



FACULTY OF DESIGN & CREATIVE TECHNOLOGIES

SCHOOL OF ENGINEERING

www.eri-aut.info

POSTGRADUATE ENROLMENT HANDBOOK



FACULTY OF DESIGN & CREATIVE TECHNOLOGIES

SCHOOL OF ENGINEERING

Welcome to the School of Engineering's Postgraduate Programme.

We acknowledge that there are many options for those who seek to undertake postgraduate studies and we are pleased that you are interested in this School for your studies.

Engineering staff at AUT University are able to provide a wide range of topics in which you can expand your areas of interest. For more information on the Research Groups, please check out our web page which can be found within AUT's web page at www.eri-aut.info

We are confident that we have the academic and physical resources appropriate for you to maximise your potential as a researcher. Our approachable and professional staff will contribute to a most rewarding and enjoyable time with the School of Engineering.

TABLE OF CONTENTS

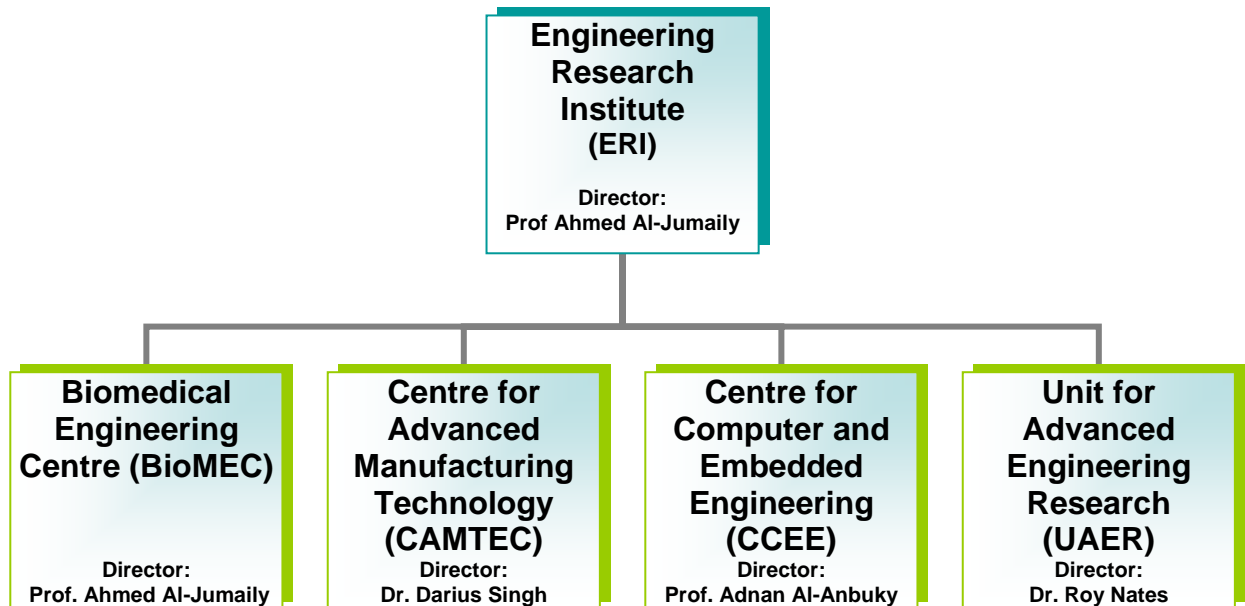
Welcome

	Introduction to Research in the School of Engineering	4
Part A	Doctorate: Doctor of Philosophy	5
Part B	Masterates: Master of Philosophy	6
	Master of Engineering	7
	Master of Engineering Studies	9
	Master of Construction Management	10
Part C	Postgraduate Diploma in Engineering (Research)	11
	Postgraduate Certificate in Professional Development (Electronics & ICT)	12
	Postgraduate Certificate in Engineering	13
Part D	Paper Descriptors by Programme in Alphabetical Order	14
Part E	Research Staff in the Schools of Engineering and Mathematical Sciences	19
Part F	Glossary and Information	23

The information contained in this handbook is correct at the time of going to press. AUT University reserves the right to make alterations to the information and requirements detailed in this handbook without prior notice if necessary.

