coordinator. The project may take the form of a design, management plan, literature review, or a field or laboratory investigation.

### Award of the Graduate Diploma

A candidate who has successfully completed the unit SCI 595 within his/her study program will be awarded the Graduate Diploma at the level of Pass, Credit, Distinction or High Distinction. A candidate who does not complete SCI 595 within the study program will be awarded the Graduate Diploma at the level of Pass.

### The following applies to all Graduate Diplomas offered by the Faculty

#### Period of Candidature

Full-time study: maximum one year  
Part-time study: maximum of eight semesters

### Advanced Standing

A maximum of 24 cp of advanced standing may be granted towards the Graduate Diploma, on the recommendation of the relevant Course Coordinator, as follows:

- 24 cp for units which have been completed towards an awarded Graduate Certificate completed at UNE; **or**
- 24 cp for units which have been completed at another institution and which have **not been** counted towards another qualification; **or**
- 12 cp for units which have been counted towards another qualification; **and**
- Six cp on the basis of considerable professional experience in a relevant field
- Advanced standing will not be granted for COMP 595; HORT 595; NR 595, RUSC 595; or SCI 595.

Applicants who do not have an appropriate background may be required to complete additional units up to a maximum of 36 cp. These units will be additional to the 48 cp required for the Graduate Diploma.

### Master of Agriculture

The Master of Agriculture is a coursework only program designed for students who wish to broaden their knowledge in an area of agriculture and who do not wish to complete a research project. The program consists of units to the value of 48 cp in an area of interest to the student, and each student can design a program to suit his or her academic background and career aims. Programs are available in animal production, animal physiology, animal nutrition, agronomy and soil science.

For admission to candidature an applicant must hold a three-year degree in a field related to agriculture. It is possible to transfer to Master of Agriculture candidature on completion of units to the value of 12 cp towards the Graduate Diploma in Rural Science. Advanced standing will be granted for these units.

#### Course Requirements

Candidates must complete units to the value of 48 cp;

1. of which at least 36 cp must be at graduate level and relating to a specific area of study;
2. **all units must be at 300 level or above. Permission** may be granted to include units offered by other faculties of the University.

#### Advanced Standing

A maximum of 24 cp of advanced standing may be granted towards the Master, on the recommendation of the Course Coordinator, as follows:

- 24 cp for units which have been completed towards an awarded Graduate Certificate or Graduate Diploma completed at UNE; **or**
- 24 cp for units which have been completed at another institution and which have **not been** counted towards another qualification; **or**
- 12 cp for units which have been counted towards another qualification; **and**
- Six cp on the basis of considerable professional experience in a relevant field.

- Six cp on the basis of considerable professional experience in a relevant field.

#### Period of Candidature

Full-time study: maximum one year

Part-time study: maximum of eight semesters.

### Master of Computer Studies

The course is the third award level of the fully articulated program which provides qualified applicants with the opportunity of graduate study at three progressive levels.

The Master of Computer Studies requires the completion of units to the value of 72 cp. A research thesis (COMP 695 counting 24 cp), may be completed with Faculty approval. Areas of study are information systems; artificial intelligence and parallel and distributed computing.

For admission to candidature an applicant must hold a Bachelor degree and have a knowledge of Computer Science equivalent to at least the second year level of the UNE Bachelor of Computer Science degree. Candidates who have other qualifications and/or experience deemed to be adequate preparation for candidature will also be considered.

#### Course Requirements

Candidates must complete units to the value of 72 cp as follows:

1. not more than 36 cp from Group 1; and
2. not less than 36 cp from Group 2;
3. all units must be at 300 level or above.

#### Units Offered

*Group 1:* 309, 311, 315, 318, 319, 320, 321, 322, 323, 389, 391, 393.

*Group 2:* COMP 503, 504, 507, 508, 509, 511, 513, 516, 517, 518, 519, 520, 521, 522, 523, 580, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 695.

With the permission of the Course Coordinator, one unit offered in the University may be substituted for one of the units listed in Groups 1 and 2.

