

# Faculty of Engineering and Forestry

## **B** **(B ( ))**

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Every candidate for the Degree of Bachelor of Engineering with Honours shall follow a course of study and non-academic requirements approved by the Dean of Engineering and Forestry as laid down in these Regulations, or those consistent with the regulations in the relevant Calendar at the time they began their candidacy. The Dean of Engineering and Forestry may modify specific aspects of these degree regulations for individual candidates under the following special circumstances:

- (a) If the candidate's course of study is affected by a change in any regulations;
- (b) Prior learning and work experience; or
- (c) Other exceptional circumstances.

Any modification to a programme of study must maintain the integrity of the programme and align with the Institution of Professional Engineers New Zealand (IPENZ) accreditation guidelines for the discipline that the candidate is undertaking.

To qualify for the Degree of Bachelor of Engineering with Honours a candidate must complete:

- (a) a programme of study for the Engineering Intermediate Year of not less than 120 points;
- (b) an approved academic writing test;
- (c) a programme of three Professional Year Examinations where each year is not less than 120 points;
- (d) a programme of study which must include not less than 120 points at 400-level or higher;
- (e) the non-academic requirements.

Candidates are not permitted to enrol in any engineering courses of the Third Professional Examination prior to completion of the First Professional Examination.

- (a) The degree of Bachelor of Engineering with Honours may be awarded in the following programmes: Chemical and Process, Civil,

Computer, Electrical and Electronic, Forest, Mechanical, Mechatronics, Natural Resources, and Software.

- (b) The degree may also be completed with a Minor that denotes sub-specialisation within an engineering discipline.

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  - (a) Admission to the BE(Hons) shall be by approval of the Dean of Engineering and Forestry. All



Class honours, but having met all the academic requirements, will be eligible for the award of Third Class Honours.

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In exceptional circumstances a candidate may be permitted by the Dean of Engineering and Forestry to complete all the requirements, both academic and non-academic, of the award outside the time limitation. In such circumstances the candidate will be awarded a degree of Bachelor of Engineering.

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A candidate who enrolls concurrently for the Degree of Bachelor of Engineering with Honours and another award shall, in order to qualify for the award of both degrees, be enrolled for a course of study approved under the provisions of the General Course and Examination Regulation A3, and shall:

- (a) meet all requirements as laid down in the current regulations for the Degree of Bachelor of Engineering with Honours;
- (b) meet all requirements as laid down in the current regulations for the other award;
- (c) be approved into the concurrent programme of study by the relevant Deans of both awards.

A candidate wishing to be enrolled in any subject which is also a subject of examination for another degree shall comply with the regulations for that degree relating to prerequisites, combinations of subjects, and practical work, as are applicable to that subject.

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A candidate may enquire, from the Dean of Engineering and Forestry, as to the Faculty Guideline on the application of restricted credit as described in the General Course and Examination Regulations.

- (a) The non-academic requirements are:
  - i. an approved, valid first aid certificate;
  - ii. approved course(s) of workshop training and/or workplace safety;
  - iii. at least 800 hours (100 days) of approved practical work; and
  - iv. submission of two satisfactory written work reports based on the practical work completed.
- (b) A candidate shall present a university approved first aid certificate which is valid at some time

during the candidate's enrolment in the three professional years.

- (c) A candidate shall complete an approved course(s) of workshop training and/or workplace safety. This course(s) shall be completed before a candidate enrolls for any subject of the Second Professional Examination or within the first year of study if admitted directly to the Second Professional Examination.
- (d) A candidate may apply in writing for exemption from any workshop training or workshop safety course to the Department Administrator.
- (e) The practical work requirement shall normally be completed in no more than three periods. Details of the nature of the work required by each Department may be obtained from the College of Engineering Office or on the College of Engineering website.
- (f) Prior to commencement of each practical work period of employment a candidate shall notify the College of Engineering Office of details concerning the employment. The appropriate form is available on the student's practical work record in myUC or can be obtained from the College of Engineering Office or from the College website. Lists of employers' addresses are available at the College of Engineering Office.
- (g) A candidate shall notify the College of Engineering Office of details concerning the employment.





- (e) ENCI 429 Structural Systems
- (f) ENCN 401 Engineering in Developing Communities
- (g) ENCN 412 Traffic Engineering
- (h) ENCN 415 Pavement Engineering
- (i) ENCN 444 Water Infrastructure and Design
- (j) ENCN 445 Environmental Fluid Mechanics
- (k) ENCN 452 Advanced Geotechnical Engineering
- (l) ENCN 454 Geotechnical Earthquake Engineering
- (m) ENCN 481 Environmental Engineering Design
- (n) ENGR 403 Fire Engineering
- (o) ENGE 411 Engineering Construction Practice
- (p) ENGE 412 Rock Mechanics and Rock Engineering
- (q) ENGE 415 Engineering Geomorphology and Geohazards
- (r) GEOL 475 Engineering and Environmental Geophysics
- (s) Any 15 point 400-level option to be approved by the Director of Studies
- (t) Candidates with a GPA of 6 or more may apply to take one 600-level course approved by the Director of Studies.

Note: The above list of courses is subject to change without notice. For the most current list of courses, please refer to the University of Waterloo website at [http://www.uwaterloo.ca/academic/engr/undergraduate/degree\\_requirements/400\\_level\\_courses/](http://www.uwaterloo.ca/academic/engr/undergraduate/degree_requirements/400_level_courses/).