RESEARCH IN THE SCHOOL OF ENGINEERING

The Engineering Research Institute (ERI) is a multi-disciplinary university research institute incubated by the School of Engineering, Faculty of Design and Creative Technologies at the Auckland University of Technology. The ERI aims to integrate the various existing engineering research capabilities within the School of Engineering to provide a unique opportunity to develop novel research. The ERI activities involve two main research areas, Industrial Research and Internal Research. The first provides the synergy for effective transfer of technology and research capabilities between industry and the ERI; while the second enables the ERI to explore new ideas of original research and development. The institute consists of three centres and one research unit according to the structure diagramme below, which also shows the names of the respective leaders:



Biomedical Engineering Centre

The former Diagnostic and Control Research Centre (DCRC) has recently evolved into the Biomedical Engineering Centre (BioMEC), whose research areas include the acoustic and vibration response of various biological systems such as the lungs and arteries, development of smart lenses for optical applications and development of respiratory devices. The centre has very strong industrial links, in particular with companies dealing with biomedical devices.

Centre for Advanced Manufacturing Technologies

The centre encompasses the following core areas: Materials and Manufacturing Processes, Mechanical and Product Design and Technology Management. The research front aims to continue fundamental exploration of science and engineering frontiers for possible breakthrough or disruptive technologies.

Centre of Computer & Embedded Engineering

The CCEE deals with a diversity of electrical and computer research areas with an emphasis on computer and embedded systems. This includes but is not limited to: Embedded electronics, software & communication, advanced computer architecture including FPGA and DSP technologies, modelling and control simulation, distributed sensing and networked control, wireless and radio communication, intelligent systems and soft computing.

Unit for Advanced Engineering Research

This unit acts as a research incubator for various groups within electromechanical engineering, which do not fit the theme of any of the three centres. Currently there are two groups under this unit: Thermofluids and Lighting and Illumination.

PART A DOCTORATE

DOCTOR OF PHILOSOPHY - PhD Programme Code: AK3518

This programme will prepare graduates for senior research positions. Following work experience they may aspire to positions of senior management.

Admission Requirements

A masters degree with honours or bachelors degree with honours in areas of science, technology or engineering relevant to the proposed research is required. Starting date is by arrangement.

If you do not have a degree from a New Zealand or Australian university or the equivalent the Faculty requires an English Language test result. An IELTS (Academic) score of 7.0 overall, minimum 7.0 in writing, is required for PhD enrolment.

Scholarships

AUT University offers doctoral studies scholarships for candidates who are New Zealand citizens or permanent residents. These scholarships provide either scholarship money and payment of fees, or payment of fees.

Course Summary

The Doctor of Philosophy (PhD) is awarded after the successful completion of three years or the equivalent of concentrated research effort constituting an original and substantial contribution to knowledge. Students work closely with their supervisor to prepare a thesis which is examined by independent experts applying contemporary international standards.

Course Structure

You will complete an original thesis in one of the following areas:

- Mechanical Engineering
- Electrical Engineering
- Other areas of engineering according to a match of research interests between student and staff member.

To Apply

All applicants should contact, in the first instance, the Postgraduate Programme Administrator, Postgraduate Programmes on (64 9) 921 9702. Applications for admission to the PhD are assessed by School and Faculty postgraduate committees and approved by the Doctoral Studies Board (DSB). The University Postgraduate Office formally notifies applicants of the Board's decision.

Check list:

New Students

Application for Enrolment Form with supporting documentation
Interview
Course of Study Form

Returning AUT Students

Application for Enrolment form
Interview
Course of Study Form

PART B

MASTERATES

MASTER OF PHILOSOPHY – MPhil Programme Code: AK3720

Introduction

The Master of Philosophy (MPhil) qualification is a one-year research masters degree and involves no coursework. This thesis-only degree provides an option of interdisciplinary research of an applied and professional nature. The degree may provide a pathway to doctoral studies or allow a student to complete a one-year research topic that does not require a full doctoral enrolment.