#### Advanced Standing

A maximum of 24 cp of advanced standing may be granted towards the Master, on the recommendation of the Course Coordinator, as follows:

- 24 cp for units which have been completed towards an awarded Graduate Certificate or Graduate Diploma completed at UNE; **or**
- 24 cp for units which have been completed at another institution and which have not been counted towards another qualification; **or**
- 12 cp for units which have been counted towards another qualification; **and**
- Six cp on the basis of considerable professional experience in a relevant field.

#### Requirements for COMP 695

To complete requirements for COMP 695 a candidate must undertake a research project approved by the Faculty and shall present a thesis embodying the results of that project.

The thesis shall be written in concise English and, except with the special permission of the Faculty in exceptional circumstances, shall not exceed 20 000 words, exclusive of tables, plates, figures and appendices. A successful thesis must show capacity on the part of the candidate for independence of thought and critical evaluation of the candidate's own and published work in his/ her field of study.

#### Period of Candidature

Full-time study: maximum of two years

Part-time study: maximum of five years

### Master of Environmental Management

The Master of Environmental Management is a coursework only program designed for students who wish to broaden their knowledge in an area of environmental management and who do not wish to complete a research project.

For admission to candidature an applicant must hold a degree in a field related to natural resources and environmental management.

It is possible to transfer to candidature for the Master of Environmental Management on completion of units to the value of 12 cp towards the Graduate Diploma in Natural Resources. Advanced standing will be granted for these units.

#### Course Requirements

Candidates must complete units to the total value of 48 cp as follows:

1. at least 12 cp from EM 511, 512; ENVE 521; NR 511; RSNR 521; and
2. at least 36 cp of which 24 cp must be at graduate level;
3. all units must be at 300 level or above. Permission may be granted to include units offered by other faculties of the University.

#### Advanced Standing

A maximum of 24 cp of advanced standing may be granted towards the Master, on the recommendation of the Course Coordinator, as follows:

- 24 cp for units which have been completed towards an awarded Graduate Certificate or Graduate Diploma completed at UNE; **or**
- 24 cp for units which have been completed at another institution and which have **not been** counted towards another qualification; **or**
- 12 cp for units which have been counted towards another qualification; **and**
- Six cp on the basis of considerable professional experience in a relevant field.

#### Period of Candidature

Full-time study: maximum of one year

Part-time study: maximum of eight semesters

### Master of Geographic Information Science

The Master of Geographic Information Science is designed to provide academic and professional training in the use and application of Geographic Information Systems

(GIS) and remote sensing, principally to natural resources managers at advanced levels.

For admission to candidature an applicant must hold a three-year degree in a field related to environmental management.

It is possible to transfer to Master of Geographic Information Science candidature on completion of units to the value of 12 cp towards the Graduate Diploma in Geographic Information Science. Advanced standing (credit) will be granted for these units.

#### Course Requirements

Candidates must complete units to the value of 48 cp including:

1. EM 532, 533, 534; NR 531; and
2. 24 cp of which 12 cp must be at graduate level;
3. all units must be at 300 level or above. Permission may be granted to include units offered by other faculties of the University.

#### Advanced Standing

A maximum of 24 cp of advanced standing may be granted towards the Master, on the recommendation of the Course Coordinator, as follows:

- 24 cp for units which have been completed towards an awarded Graduate Certificate or Graduate Diploma completed at UNE; **or**
- 24 cp for units which have been completed at another institution and which have **not been** counted towards another qualification; **or**
- 12 cp for units which have been counted towards another qualification; **and**
- Six cp on the basis of considerable professional experience in a relevant field.

#### Period of Candidature

Full-time study: maximum of two semesters

Part-time study: maximum of eight semesters

### Master of Information Systems

The Master of Information Systems is a coursework only program suitable for graduates from areas such as business and commerce who do not want to pursue careers in software development.

Graduates will have the skills to analyse and satisfy the information needs of a range of organisations, both government and private. Study areas include: business information technology; management information systems; internet publishing; databases and system analysis and design among others.

For admission to candidature an applicant must hold a Bachelor degree or have other qualifications and/or experience deemed to be adequate preparation for candidature.