## Computer Engineering\*

\*S.B.E.C. UNZ CUAP approved by the Senate in December 2014.

- (1) ENEL 198 Electrical Workshop Course
- (2) ENEL 199 Basic Workshop Course
- (3) COSC 264 Introduction to Computer Networks and the Internet
- (4) EMTH 210 Engineering Mathematics 2
- (5) EMTH 211 Engineering Linear Algebra and Statistics
- (6) ENCE 260 Computer Systems
- (7) ENEL 200 Electrical and Computer Engineering Design
- (8) ENEL 220 Circuits and Signals
- (9) ENEL 270 Principles of Electronics and Devices
- (10) SENG 20 f Elec(m772 -1.11)JEMC.1.772.0 To(SENG 20)JE6a

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- (5) ENCN 221 Engineering Materials
- (6) ENCN 231 Solid Mechanics
- (7) ENCN 242 Fluid Mechanics and Hydrology
- (8) ENCN 253 Soil Mechanics
- (9) ENCN 261 Transport and Surveying
- (10) ENCN 281 Environmental Engineering

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- (1) ENNR 313 Natural Resources Engineering Design Studio 2
- (2) ENNR 320 Integrated Catchment Analysis
- (3) ENNR 322 Ecological Engineering
- (4) ENCN 301 Communication Skills Portfolio 2
- (5) ENCN 304 Deterministic Mathematical Methods
- (6) ENCN 305 Computer Programming and Stochastic Modelling
- (7) ENCN 342 Fluid Mechanics and Hydraulics
- (8) ENCN 353 Geotechnical Engineering
- (9) ENCN 371 Project and Infrastructure Management

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- (1) ENCN 493 Project
- (2) ENCN 470 Professional Engineering Development
- (3) Sufficient courses selected from:
  - (a) ENNR 405 Ecological and Bioresources Engineering
  - (b) ENNR 422 Water Resources and Irrigation Engineering
  - (c) ENNR 423 Sustainable Energy Systems
  - (d) ENCN 401 Engineering in Developing Communities
  - (e) ENCN 412 Traffic Engineering
  - (f) ENCN 415 Pavement Engineering
  - (g) ENCN 444 Water Infrastructure and Design
  - (h) ENCN 445 Environmental Fluid Mechanics
  - (i) ENCN 452 Advanced Geotechnical Engineering
  - (j) ENCN 454 Geotechnical Earthquake Engineering
  - (k) ENCN 481 Environmental Engineering Design
  - (l) ENGR 403 Fire Engineering
  - (m) ENGE 411 Engineering Construction Practice
  - (n) ENGE 412 Rock Mechanics and Rock Engineering

- (o) ENGE 415 Engineering Geomorphology and Geohazards
- (p) GEOL 475 Engineering and Environmental Geophysics
- (q) Any 15 point 400-level option to be approved by the Director of Studies
- (r) Candidates with a GPA of 6 or more may apply to take one 600-level course approved by the Director of Studies

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 e f ENCN 493 .

## Software Engineering

- (1) SENG 199 Software Engineering Workshop Training Course
- (2) SENG 201 Software Engineering 1
- (3) SENG 202 Software Engineering Project Workshop
- (4) COSC 261 Formal Languages and Compilers
- (5) COSC 262 Algorithms
- (6) COSC 265 Relational Database Systems
- (7) ENCE 260 Computer Systems
- (8) Sufficient courses selected from schedules A and B below. Courses selection must include at least one course from Schedule A.

- (a) EMTH 210 Engineering Mathematics 2
- (b) MATH 220 Discrete Mathematics and Cryptography

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- (a) COSC 264 Introduction to Computer Networks and the Internet
- (b) EMTH 211 Engineering Linear Algebra and Statistics
- (c) MATH 230 Logic, Automata, and Computability
- (1) SENG 301 Software Engineering II
- (2) SENG 302 Software Engineering Group Project
- (3) SENG 365 Web Computing Architectures
- (4) COSC 368 Humans and Computers
- (5) ENEL 301 Design and Management



(7) SOIL 203 Soil Fertility.

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\*S b ec UNZ CUAP a a d eDece be 2014.

The courses of the Third Forestry Examination shall normally be as follows:

- (1) FORE 307 Plantation Silviculture
- (2) FORE 316 For(2-24(7))3TJ/Spain/ActualTextFEFF0009BDC ( )TJEMC 1.772 0 Td(SOIL 316 F)2the7 Woodnce (BF

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- (2) FORE 316 F4,7) o(f: P d T E, 4ea )11-1. 8 o oF)8( L)da (2-24(7))3TJ5 a: PAc a Te EEFF0009BDC ( )T EMC 1.772 0 Td(SOIL 316 F4,7) FORE 30

BForSc with Honours will be required to enrol in FORE 414 Dissertation in addition to satisfying the requirements of the Fourth Forestry Examination. A candidate whose work has been of a sufficiently high standard shall be recommended for admission to the Degree with First or Second Class Honours. Each candidate obtaining Second Class Honours shall be listed in either of two divisions (Division I or Division II).