Admission Requirements

The normal admission requirement for the MPhil is completion of one of the following:

- (a) a four-year bachelor's degree
- (b) a bachelor's degree with at least second-class honours
- (c) a bachelor's degree plus a postgraduate diploma
- (d) a bachelor's degree, plus at least three years' experience relevant to the programme and evidence of ability to undertake advanced academic study
- (e) evidence of professional experience or a recognised professional qualification deemed by the programme Board of Studies to be equivalent to the level of competence specified in (a) to (d) above.

All applicants should contact, in the first instance, the Postgraduate Programme Administrator on (64 9) 921 9702. Applications for admission to the MPhil are assessed by faculty postgraduate committees and approved by the Doctoral Studies Board (DSB). The University Postgraduate Office formally notifies applicants of the Board's decision.

If you do not have a degree from a New Zealand or Australian university or the equivalent the Faculty requires an English Language test result. An IELTS (Academic) score of 6.5 overall, minimum 6.0 in each band, is required.

Check list:

New Students

- Application for Enrolment Form with supporting documentation
- Interview
- Course of Study Form

Returning AUT Students

- Application for Enrolment form
- Interview
- Course of Study Form

MASTER OF ENGINEERING - ME

Programme Code: AK3694

Introduction

The Master of Engineering is a two-year, 240 point qualification. The first year of the programme consists of a series of papers that can be combined to allow for individual interests. An appropriate theoretical basis for research is developed and compulsory papers develop competence in managing the research process and writing research proposals. Specialist papers address aspects of materials, measuring systems and system modelling.

The skills developed in the first year of study equip the second year student to undertake an in-depth investigation in a specialist area of research. In this second year the student will be assigned to a postgraduate academic supervisor, a mentor in the development of research skills and thesis preparation. Student research will be supervised by established active researchers. By working with these mentors and in their teams, students will develop good research skills and learn to function in a research group.

The objectives of the programme are to develop not only an excellent research graduate but also an individual who can integrate easily into the work environment and whom industry will actively seek.

Admission Requirements

To enter this programme directly, students must have a four-year Bachelor of Engineering degree with First Class Honours from a New Zealand university or equivalent institution. All others must apply to the Master of Engineering Studies programme (see next page).

If you do not have a degree from a New Zealand or Australian university or the equivalent the Faculty requires an English Language test result. An IELTS (Academic) score of 6.5 overall, minimum 6.0 in each band, is required.

All prospective students will need to have an interview with the Postgraduate Programme Leader or contact in the first instance, the Postgraduate Programme Administrator (649) 921 9702. The course of study must be approved by the proposed supervisor and the Programme Leader. It is essential that the Course of Study form be completed in consultation with the supervisor to ensure that the papers selected are those which will result in the desired outcome for the student.

The course structure is

Year 1:

Semester 1

Any combination of papers as indicated on the Course of Study form, to the value of 60 points.

Semester 2

708010 Research Process in Engineering (15 points)

708012 Selected Topics in Numerical Methods (15 points)

AND any one other 30 point paper as indicated on the Course of Study form.

Year 2: 778010 Thesis (120 points)

Check list:

New Students

Application for Enrolment Form with supporting documentation

Interview

Course of Study Form

Returning AUT Students

Application for Enrolment form

Interview

Course of Study Form

Note: a decision on your admission to this programme will be made following your interview and you will be advised in writing once the decision has been ratified by the Postgraduate Examination Board.

MASTER OF ENGINEERING STUDIES – MEngStud
Programme Code: AK3732

Introduction

This one-year, taught papers only qualification was introduced in response to requests for a professional engineering degree without the research component. The programme aims to develop the analytical capabilities and knowledge base of the student, strengthen knowledge of current and potential developments in their chosen discipline and provide advanced study emphasising excellence in both practice and theory. Students who wish to transfer from this programme to the Master of Engineering programme (AK3694) at the end of the first semester must achieve a GPA of B or better for the first semester papers (which are common to both programmes).

Admission Requirements

To enter this programme, prospective students must have either

- (a) a 4-year bachelors degree in engineering with a B pass average or better
- or
- (b) an approved bachelors degree plus three years' relevant work experience.

If you do not have a degree from a New Zealand or Australian university or the equivalent the Faculty requires an English Language test result. An IELTS (Academic) score of 6.5 overall, minimum 6.0 in each band, is required.