#### Course Requirements

Candidates must complete units to the value of 72 cp including: COMP 500, 503, 504, 513, 531, 560, 586, 588, 589, 593, plus two units from AMTH 540; COMP 507, 508, 509, 511, 515, 518, 519, 520, 521, 522, 523, 535, 570, 580, 582, 583, 587, 590, 591, 592.

### Advanced Standing

A maximum of 24 cp of advanced standing may be granted towards the Master, on the recommendation of the Course Coordinator, as follows:

- 24 cp for units which have been completed towards an awarded Graduate Certificate or Graduate Diploma completed at UNE; **or**
- 24 cp for an awarded Bachelor degree in a relevant area completed at UNE or another institution; **or**
- 24 cp for units which have been completed at another institution and which have **not been** counted towards another qualification; **or**
- 12 cp for units which have been counted towards another qualification; **and**
- Six cp on the basis of considerable professional experience in a relevant field.

### Period of Candidature

Full-time study: maximum of two years  
Part-time study: maximum of five years

### Master of Information Systems with Honours

The Master of Information Systems with Honours is a coursework plus project program suitable for graduates from areas such as business and commerce who do not want to pursue careers in software development. Graduates will have the skills to analyse and satisfy the information needs of a range of organisations, both government and private. Students study areas such as business information technology, management information systems, internet publishing, databases and system analysis and design among others. In addition to the coursework prescribed for the program, students are required to complete a research project (counting 24 cp) in an area relevant to their program of study and to submit a report on the project.

For admission to candidature an applicant must hold a Bachelor degree or have other qualifications and/or experience deemed to be adequate preparation for candidature.

### Course Requirements

Candidates must complete units to the value of 96 cp including: COMP 500, 503, 504, 513, 531, 560, 586, 589, 593, 695, plus three units from AMTH 540; COMP 507, 508, 509, 511, 515, 518, 519, 520, 521, 522, 523, 535, 570, 580, 582, 583, 587, 590, 591, 592; EBUS 521, 531.

### Advanced Standing

A maximum of 48 cp of advanced standing may be granted towards the Master, on the recommendation of the Course Coordinator, as follows:

- 24 cp for units which have been completed towards an awarded Graduate Certificate or Graduate Diploma completed at UNE; **or**
- 48 cp for an awarded Bachelor degree in a relevant area completed at UNE or another institution; **or**
- 24 cp for units which have been completed at another institution and which have not been counted towards another qualification; **or**
- 12 cp for units which have been counted towards another qualification; **and**

- Six cp on the basis of considerable professional experience in a relevant field.
- Advanced standing shall not be granted for COMP 695.

### Period of Candidature

Full-time study: maximum of two years  
Part-time study: maximum of five years

### Master of Information Technology

The Master of Information Technology is a coursework only degree designed for students who do not have a computing background and who are seeking to achieve qualifications in information technology. There are three prescribed coursework programs available and candidates are required to complete one of these programs. The programs available are: Software Engineering; Internet and Web Technologies' and Computer Networks.

For admission to candidature an applicant must hold a Bachelor degree or have other qualifications and/or experience deemed to be adequate preparation for candidature.

### Course Requirements

Candidates are required to complete one of the prescribed coursework programs comprising 72 cp as follows:

#### Units offered

AMTH 540; COMP 500, 503, 504, 507, 508, 509, 511, 513, 515, 518, 519, 520, 521, 522, 523, 530, 531, 532, 535, 560, 570, 580, 582, 583, 584, 585, 586, 588, 589, 590, 591, 592, 593.

#### Coursework Programs

##### Software Engineering

AMTH 540; COMP 530, 560, 580, 582, 584, 586, 588, 593 plus three units to be chosen from units listed above and approved by the Course Coordinator.

##### Internet and Web Technologies

AMTH 540; COMP 515, 530, 560, 580, 582, 585, 588, 590, 591 plus two units to be chosen from units listed above and approved by the Course Coordinator.

##### Computer Networks

AMTH 540; COMP 500, 521, 522, 530, 560, 580, 588, 590 plus three units to be chosen from units above and approved by the Course Coordinator.