**B. B. ( ),**

With the approval of the Academic Board, a candidate who has previously qualified at any New Zealand university for the award of the degree of Bachelor of Science (with or without honours) or for any other degree may be exempted from the whole or part of both the First and Second Forestry Examinations. A special course of study, which could include both Year 2 and Year 3 papers, may be approved by the Dean of Engineering and Forestry.

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- (a) Notwithstanding anything contained in these Regulations, a candidate who has qualified for the New Zealand Diploma in Forestry may, with the approval of the Dean of Engineering and Forestry, be exempted from parts of the first three Forestry Examinations but the Dean will require a special course of study of at least one year but normally two years prior to entry into the Fourth year.
- (b) Notwithstanding anything contained in these Regulations, a candidate who has qualified with outstanding merit for the New Zealand Certificate in Forestry and who has completed the practical requirements for the award of that Certificate may, with the approval of the Dean of Engineering and Forestry, be exempted from the whole or part of the First and Second Forestry Examinations. A special course of study may be approved by the Dean.

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- (c) Notwithstanding anything contained in these Regulations, a candidate who has qualified with outstanding merit for the New Zealand Certificate in Science may, with the approval of the Dean of Engineering and Forestry, be exempted from all or part of the First Forestry Examination.

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**B. B.**

A candidate for the Degree of Bachelor of Forestry Science who is or has been enrolled for the Degree of Bachelor of Commerce shall, in addition to the credit permitted under Regulation K1 of the General Course and Examination Regulations, be permitted, with the approval of the Dean of Engineering and Forestry, to cross credit a further 15 points (0.125 EFT) from the Bachelor of Commerce Schedule in place of any FORE 400-level elective.

**B. B.**

- (a) A candidate for the Degree of Bachelor of Forestry Science who is or has been enrolled for the Degree of Bachelor of Science shall, in order to qualify for the award of both degrees, meet all requirements as laid down in the Regulations for the Degree of Bachelor of Forestry Science and obtain 180 points above 100-level in courses selected from the Schedule of Bachelor of Science which have not been credited to the Degree of Bachelor of Forestry Science or used to obtain exemption from a course in that degree. Of these points, 90 must be from 300-level courses, and include at least 60 points from a single subject or as required by the subject major. The remainder of the points must come from approved 200-level or 300-level courses.
- (b) With the approval of the Dean of Engineering and Forestry a candidate may substitute additional 200-level courses equivalent to 15 points or 300-level courses equivalent to 15 points from the Bachelor of Science schedule for any FORE 400-level elective.

*\*S b e c U N Z C U A p a a d e D e c e b e 2 0 1 4 .*

A candidate who has commenced a BForSc degree before 2015 shall complete the degree by taking courses approved by the Dean of Engineering and Forestry which are consistent with the regulations in this Calendar.

See a Ge'e a C e a' d E a' a' Re a' .

- (a) Every candidate for the Graduate Diploma in Forestry shall, before enrolling in the diploma, fulfil one of the following conditions, either:
  - i. qualify for a bachelor's degree; or
  - ii. be admitted ad eundem status as entitled to enrol for the Graduate Diploma in Forestry.
- (b) Every candidate for the Diploma shall have been approved as a candidate by the Dean of Engineering and Forestry.

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To qualify for the diploma a candidate must complete courses which have a minimum weighting of 120 points. At least 90 points shall be from the 300- and 400-level Forestry courses.

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Every candidate for the Degree of Master of Engineering shall follow a course of study approved by the Dean of Engineering and Forestry and Director of Postgraduate Studies as laid down in these Regulations, or those consistent with the regulations in the relevant Calendar at the time they began their candidacy. In special circumstances the Dean of Engineering and Forestry may modify specific aspects of the degree regulations for individual candidates.

A candidate shall have:

- (a) either
  - i. qualified for the award of the Degree of Bachelor of Engineering with First or Second Class Honours; or
  - ii. qualified for the award of the Postgraduate Diploma or Postgraduate Certificate in Engineering with a GPA of 5.0 or more; or

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The Graduate Diploma in Forestry may be awarded with Distinction.

Normal prerequisites for any courses may be exempted at the discretion of the Dean of Engineering and Forestry.

The Graduate Diploma may be studied part-time.

The Graduate Diploma will be completed in one year of full-time study (under exceptional circumstances the Dean may extend this to 18 months) or two years of part-time study. A part-time candidate is one who, because of employment, health, family or other reasons, is unable to devote his or her full-time to study; part-time enrolment requires the approval of the Academic Board.

A candidate who has failed one or more courses is allowed to repeat those courses for credit subject to the time limits in Regulation 6.

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- iii. qualified for the award of the Degree of Bachelor of Science with First or Second Class Honours in appropriate subjects; or
  - iv. in exceptional circumstances, qualified for the award of another appropriate degree in New Zealand; or
  - v. been admitted ad eundem status as entitled to proceed to the Degree of Master of Engineering; and
- (b) been approved as a candidate for the degree by 1hNT\*(acy)5:

The degree of Master of Engineering (ME) will be awarded endorsed in the following programmes: Bioengineering, Chemical and Process Engineering, Civil Engineering, Construction Management, Earthquake Engineering, Electrical and Electronic

conditions have been met:

- i. The candidate has completed 45 points of the course requirements for the PGCertEng.
- ii. The candidate has achieved an average GPA of 5.0 or better in the completed courses; and
- iii. The courses completed by the candidate fulfil the coursework requirements of the relevant programme of study for an endorsement listed in Schedule A of the ME Regulations;

and

- iv. Suitable thesis supervision and research resources are available.
- (b) Where the transfer of a candidate from the PGCertEng to the ME has been approved, the Dean of Engineering and Forestry will transfer appropriate courses from the candidate's PGCertEng studies towards their ME degree.