All prospective students will need to have an interview with the Postgraduate Programme Leader or contact in the first instance, the Postgraduate Programme Administrator (64 9) 921 9702. The course of study must be approved by the proposed supervisor and the Programme Leader. It is essential that the Course of Study form be completed in consultation with the supervisor to ensure that the papers selected are those which will result in the desired outcome for the student.

The course structure requires 120 points to be completed from the 30-point papers indicated on the Course of Study form.

Check list:

New Students

- Application for Enrolment Form with supporting documentation
- Interview
- Course of Study Form

Returning AUT Students

- Application for Enrolment form
- Interview
- Course of Study Form

Note: a decision on your admission to this programme will be made following your interview and you will be advised in writing once the decision has been ratified by the Postgraduate Examination Board.

MASTER OF CONSTRUCTION MANAGEMENT - MCM

Programme Code: AK1290

Introduction

The Master of Construction Management programme is a one-year, taught papers qualification designed to enhance the professional and technical skills of managers in the construction industry by focusing on the management, economic, legal and engineering skills needed in the sector. Construction projects are becoming more complex and the need for graduates who are equipped to manage the entire construction project, from planning and design through to occupation, has never been greater. To perform all these tasks, construction project managers need to develop leadership, organisational and people skills based on a sound knowledge of construction technology and management principles. The programme, which incorporates papers from the School of Engineering and the Faculty of Business, is primarily aimed at practising construction managers who are in responsible positions and who are aspiring to more senior managerial positions. Engineers, architects and quantity surveyors are some of the groups which will find this qualification a considerable enhancement of their professional development.

Admission Requirements

The normal requirement for admission is one of the following:

- (i) an undergraduate degree
- (ii) a graduate diploma
- (iii) a professional qualification in a relevant discipline recognised by the Postgraduate Board of Studies to be equivalent to at least a three year undergraduate degree

and

relevant engineering or managerial work experience as determined by the Postgraduate Board of Studies

OR

- (iv) evidence of professional experience deemed by the Postgraduate Board of Studies to be equivalent to an undergraduate degree.

If you do not have a degree from a New Zealand or Australian university or the equivalent the Faculty requires an English Language test result. An IELTS (Academic) score of 6.5 overall, minimum 6.0 in each band, is required.

Course Structure

Students must achieve 120 points to complete the qualification, with 97.5 points from Part A of the schedule in the Course of Study form and 22.5 points from Part B. A student may substitute up to 30 points from any Masters degree offered by AUT with the approval of the programme leader. The programme is one year full time.

Check list:

New Students

Application for Enrolment Form with supporting documentation
Course of Study Form

Returning AUT Students

Application for Enrolment form
Course of Study Form

PART C

POSTGRADUATE DIPLOMA

POSTGRADUATE DIPLOMA IN ENGINEERING (RESEARCH) - PgDipEng (Res)

Programme Code: AK3566

This is a one-year programme for students wishing to fill positions involving engineering research and problem solving with industry or government organisations. The student completes a research proposal following an analysis of the relevant engineering literature and an introduction to research methodology. The student performs an in-depth investigation in a chosen area of research and prepares a thesis covering their methodology as well as analysis and evaluation of results. Students are initially closely supervised, but work more autonomously as they develop their research skills.

There are two pathways within the Postgraduate Diploma. The first of these consists of one thesis only paper, with the student producing a 120-point thesis. The second normally consists of two 15-point Specialist Readings papers and a 90-point thesis, though other options for paper enrolment may be considered in consultation with the supervisor.

Admission Requirements

To enter these programmes students must have a relevant bachelors degree in science, technology or engineering, including mathematics to level 6 or its equivalent. Normally, only students with a four-year degree may enrol in the 120-point, research only pathway. Students with a three-year degree must enrol in the 90-point thesis pathway. **All prospective students will need to have an interview with the Postgraduate Programme Leader or contact in the first instance, the Postgraduate Programme Administrator, (64 9) 921 9702.**

If you do not have a degree from a New Zealand or Australian university or the equivalent the Faculty requires an English Language test result. An IELTS score of 6.5 overall, minimum 6.0 in each band, is required for Postgraduate Diploma enrolment.