### Advanced Standing

A maximum of 48 cp of advanced standing may be granted towards the Master, on the recommendation of the Course Coordinator, as follows:

- 24 cp for units which have been completed towards an awarded Graduate Certificate or Graduate Diploma completed at UNE; **or**
- 48 cp for an awarded Bachelor degree in a relevant area completed at UNE or another institution; **or**
- 24 cp for units which have been completed at another institution and which have not been counted towards another qualification; **or**

- 12 cp for units which have been counted towards another qualification; **and**
- Six cp on the basis of considerable professional experience in a relevant field
- Advanced standing shall not be granted for COMP 695.

#### Period of Candidature

Full-time study: maximum of two years

Part-time study: maximum of five years

### Master of Information Technology with Honours

The Master of Information Technology with Honours is a coursework plus project program designed for students who do not have a computing background and who are seeking to achieve qualifications in information technology. Candidates have the option of completing one of three coursework programs in addition to a research project. The programs available are Software Engineering; Internet and Web Technologies; and Computer Networks.

Students are also required to complete a research project (24 cp) in an area relevant to their program of study and to submit a report on the project.

For admission to candidature an applicant must hold a Bachelor degree or have other qualifications and/or experience deemed to be adequate preparation for candidature.

#### Course Requirements

Candidates are required to complete one of the prescribed coursework programs comprising 96 cp as follows:

#### Units Offered

AMTH 540; COMP 500, 503, 504, 507, 508, 509, 511, 515, 518, 519, 520, 521, 522, 523, 530, 535, 560, 570, 580, 582, 583, 584, 585, 586, 587, 589, 591, 592, 593, 695; EBUS 521, 531.

#### Coursework Programs

##### Software Engineering

AMTH 540; COMP 530, 560, 580, 582, 584, 586, 593, 695 plus four units to be chosen from the units listed above and approved by the Course Coordinator.

##### Internet and Web Technologies

AMTH 540; COMP 515, 530, 560, 580, 582, 585, 590, 591, 593, 695 plus three units to be chosen from the units listed above and approved by the Course Coordinator.

##### Computer Networks

AMTH 540; COMP 500, 521, 522, 530, 560, 580, 588, 590 plus three units to be chosen from units above and approved by the Course Coordinator.

#### Advanced Standing

A maximum of 48 cp of advanced standing may be granted towards the Master, on the recommendation of the Course Coordinator, as follows:

- 24 cp for units which have been completed towards

an awarded Graduate Certificate or Graduate Diploma completed at UNE; **or**

- 48 cp for an awarded Bachelor degree in a relevant area completed at UNE or another institution; **or**
- 24 cp for units which have been completed at another institution and which have not been counted towards another qualification; **or**
- 12 cp for units which have been counted towards another qualification; **and**
- Six cp on the basis of considerable professional experience in a relevant field.
- Advanced standing shall not be granted for COMP 695.

#### Period of Candidature

Full-time study: Maximum of two years

Part-time study: Maximum of five years

### Master of Marine Science and Management

This course provides academic and professional training in some of the key topics in marine science and management. This includes updating the knowledge and skills of candidates who have previous training in this field. Although the primary geographical focus of the Marine Science and Management course is on Australia, it also examines the management of marine resources worldwide. Marine management also involves collaboration with all stakeholders. Consequently indigenous issues feature strongly in the establishment of marine protected areas and are prominent in some of the units. All MSM units are taught in block-mode at the National Marine Science Centre, Coffs Harbour.

For admission to candidature an applicant must hold a relevant Bachelor degree.

#### Course Requirements

Candidates must complete units to the value of 48 cp including

1. MSM 501, 502, 504, 507, 508; and
2. 18 cp chosen from EM 432/532, 433/533, 534, 454/554; MSM 303/503, 305/505, 306/506;
3. all units must be at 300 level or above.

#### Advanced Standing

A maximum of 24 cp of advanced standing may be granted towards the Master, on the recommendation of the Course Coordinator, as follows:

- 24 cp for units which have been completed towards an awarded Graduate Certificate or Graduate Diploma completed at UNE; **or**
- 24 cp for units which have been completed at another institution and which have not been counted towards another qualification; **or**
- 12 cp for units which have been counted towards another qualification; **and**
- Six cp on the basis of considerable professional experience in a relevant field.