- (5) ENEQ 640 Displacement-based Seismic Design of Damage-Resisting Concrete Structures
- (6) ENEQ 641 Non-linear Concrete Mechanics and Modelling Techniques
- (7) ENEQ 642 Seismic Assessment and Retrofit Strategies for Existing Reinforced Concrete Buildings
- (8) ENEQ 650 Advanced Steel and Composite Structures
- (9) ENEQ 670 Seismic Bridge Engineering
- (10) ENEQ 680 Seismic Performance and Loss Estimation

- (1) ENEL 614 Signals in Biomedicine
- (2) ENEL 619 Computational Image Recovery
- (3) ENEL 650 Advanced Digital Communications
- (4) ENEL 657 Applied Digital Signal Processing
- (5) ENEL 664 Special Topic: Renewable Energy System Design
- (6) ENEL 675 Special Topic: Advanced Embedded Systems
- (7) ENEL 685 Electrical Postgraduate Project

- (1) ENGR 601 Advanced Computational Fluid Dynamics

- (1) EMTH 611 Advanced Mathematical Models
- (2) EMTH 612 Advanced Computational Techniques
- (3) EMTH 613 Advanced Statistical Methods
- (4) EMTH 614 Advanced Differential Equations
- (5) EMTH 620 High Performance Computing

- (1) ENCI 601 Risk Assessment
- (2) ENFE 601 Structural Fire Engineering
- (3) ENFE 604 Fire Design Case Study
- (4) ENFE 613 Special Topic: Human Behaviour in Fire
- (5) ENFE 681 Project
- (6) ENFE 682 Project
- (7) ENFE 683 Project

- (1) ENME 601 Mechanical Systems Design
- (2) ENME 602 Advanced Vibrations and Acoustics
- (3) ENME 603 Advanced Linear Systems Control and System Identification
- (4) ENME 604 Advanced Aerodynamics and Ground Vehicle Dynamics

- (5) ENME 605 Advanced Energy Systems Engineering
- (6) ENME 606 Advanced Engineering Product Design and Analysis
- (7) ENME 607 Advanced Materials Science and Engineering
- (8) ENME 609 Advanced Physiological Modelling
- (9) ENME 611 Advanced Mechanical System Design
- (10) ENME 612 Mechanical Vibrations and Acoustics of Continuous Systems
- (11) ENME 613 Advanced Robotics
- (12) ENME 615 Advanced Heat and Mass Transfer
- (13) ENME 617 Advanced Composite, Polymeric and Ceramic Materials
- (14) ENME 618 Advanced Engineering Management and Professional Practice for Mechanical Engineers
- (15) ENME 619 Advanced Biological Fluid Dynamics
- (16) ENME 623 Advanced Instrumentation and Sensors

- (1) ENTR 602 Accident Reduction and Prevention
- (2) ENTR 603 Advanced Pavement Design
- (3) ENTR 604 Road Asset Management
- (4) ENTR 611 Planning and Managing for Transport
- (5) ENTR 612 Transport Policy and Demand Management
- (6) ENTR 613 Highway Geometric Design
- (7) ENTR 614 Planning and Design of Sustainable Transport
- (8) ENTR 615 Transport Network Modelling
- (9) ENTR 616 Advanced Transport Planning and Modelling
- (10) ENTR 617 Traffic Engineering and Design
- (11) ENTR 618 Transport and Freight Logistics

Notes:

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of study to be followed to qualify for the degree. The degree must be completed full time by examination and thesis. A full-time candidate is one who throughout the calendar year regards study and research for the Master of Engineering in Fire Engineering as a full-time occupation.

Notes:

1. Where a candidate is a full-time student, the candidate shall be required to attend full-time study for a period of not less than one year four months and not more than three years, a programme of study approved by the Dean of Engineering and Forestry; and
2. A candidate shall pass an examination in six courses selected from the Schedule to these regulations; and

A candidate for the Degree of Master of Engineering in Fire Engineering shall:

- (a) enrol in and pursue full-time study for not less than one year four months and not more than three years, a programme of study approved by the Dean of Engineering and Forestry; and
- (b) pass an examination in six courses selected from the Schedule to these regulations; and
- (c) present a thesis and satisfy the examiners therewith.

Candidates who obtain a GPA of 8.00 or more in their programme of study will be eligible for the award of MEFE with distinction.

The following conditions shall apply to the preparation, presentation and examination of the thesis:

- (a) the presentation of the thesis shall conform to the requirements of the General Course and Examination Regulations, Part L, to the Guidelines for Masters Thesis Work and to the Library's guide to thesis production;
- (b) the thesis shall describe the work done by the candidate in an investigation in a subject approved by the Director of the Fire Engineering programme. The investigation shall be carried out at the University by the candidate under the direct supervision of a member of the academic staff. In special circumstances the investigation may be carried out in such other places for such period or periods as may be determined by the Head of Department;

- (c) the candidate shall submit for examination two copies of the thesis;
- (d) the thesis shall be examined by an external examiner appointed by Council and by one or more internal examiners appointed by Council (Note: See also General Course and Examination Regulations, Part D);
- (e) if the thesis at its first presentation is inadequate to secure a pass the Academic Board may, on the recommendation of the examiners, permit the candidate to revise the thesis and resubmit it by a specified date: except with the approval of the Dean of Engineering and Forestry the thesis shall be submitted within the time limit of this degree.