The course structure is:

120-point	Thesis Engineering	708005
OR		
90-point	Thesis Engineering	708001
15 point	Specialist Readings B	708014
15 point	Specialist Readings D	708016

Check list:

New Students

- Application for Enrolment Form with supporting documentation
- Interview
- Course of Study Form

Returning AUT Students

- Application for Enrolment form
- Interview
- Course of Study Form

Note: a decision on your admission to this programme will be made following your interview and you will be advised in writing once the decision has been ratified by the Postgraduate Examination Board.

**POSTGRADUATE CERTIFICATE IN PROFESSIONAL DEVELOPMENT
(Electronics and ICT)
PgCertProfDev
Programme Code: AK1291**

This Certificate, consisting of four 15-point papers, is designed for engineers and computer science professionals with work experience in the Information and Communications Technology (ICT) sector. It was established by a consortium of industry representatives, industry associations, professional bodies and tertiary institutions. Massey University, the University of Canterbury, AUT University and the Institution of Professional Engineers New Zealand (IPENZ) are collaborating to develop the qualification and deliver papers using a distance learning model. The Postgraduate Certificate will also contribute to the professional development requirements of engineers seeking to apply for Chartered Professional Engineer (CPEng) status or those to have attained CPEng; members of the New Zealand Computer Society.

Admission Requirements

Applicants must meet one of the following requirements:

- (i) a university degree in engineering, technology, computer science or information systems and at least two years experience in the ICT sector
- (ii) professionals with at least two years experience in the ICT sector which in the opinion of the Postgraduate Board of Studies is equivalent to an undergraduate degree.

Course Structure

A student must complete all the following papers (60 points):

738031	Technical Update	15
738032*	Essential Professional Studies	15
738033*	Sector Study	15
738034*	Integrated Professional Studies	15

*This programme is also offered by Massey University, the University of Canterbury and the University of Waikato. *The papers marked * will not offered by AUT in 2007.*

No credit will be granted towards the Postgraduate Certificate in Professional Development (Electronics & ICT) from a completed University qualification. Candidates may be permitted to transfer credit of up to 30 points from equivalent papers taken with another provider of the qualification.

Checklist:

New Students

Application for Enrolment Form with supporting documentation
Course of Study Form

Returning AUT Students

Application for Enrolment form
Course of Study Form

POSTGRADUATE CERTIFICATE IN ENGINEERING

Programme Code: AK1296

This 60-point, papers only programme is particularly aimed at engineers who wish to improve their qualifications in particular areas of engineering, such as instrumentation, control, air conditioning, lighting/illumination. It is also anticipated that students within this programme may wish to transfer to the 120-point Master of Engineering Studies programme, or the 240-point Master of Engineering.

Admission Requirements

The normal admission requirement for this programme is completion of a four-year bachelor's degree in engineering.

If you do not have a degree from a New Zealand or Australian university or the equivalent the Faculty requires an English Language test result. An IELTS score of 6.5 overall, minimum 6.0 in each band, is required.

Course Structure

The student must successfully complete 60 points from the following papers: a student is required to take at least 30 points in one subject area as defined by the Programme Leader.

60 points from:

708010	Research Process in Engineering	15
708012	Selected Topics in Numerical Methods in Engineering	15
738014	Advanced Automatic Control Systems	30
738015	Digital Signal Processing Applications	30
768007	Selected Topics in Materials	30
768008	Selected Topics in System Modelling	30
768009	Advanced Measuring Systems	30

And may include a maximum of 30 points from:

708013	Specialist Readings A	30
708014	Specialist Readings B	15
708015	Specialist Readings C	30
708016	Specialist Readings D	15
708017	Specialist Readings (Technology)	30
738016	Specialist Readings (Electrical Engineering)	30
768010	Specialist Readings (Mechanical Engineering)	30

Check list:

New Students

Application for Enrolment Form, with supporting documentation
Course of Study Form

Returning Students

Application for Enrolment form
Course of Study form

PART D

PAPER DESCRIPTORS BY PROGRAMME IN ALPHABETICAL ORDER

DOCTOR of PHILOSOPHY

Thesis (PhD)

008752

360 Points

Prerequisites:

Masters degree with honours or a bachelors degree with honours.