#### Period of Candidature

Full-time study: maximum of one year

Part-time study: maximum of eight semesters

## Master of Natural Resources

The Master of Natural Resources is a coursework and research degree. The program involves advanced postgraduate training for graduates who have an appropriate first degree for a career in the management of natural resources. The program is also particularly valuable for candidates who are currently employed as resources managers and wish to upgrade their qualifications for either professional or academic reasons.

For admission to candidature an applicant must hold a three-year degree from fields of study including agriculture, forestry, engineering, resource economics, surveying, science, earth sciences and planning. It is possible to transfer to candidature for the degree of Master of Natural Resources if units to the value of 24 cp have been completed towards the Graduate Diploma in Natural Resources at a satisfactory level. Advanced standing will be granted for these units. It is a requirement that off-campus candidates must have access to appropriate research facilities and on-site supervision for completion of the Research Report component of the program.

### Course Requirements

Candidates must complete a course of study which shall complete units comprising 72 cp,

1. Including graduate-level units comprising at least 48 cp, including NR 691.
2. Units may be selected from 300-, 400-, 500- and 600-level units offered by the Faculty. Permission may be granted to include units offered by other faculties of the University.

### Requirements for NR 691

The thesis submitted must embody the results of a research program. The thesis must be submitted within three semesters from the date of commencement of NR 691, should be written in concise English and should not exceed 20 000 words of text exclusive of appendices, references, tables and diagrams. A successful thesis will show capacity on the part of the candidate for independence of thought and critical evaluation of the candidate's own and published work in his/her field of study.

### Supervisor's Reports

A candidate's supervisor must report to the UNE Student Centre, at least once, on the progress of the candidate towards completion of the thesis (NR 691). In the case of a report being submitted advising of unsatisfactory progress the candidate may be asked to show cause why his/her candidature should not be terminated.

### Advanced Standing

A maximum of 24 cp of advanced standing may be granted towards the Master, on the recommendation of the Course Coordinator, as follows:

- 24 cp for units which have been completed towards an awarded Graduate Certificate or Graduate Diploma completed at UNE; **or**
- 24 cp for units which have been completed at another institution and which have not been counted towards another qualification; **or**

- 12 cp for units which have been counted towards another qualification; **and**
- Six cp on the basis of considerable professional experience in a relevant field.
- Advanced standing shall not be granted for NR 691.

### Period of Candidature

Full-time study: maximum of two years

Part-time study: maximum of five years

## Master of Science in Agriculture

The Master of Science in Agriculture is a program of coursework and research designed to provide advanced training to supplement a first degree and to provide an introduction to research. The program comprises coursework representing 67% and a thesis which represents 33% of the final assessment. The coursework component is designed to provide advanced knowledge, and to develop a range of skills, applicable to the candidate's background and area of interest. Areas of specialisation are: animal science; meat science and technology; wool science; genetics and animal breeding; agricultural and resource economics; agronomy and soil science.

For admission to candidature an applicant must have a three-year degree in an agricultural or related area. It is possible to transfer to candidature for the Master of Science in Agriculture on satisfactory completion of units to the value of 24 cp towards the Graduate Diploma in Rural Science. Advanced standing will be granted for these units. It is also a requirement that off-campus candidates must have access to appropriate research facilities and on-site supervision for the completion of the thesis component.

### Course Requirements

Candidates must complete units to the total value of at least 72 cp,

1. Including graduate level units with a value of at least 48 cp, including RUSC 695 (Master of Science in Agriculture Thesis).
2. **All units must be at 300 level or above. Permission** may be granted to include units offered by other faculties of the University.

### Requirements for RUSC 695

RUSC 695 involves a research project and a thesis. The project may take the form of a design or a field or a laboratory investigation or other research. The thesis submitted must embody the results of a research program. The thesis must be submitted within three semesters from the date of commencement of RUSC 695, should be written in concise English and should not exceed 20 000 words of text exclusive of appendices, references, tables and diagrams. A successful thesis will show capacity on the part of the candidate for independence of thought and critical evaluation of the candidate's own and published work in his/her field of study.

### Supervisor's Reports

A candidate's supervisor must report to the UNE Student Centre, at least once, on the progress of the candidate

towards completion of the thesis (NR 691). In the case of a report being submitted advising of unsatisfactory progress the candidate may be asked to show cause why his/her candidature should not be terminated.