Where a candidate has demonstrated high research potential and has the support of the Director of the Fire Engineering programme, he or she may apply for transfer to a category 1 programme.

For the purpose of these regulations, a candidate who has demonstrated high research potential and has the support of the Director of the Fire Engineering programme, he or she may apply for transfer to a category 1 programme.

Master of Engineering in Fire Engineering provided the following conditions have been met:

- i. The candidate has completed a minimum of 45 points of the course requirements for the PGCertEng.
  - ii. The candidate has achieved an average GPA of 5.0 or better in the completed courses; and
  - iii. Suitable thesis or project supervision and research resources are available.
- (b) Where the transfer of a candidate from the PGCertEng to the MEFE has been approved, the Dean of Engineering and Forestry will transfer appropriate courses from the candidate's PGCertEng studies towards their MEFE degree.

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Where a candidate has demonstrated research potential and has the support of the Fire Programme Director, he or she may abandon the Master of Engineering Studies before the completion of the qualification, and transfer to the Master of

Engineering in Fire Engineering (MEFE) with such backdating of enrolment as may be approved by Academic Board.

- (a) Subject to approval of the Dean of Engineering and Forestry, a candidate for the Master of Engineering Studies may transfer to the Master of Engineering in Fire Engineering provided the following conditions have been met:
- i. The candidate has completed a minimum of 45 points of the course requirements for the PGCertEng.
  - ii. The candidate has achieved an average GPA of 5.0 or better in the completed courses; and
  - iii. Suitable thesis or project supervision and research resources are available.
- (b) Where the transfer of a candidate from the MEngSt to the MEFE has been approved, the Dean of Engineering and Forestry will transfer appropriate courses from the candidate's MEngSt studies towards their MEFE degree.

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- (b) been approved as a candidate for the degree by the Dean of Engineering and Forestry.

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1. Re e a r c e d a r d a d f i d e a d a e d e a e e a r c e a f a a .
2. C a r d a e e b e a e d f a a e e e a c e i a a a b e .

A candidate for the Degree of Master of Engineering in Management shall:

- (a) enrol in and pursue full-time for one year a programme of study approved by the Dean of Engineering; and
- (b) during the year of study, pass an examination in six courses selected from the Schedule to these Regulations; and
- (c) during the year of study, present a project report and satisfy the examiners therewith.

In cases of exceptional merit candidates may, on the recommendation of the examiners, have the degree awarded with Distinction

In recommending a candidate for admission to the degree and in recommending Distinction the examiners will take into consideration the combined results of the project report and of all courses taken.

## Schedule to the Regulations for the Degree of Master of Engineering in Management

F f c e s f a s , . . . c a r e b a c . / c e

- (1) ENMG 601 Engineering Accounting
- (2) ENMG 602 Engineering Economics and Finance
- (3) ENMG 603 Legal and Human Resource
- (4) ENMG 604 Technology, Innovation and Engineering Management
- (5) ENMG 605 Marketing, Selling and Service
- (6) ENMG 606 Strategic Management
- (7) ENMG 607 Special Topic

N e : C a r d a e a e f e D e a r f E s i e e s a d F e a e a r d a d e e d f D i c .

The following conditions shall apply to the preparation, presentation and examination of the project report:

- (a) the project report shall describe work done by the candidate on a project approved by the Director of the Master of Engineering in Management programme. The project shall be carried out by the candidate at the University under the direct supervision of a member of academic staff. In particular circumstances the project may be carried out in such other places and for such period or periods of time as may be approved by the Director of the Master of Engineering in Management programme;
- (b) the candidate shall submit for examination two hard bound copies of the project report to the Director of the Master of Engineering in Management programme;
- (c) the project report shall be submitted within one calendar year from the date upon which study for the Master of Engineering in Management commenced;
- (d) the project report shall be examined by one or more examiners appointed by the Director of the Master of Engineering in Management programme.

(8) ENMG 608 Special Topic

(9) ENMG 609 Special Topic

ENMG 680

N e : N a c e b e e e d a s e e a . I r e d s d e s c s D e c f e Ma e f E s i e e s ; M a s a e e s P a e d e e e c c e s ; ENMG 607-9 b e e e d s a s e a a d e b e c a e .

Every candidate for the Degree of Master of Engineering in Transportation shall follow a course of study approved by the Dean of Engineering and Forestry and the Director of Transportation Engineering as laid down in these Regulations, or those consistent with the regulations in the relevant Calendar at the time they began their candidacy. Where specific regulations require approval then these shall be by the Dean of Engineering and Forestry unless otherwise stated. In special circumstances the Dean of Engineering and Forestry may modify specific aspects of the degree regulations for individual candidates.