Description

Critical analysis and expertise in research methodology, communication, analysis and evaluation, self-directed learning skills and logically prepared arguments.

MASTER OF ENGINEERING and MASTER OF ENGINEERING STUDIES

Advanced Automatic Control Systems

Semester 2

778014

30 points

Description

Advanced topics in automatic control systems, including modern techniques in control design using time and frequency domain methods; adaptive control techniques; state space representation; non-linear control systems; digital control systems; computer control systems.

Advanced High Performance Computing and Applications

Semester 2

709003

30 points

Description

Advanced topics in high performance computing including hardware and software issues in parallel systems, mastery of parallel algorithms and their implementation for engineering computer modelling, as well as contemporary research areas and applications of digital communications, electronics and signal processing.

Advanced Measuring Systems

Semester 1

768009

30 points

Description

Theoretical and experimental knowledge of current areas of interest in measurement instrumentation; generalised configurations and functional descriptions; performance characteristics; measurement of motion, dimension, force, torque, shaft power, pressure, sound, flow, temperature and heat flux; manipulation, transmission and recording of data; design techniques for mechanical and electromechanical measurement systems.

Digital Signal Processing Applications

Semester 1

738015

30 points

Description

Advanced topics in the application of digital signal processing in speech, image processing, radar, pattern recognition, adaptive filtering. Computational techniques and tools of signal processing; limitations of various linear and non-linear systems; software implementations applied to the analysis of real signals.

Selected Topics in Materials**Semester 1****768007**

30 points

Description

The purpose of this paper is to provide theoretical and experimental knowledge in polymer science and material processes. The paper emphasises the principles of material science, analytical techniques and piezoelectric effect in polymers. Some material processes will also be covered.

Selected Topics in System Modelling**Semester 2****768028**

30 points

Description

In-depth knowledge of system dynamics, measurement systems and automatic control: system response evaluation, generalised modelling methods and specific applications of modelling techniques.

Specialist Readings Electrical**Semester 1****738016**

30 points

Description

Exploration of two particular topics in depth by understanding critical reviews of relevant research and professional literature; inter-professional communication; understanding and co-operation; research methodologies.

Specialist Readings Mechanical**Semester 1/2****768010**

30 points

Description

Exploration of two particular topics in depth by understanding critical reviews of relevant research and professional literature; inter-professional communication; understanding and co-operation; research methodologies.

MASTER OF ENGINEERING only**Research Process in Engineering (compulsory)****Semester 2****708010**

15 points

Co-requisite

708012

Description

Explores how engineering research, research and development, and consultancy fits within the broad context of research. Includes: examples of different types of engineering research and methodologies, factors relating to the management of engineering projects, emphasis engineering communication, professional practice in a research environment, development of research project proposals

Selected Topics in Numerical Methods (compulsory)**Semester 2****708012**

15 points

Co-requisite

708010

Description

In depth knowledge of numerical methods applied to engineering research, including but not limited to: root-finding, elementary numerical linear algebra, solving systems of linear equations, curve fitting, numerical solution to ordinary and partial differential equations, introduction to the Finite Element Method (FEM), formulation and computer implementation. MATLAB is the software environment used.

Thesis**708008**

120 points

Prerequisites

708010, 708012

Description Critical analysis and expertise in research methodology, communication, analysis and evaluation, self-directed learning skills and logically prepared arguments.

MASTER OF CONSTRUCTION MANAGEMENT

PART A (all papers compulsory, total 97.5 points)

Advanced Built Environment (*Not available in 2007*)

709301 15 points

Description Intelligent buildings, energy efficient design, life cycle analysis, whole life costing, environmental issues, innovative technologies and materials, waste management.

Financial Management (*from MBA programme, Faculty of Business*) Semester 1 and 2

398905 7.5 points

Description Financial management and analysis, interpretation of financial data, value engineering and value management, advanced management accounting tools, decision making, project financing, risk management, budgeting, reporting.

Law for Construction (*Not available in 2007*)

419200 15 points

Description Advanced issues in Construction Contracts Act, regulatory environment, Construction Contracts Act, Building Act and other relevant legislation, property law, legal remedies, disputes resolution, adjudication, legal forms of organisation, joint ventures, international and cross-border issues, RMA, health and safety, contracts, compliance behaviours, Commerce Act and competition law, insurance and risk.