### Advanced Standing

A maximum of 24 cp of advanced standing may be granted towards the Master, on the recommendation of the Course Coordinator, as follows:

- 24 cp for units which have been completed towards an awarded Graduate Certificate or Graduate Diploma completed at UNE; **or**
- 24 cp for units which have been completed at another institution and which have not been counted towards another qualification; **or**
- 12 cp for units which have been counted towards another qualification; **and**
- Six cp on the basis of considerable professional experience in a relevant field
- Advanced standing shall not be granted for RUSC 695

### Period of Candidature

Full-time study: maximum of two years

Part-time study: maximum of five years

### Master of Scientific Studies

The Master of Scientific Studies is designed to provide specialised training in a specific field of study. It is essentially a terminating graduate course but at a higher level than a graduate diploma. The course involves advanced level coursework study in selected areas plus an optional thesis embodying the results of an approved research project **may be included**. **Areas of specialisation** are: mathematics; statistics; physiology; and genetics and animal breeding.

For admission to candidature an applicant must hold a three-year degree with a major sequence in the chosen field of study.

It is also a requirement that off-campus candidates must have access to appropriate research facilities and on-site supervision for completion of the thesis component.

### Course Requirements

Candidates must complete a course of study, approved by the Course Coordinator and comprising:

- Units to the value of 72 cp including 48 cp at graduate level (500 level); **or**
- One of the approved coursework programs listed below comprising units to the value of 72 cp including 48 cp at graduate level (500 level).

In addition:

- Approval may be granted to include SCI 695 (Master of Scientific Studies Thesis) in the program of study;
- All units must be at 300 level or above;
- The units SCI 501 and SCI 502 may be included in the program of study and, if included, will be additional to the 48 cp required at graduate level;
- In special circumstances the Course Coordinator may approve the inclusion of one or more alternate units to those listed.

### Coursework Programs

#### Biotechnology

BCHM 310/510, 320/520, 330/530; CHEM 303/503, 305/505, 307/507; GENE 340/540, 500; HORT 420, 510; MICR 350, 360/560.

#### Biomedical Science

BCHM 310/510, 320/520, 330/530; BIOP 320/520; CHEM 303/503, 305/505; GENE 340/540, 500; HUMN 340; MICR 350, 360/560; PSIO 321/521, 322/522, 323/523, 324/524, 325/525, 510; PSYC 304, 363, 366; STAT 300.

#### Botany

AGRO 501; BIOL 301/501, 302/502; BOTY 411, 341, 360, 370, 355/555; ECOL 502, 510, 311/511, 307/507; EM 425/525, 452/552, 453/453, 455/555; EVOL 311; HORT 420, 510.

#### Chemistry

BCHM 310/510, 320/520, 330/530; CHEM 302/502, 303/503, 305/505, 306/506, 307/507; MICR 350; 360/560; PHYS 301/501.

#### Ecology

BIOL 301/501, 302/502; BOTY 411, 341, 360, 370, 355/555; ECOL 502, 510, 311/511, 307/507; EM 331/531, 423/523, 454/554; ZOOL 321, 327, 328/528.

#### Health

BCHM 320/520; BIOP 320/520; GENE 340/540; HUMN 340; MICR 350; PSIO 321/521, 322/522, 323/523, 324/524; STAT 300; not more than 4 units chosen from ARPA 361, HHSC 343, 383/583, 384/584, 385/585, 398/498, HS 352, PSYC 363, 366.

#### Mathematics and Statistics

MATH 501, 502, 503, 504; PMTH 332, 333, 335, 336, 338, 339; STAT 300, 354, 356, 357; 501, 502, 503, 504

#### Physics

BIOP 320/520; COMP 582; PHYS 301/501, 311/511; MATH 501, 502, 503, 504; STAT 501, 502, 503, 504 *plus* other 300/500 level CHEM, COMP, MATH, STAT units.

#### Zoology

ECOL 502, 510, 311/511, 307/507; EM 561, 423/523, 453/553, EVOL 311; MSM 304/504, 308/508; ZOOL 321, 326, 327, 328/528.