*N e :*

1. *T e e a : c e a : d a : d a d f : d e a d a e d e a : d a : b e e s f e : a e e e : c e a e e d : c e a f a a ..*
2. *C a : d d a e e : b e a e d f a a e e e a c e e : a a a b e.*

A candidate for the Degree of Master of Engineering in Transportation shall have:

- (a) either:
- i. qualified for the award of the Degree of Bachelor of Engineering with First or Second Class Honours; or
  - ii. qualified for the award of the Postgraduate Diploma or Postgraduate Certificate in Engineering with a GPA of 5 or more; or
  - iii. qualified for the award of a postgraduate qualification from a New Zealand University in appropriate subjects; or
  - iv. qualified for a bachelor's degree from a New Zealand University in appropriate subjects; or
  - v. been admitted *ad eundem statum* as entitled to proceed to the Degree of Master of Engineering in Transportation;
- (b) and having completed a qualifying programme where clauses (a) iv. to (a) v. apply; and
- (c) been approved as a candidate for the degree by the Dean of Engineering and Forestry.

*N e :*

1. *T e e a : c e a : d a : d a d f : d e a d a e d e a : d a : b e e s f e : a e e e : c e a e*

2. *C a : d d a e e : b e a e d f a a e e e a c e e : a a a b e.*

- (a) The degree must be completed by either:
- i. 120 to a maximum of 180 points of coursework including project report selected from the Schedule to these regulations; or
  - ii. 120 points of thesis, ENTR 690, and coursework to a maximum of 60 points (excluding ENTR 680) from the Schedule to these regulations.
- (b) Candidates approved into a programme of study without a postgraduate qualification, or significant relevant professional experience must complete the maximum 180 points requirements. Candidates permitted to opt for less than the maximum 180 points must determine the appropriate coursework in consultation with the supervisory team.

The degree may be awarded with Distinction for outstanding achievement measured by a GPA for the degree in the range 8.0-9.0 and completion without an extension in time.

If a candidate is required in Regulation 2(b), or has not demonstrated to the satisfaction of the Dean of Engineering and Forestry a suitable standard in previous work, they must satisfactorily complete a qualifying programme of study before enrolling in the degree of Master of Engineering in Transportation. Courses taken as part of the qualifying programme may be credited towards the degree of Master in Engineering in Transport. The course of study and conditions must be approved by the Dean of Engineering and Forestry and the Director of Transportation Engineering.

- (a) Candidates enrol for full-time study unless they have applied in writing and been approved by the Dean of Engineering and Forestry for part-time study.
- (b) Candidates must be enrolled either part-time or full-time on a continuous basis. If a candidate cannot be enrolled continuously due



Note:

1. A candidate who has completed the Bachelor of Engineering (BEng) with First Class Honours or the Bachelor of Engineering (BEng) with Second Class Honours (Upper Division) may be eligible for the Degree of Master of Engineering Studies (MEngSt) without the requirement of a postgraduate diploma or certificate.
2. A candidate who has completed the Bachelor of Engineering (BEng) with Second Class Honours (Lower Division) may be eligible for the Degree of Master of Engineering Studies (MEngSt) without the requirement of a postgraduate diploma or certificate.
3. A candidate who has completed the Bachelor of Engineering (BEng) with Second Class Honours (Lower Division) may be eligible for the Degree of Master of Engineering Studies (MEngSt) without the requirement of a postgraduate diploma or certificate.

**Section 4: Award of the Degree of Master of Engineering Studies**

Every candidate for the Degree of Master of Engineering Studies shall follow a course of study approved by the Dean of Engineering and Forestry and Director of Postgraduate Studies as laid down in these Regulations, or those consistent with the regulations in the relevant Calendar at the time they began their candidacy. In special circumstances the Dean of Engineering and Forestry may modify specific aspects of the degree regulations for individual candidates.

- (a) The degree of Master of Engineering Studies (MEngSt) is offered by the Departments of Chemical and Process Engineering, Civil and Natural Resources Engineering, Electrical and Computer Engineering, Mathematics and Statistics, and Mechanical Engineering.
- (b) It may be awarded endorsed in the following programmes:
  - i. Civil Engineering
  - ii. Construction Management
  - iii. Earthquake Engineering
  - iv. Engineering Mathematics
  - v. Fire Engineering
  - vi. Mechanical Engineering

A candidate shall have:

- (a) either
  - i. qualified for the award of the Degree of Bachelor of Engineering with First or Second Class Honours; or
  - ii. qualified for the award of the Postgraduate Diploma or Postgraduate Certificate in Engineering with a GPA of 5 or more; or
  - iii. qualified for the award of the Degree of Bachelor of Science with Honours in

4. A candidate who has completed the Bachelor of Engineering (BEng) with First Class Honours or the Bachelor of Engineering (BEng) with Second Class Honours (Upper Division) may be eligible for the Degree of Master of Engineering Studies (MEngSt) without the requirement of a postgraduate diploma or certificate.

**Section 5: Award of the Degree of Master of Engineering Studies**

- iv. in exceptional circumstances, qualified for the award of an appropriate degree in New Zealand; or
  - v. been admitted ad eundem status as entitled to proceed to the Degree of Master of Engineering Studies; and
- (b) been approved as a candidate for the degree by the Dean of Engineering and Forestry.