### Requirements for SCI 695

SCI 695 involves a research project and a thesis. The project may take the form of a design or a field or a laboratory investigation or other research. The thesis submitted must embody the results of a research project approved by the Faculty. The thesis must be written in concise English and should not exceed 20 000 words, exclusive of tables, plates, figures and appendices. A successful thesis will show capacity on the part of the candidate for independence of thought and critical evaluation of the candidate's own and published work in his/her field of study.

### Supervisor's Reports

A candidate's supervisor must report to the UNE Student Centre, at least once, on the progress of the candidate towards completion of SCI 695. In the case of a report being submitted advising of unsatisfactory progress the candidate may be asked to show cause why his/her candidature should not be terminated.

### Advanced Standing

A maximum of 24 cp of advanced standing may be granted towards the Master, on the recommendation of the Course Coordinator, as follows:

- 24 cp for units which have been completed towards an awarded Graduate Certificate or Graduate Diploma completed at UNE; **or**
- 24 cp for units which have been completed at another institution and which have not been counted towards another qualification; **or**
- 12 cp for units which have been counted towards another qualification; **and**
- Six cp on the basis of considerable professional experience in a relevant field.
- Advanced standing shall not be granted for SCI 695.

### Period of Candidature

Full-time study: maximum of two years

Part-time study: maximum of five years

### The following applies to all Masters coursework programs offered by the Faculty

Candidates who commenced candidature for a Master program prior to 2007 will be permitted to count any 200 level units completed prior to 2007 towards requirements for the Master. Candidates can elect to continue their candidature under the rules in force at the time of the commencement of candidature but the Faculty urges all Master candidates to ensure that all undergraduate level units completed are at the level of 300 or above. If you have any queries you should contact your Course Coordinator.

### Professional Doctorate in Science

The Professional Doctorate in Science is an appropriate choice for graduates with relevant experience in industry/ research/ teaching and is designed to provide a breadth of knowledge to allow interpretation and application of research within a professional or industrial or commercial context. It will provide research experience with a professional and applied focus making a significant contribution to professional practice, and to a lesser extent, to an area of knowledge; to produce critical consumers of research with a good understanding of the research process, research policies and strategies, and a knowledge of the relationship between research and professional practice.

For admission to candidature applicants must have at least five years of relevant professional experience and hold a Bachelor degree with First or Second Class Honours in an appropriate field or have completed at least one year full-time of a Master degree or equivalent.

### Degree Requirements

Candidates must complete units to the value of 144 cp including:

- (a) Graduate level units to the value of 72 cp including SCI 700 (24 cp); and
- (b) Dissertation SCI 795 (72 cp) which will embody the results of a research project completed in a professional area relevant to the field of study and approved by the Faculty.

Candidates are required to achieve an average grade of Credit in all components of SCI 700, which is normally completed during the first year of candidature. Candidates who do not achieve an overall grade of Credit in SCI 700 may be asked to show cause why he/she should remain in candidature.

The remaining 48 cp of coursework can be selected from among 500 and 600 level units offered within the University. Candidates are permitted to undertake up to the equivalent of 24 cp from another institution. This requires approval by the Faculty but it is believed that this will help broaden the knowledge base of candidates.

The dissertation (SCI 795) must be written in concise English and should not exceed 30,000 words, exclusive of tables, plates, figures and appendices. A successful dissertation will make a significant contribution to professional practice in a professional area of relevance to the field of study.

Full-time candidates will have a maximum of three consecutive semesters to complete the dissertation. Part-time candidates have a maximum of six semesters.

### Reports

At least once during the completion of SCI 795, and at any time that the supervisor or the Faculty considers expedient, the supervisor will report to the UNE Student Centre on the candidate's progress.

### Period of Candidature

Full-time study: maximum of three years

Part-time study: maximum of six years

### Research courses offered by the Faculty of The Sciences

**Master of Resource Science, Master of Rural Science, Master of Science and PhD** applicants contact:

Research Services

Phone: 02 6773 5227

Fax: 02 6773 3543

Web: [www.une.edu.au/research-services/index.html](http://www.une.edu.au/research-services/index.html)