Note: A candidate who has completed the Bachelor of Engineering (BEng) with First Class Honours or the Bachelor of Engineering (BEng) with Second Class Honours (Upper Division) may be eligible for the Degree of Master of Engineering Studies (MEngSt) without the requirement of a postgraduate diploma or certificate.

Each candidate must complete a programme of study that consists of courses with a total course weighting of not less than 120 points. The courses must be selected as follows:

- (a) courses with a total course weighting of not less than 75 points must be selected from the courses listed in Schedule B of the Master of Engineering regulations; and
- (b) any remaining courses from Schedule C of the Master of Engineering, that ensures that the total course weight is not less than 120 points.

A candidate may be enrolled for the Master of Engineering Studies as a full-time or part-time candidate. A full-time candidate will enrol for not less than one year and not more than two years. A part-time candidate will enrol for not less than two years and not more than five years. Part-time enrolment requires the approval of the Dean of Engineering and Forestry.





Required courses:

- (a) ENFE 601 Structural Fire Engineering
- (b) ENFE 602 Fire Dynamics
- (c) ENFE 603 Fire Safety Systems
- (d) ENFE 604 Fire Design Case Study

Every candidate for the Degree of Master of Forestry Science shall follow a course of study approved by the Dean of Engineering and Forestry and the Postgraduate Director of Studies (Forestry) as laid down in these Regulations, or those consistent with the regulations in the relevant Calendar at the time they began their candidacy. In special circumstances the Dean of Engineering and Forestry may modify aspects of the degree regulations for individual candidates.

- (a) either:
  - i. qualified for the award of the Degree of Bachelor of Forestry Science with or without Honours; or
  - ii. qualified, with appropriate subjects, for the award of a degree other than the Bachelor of Forestry Science; or
  - iii. qualified for the award of Postgraduate Diploma in Forestry; or
  - iv. been admitted ad eundem status as entitled to proceed to the Degree of Master of Forestry Science; and
- (b) been approved as a candidate for the degree by the Dean of Engineering and Forestry.

Note:

1. Regulations apply to candidates who are admitted to the degree of Master of Forestry Science.
2. Candidates who are admitted to the degree of Master of Forestry Science shall be required to complete the degree within the time limit specified in these regulations.

- (a) The degree must be completed by either:
  - i. 240 points of coursework including the MForSc report selected from the Schedule to these regulations; or
  - ii. 120 points of coursework selected from the Schedule to these regulations and 120 points of thesis; or

- (e) ENFE 610 Advanced Fire Dynamics

Courses with a total course weighting of not less than 75 points shall be selected from ENME courses listed in Schedule B or Schedule C of the Master of Engineering Regulations.

- iii. by 120 points of thesis alone.
- (b) Candidates approved for the thesis alone must have completed a minimum of 120 points of postgraduate level studies, or equivalent, in an appropriate field of study to Forestry Science.

The degree may be awarded with Distinction or with Merit based on outstanding or meritorious achievement measured by GPA and completion in a timely manner as stipulated:

- (a) Distinction shall be awarded for a GPA in the range 8.0-9.0;
- (b) Merit shall be awarded for a GPA in the range 5.5-7.9; and
- (c) No candidate will be eligible for Distinction or Merit where an extension in time, as set out in Regulation 5, has been required.

- (a) Candidates enrol for full-time study unless they have applied in writing and been approved by the Dean of Engineering and Forestry for part-time study.
- (b) Candidates must be enrolled either part-time or full-time on a continuous basis. If a candidate cannot be enrolled continuously due to circumstances beyond their control they must apply to the Dean of Engineering and Forestry for a suspension. Where approved, this will extend the time limitation for the completion of the degree.
- (c) Candidates enrolled for coursework and report or coursework and thesis must complete either:
  - i. Within three years if in full-time study; or
  - ii. Within four years if in part-time study.
- (d) Candidates enrolled for thesis only must complete either:
  - i. Within two years if in full-time study; or
  - ii. Within three years if in part-time study.
- (e) Candidates who have an approved suspension in study may be required to undertake a preparatory programme prior to the resumption

of their studies. Any preparatory programme of study must be completed while on suspension, and immediately prior to the end of their suspension

- (a) A candidate may offer up to 30 points of coursework not on Schedule A of the degree for Master of Forestry Science.
- (b) A candidate enrolled in any subject that is also a subject of examination for another degree shall comply with the regulations for that degree relating to prerequisites, combinations of subjects, and practical work, as are applicable to that subject.

Candidates must follow the requirements of the General Course and Examination Regulations Part L, and the Guidelines for Master's Thesis Work, and to the Library Guide for the Presentation of Theses.

Subject to approval of the Dean of Engineering and Forestry, a candidate may transfer from the Master of Forestry Science to the Postgraduate Diploma in Forestry.

Where a thesis has been presented for the Degree of Doctor of Philosophy in the School of Forestry and the examiners are of the opinion that it does not justify the award of that degree they may recommend that it be presented for the Degree of Master of Forestry Science. In this case the Dean of Engineering and Forestry may, if required for the award of the degree, exempt the coursework component of the degree.

Where a candidate is taking the degree by Thesis or by Examination and Thesis the candidate will present a thesis embodying the results of an investigation conducted by the candidate in a subject approved by the Dean and satisfy the examiners therewith and, if so required, take an oral examination on the subject of the thesis.

## Schedule to the Regulations for the Degree of Master of Forestry Science

Code	Subject	Credits	Level	Prerequisites
FORE 422	Forest Harvest Planning	0.1250	S1	P: FORE 205 (01 Jan 2010 - present) or FORE 305 (01 Jan 2009 - present) R: ENFO 422
FORE 423	Forest Transportation and Road Design	0.1250	S2	P: FORE 205 or FORE 305 R: ENFO 423
FORE 426	Forest Products Marketing and International Trade	0.1250	S2	
FORE 435	Forest Economics 2	0.1250	S1	P: FORE 215 or subject to Head of Department approval R: FORE 211, FORE 425
FORE 436	Forest Tree Breeding	0.1250	S1	P: FORE 219, FORE 222 and FORE 224 R: FORE 408 (2006-2007)
FORE 443	Biosecurity Risk Management	0.1250	S2	R: BIOS 201
FORE 445	Environmental Forestry	0.1250	S2	P: Subject to approval to the Chair, Forestry Board of Studies.
FORE 610	Research Methods	0.1250	S1 S2	P: Subject to approval by the Head of School
FORE 616	Restoration Ecology	0.2500	S1	P: Subject to approval of the Head of Department.
FORE 618	Wood Quality	0.1250	S2	P: Subject to approval by the Head of School
FORE 619	Wood Processing	0.1250	S2	P: Subject to approval by the Head of School R: FORE 327, ENFO 327
FORE 624	Plantation Silviculture	0.2500	S1	P: Subject to approval of the Head of Department R: FORE 631

FORE 641				



\*S b ec UNZ CUAP a a d e Dece be 2014.

- (a) To qualify for the award of the Postgraduate Certificate in Engineering, a candidate shall pass the prescribed courses in the Schedule to the value of 60 points. The courses must be selected as follows:
  - i. courses with a total course weighting of not less than 30 points must be selected from the courses listed in Schedule B of the Master of Engineering regulations; and
  - ii. any remaining courses may be from Schedule C of the Master of Engineering Regulations.
- (b) Each programme of study must be approved by the Head of Department or Director of Studies and the Dean of Engineering and Forestry.

N e: P ea e fe e Tar a i Er i ee i  
e d e e i f a i i e a i f 2013.

A candidate may be enrolled, either part-time or full-time, for not more than four years.

N e: Ca d da e a e e e c e d b e e i e d e e  
a - e f - e i a c i i b a . l f a  
c a i d d a e c a i i b e e i e d c i i d e  
c c a i c e b e i d e c i e a i

See a General Calendar Regulations

Every candidate for the Postgraduate Diploma in Forestry shall follow a course of study approved by the Dean of Engineering and Forestry and the Postgraduate Director of Studies (Forestry) as laid down in these Regulations, or those consistent with the regulations in the relevant Calendar at the time they began their candidacy. In special circumstances the Dean of Engineering and Forestry may modify aspects of the degree regulations for individual candidates.

Every candidate shall have:

- (a) either
  - i. have qualified for the award of a bachelor's degree in Forestry or a related area of study in New Zealand; or
  - ii. have qualified for the award of a bachelor's or higher degree in other areas and have gained relevant experience in a Forestry related area; or
  - iii. have been admitted ad eundem staturum as entitled to proceed to the Postgraduate Diploma; and
- (b) have been approved as a candidate by the Dean of Engineering and Forestry.

The degree must be completed by 120 points of coursework selected from the Schedule to the Master of Forestry Science regulations with the exception of the MForSc Report.

The degree may be awarded with Distinction based on outstanding or meritorious achievement measured by GPA and completion in a timely manner as stipulated:

- (a) Distinction shall be awarded for a GPA in the range 8.0-9.0.
- (b) No candidate will be eligible for Distinction where an extension in time, as set out in Regulation 5, has been required.

- (a) Candidates enrol for full-time study unless they have applied in writing and been approved by the Dean of Engineering and Forestry for part-time study.
- (b) Candidates must be enrolled either part-time or full-time on a continuous basis. If a candidate cannot be enrolled continuously due to circumstances beyond their control they must apply to the Dean of Engineering and Forestry for a suspension. Where approved, this will extend the time limitation for the completion of the degree.
- (c) Candidates enrolled must complete either:
  - i. Within one year if in full-time study;
  - ii. Within two years if in part-time study.

- (a) A candidate may opt up to 15 points of coursework not on the Schedule to the degree for Master of Forestry Science.
- (b) A candidate enrolled in any subject that is also a subject of examination for another degree shall comply with the regulations for that degree relating to prerequisites, combinations of subjects, and practical work, as are applicable to that subject.

- (a) Where a candidate has followed a course of study to qualify for the degree of Master of Forestry Science by Examination and Report or Examination and Thesis and the examiners are of the opinion that the award of that degree is not justified, they may recommend the award of the Postgraduate Diploma in Forestry.
- (b) Subject to approval of the Dean of Engineering and Forestry, a candidate may transfer from the Master of Forestry Science to the Postgraduate Diploma in Forestry.

Subject to the approval of the Dean of Engineering and Forestry, a candidate may transfer from the Master of International Forestry to the Postgraduate Diploma in Forestry.

A candidate who completes the Postgraduate Diploma in Forestry is eligible for enrolment in the second year of a two-year MForSc programme, subject to the availability of staff and resources.