Leadership and Professional Development (*from MBA programme, Faculty of Business*)

468913 7.5 points

Semester 1

Description Leadership development, self-awareness, personal effectiveness and vision, communication styles, team working and facilitation, managing the site and the organisational context, responsibility to the company, client profession, mentoring, company and team centred.

Management in the Construction Industry

Semester 2

709300 7.5 points

Description Overview of the construction industry, the economic, political and regulatory environment, the multi-disciplinary nature of construction management, key stakeholders and relationships, integrated management approaches.

Project in Construction Management (*Not available in 2007*)

709302 30 points

Description Action learning assignment to apply skills acquired in previous papers

Project Management in Construction

Semester 1

469200 15 points

Description Project strategy, planning, tracking and monitoring of the project, managing client expectations and multiple stakeholders in uncertain and changing environments, system management, crisis management.

PART B (choose papers to the value of 22.5 points)

Construction Economics (*Not available in 2007*)

379200

7.5 points

Description

Procurement, value management, construction industry markets, production and costs, interaction between the construction sector and other sectors of the economy, property and leasing, property development, life cycle analysis and costing.

Employment Relations (*from MBA programme, Faculty of Business*)

468964

7.5 points (*Not available in 2007*)

Description

Legal requirements in domestic and international environments, health and safety issues, relationships with unions, negotiation, disputes and conflict resolution.

Human Resource Management (*from MBA programme, Faculty of Business*)

468910

15 points

Semester 1 and 2

Description

Employment contracts, managing in domestic and international environments, expatriate workforces, managing performance, teams, sub-contractors, consultants, managing a culturally diverse workforce.

Information Systems (*from MBA programme, Faculty of Business*)

408906

7.5 points

Semester 1

Description

Construction industry based software e.g. Prima Vera, end-value; web-based system management, Industry information systems, managing suppliers and supply chain through information systems

Operations Management (*from MBA programme, Faculty of Business*)

468911

7.5 points

Semester 1 and 2

Description

The balancing of the conflicting objectives of customer service and resource utilisation, key operational issues of capacity, scheduling and inventory management, location, layout, work process and design.

Research Process in Engineering

Semester 2

708010

15 points

Description

Explores how engineering research, research and development, and consultancy fits within the broad context of research. Includes: examples of different types of engineering research and methodologies, factors relating to the management of engineering projects, emphasis engineering communication, professional practice in a research environment, development of research project proposals

Specialist Readings: Construction

Semester 1 or 2

709303

15 points

Description

Individual research paper

Supply Chain Management (*from MBA programme, Faculty of Business*)

Semester 2

468969

7.5 points

Description

Flow of materials and flow of information from various tiers of suppliers through to production and/or service to an organisation's customer and out to the end user, warehousing, logistics, tools and models.

POSTGRADUATE DIPLOMA IN ENGINEERING (RESEARCH)

Option 1

Thesis (PgDipEng(Res))

708005 120 points

Description Critical analysis and expertise in research methodology, communication, analysis and evaluation, self-directed learning skills and logically prepared arguments.

Option 2

Distributed and Mobile Systems

Semester 1

708100 15 points

Prerequisites 715189 Algebra and Discrete Mathematics
716181 Algorithm Design and Analysis

Description Investigates distributed system engineering principles and technology that are important for real-world enterprise system development.

Secure and Reliable Systems

Semester 2

708101 15 points

Prerequisites 715189 Algebra and Discrete Mathematics
716181 Algorithm Design and Analysis

Description Investigates the tools and contemporary strategies necessary to implement effective security on a computer system and enhance its reliability.

Specialist Readings B

Semester 1 or 2

708014 15 points

Description: In-depth exploration of one particular topic by understanding critical reviews of relevant research and professional literature; inter-professional communication, understanding and co-operation.

Specialist Readings D

Semester 1 or 2

708016 15 points

Description: In-depth exploration of one particular topic by understanding critical reviews of relevant research and professional literature; inter-professional communication, understanding and co-operation.

Thesis (PGDipEng (Res))

708001 90 points

Co-requisites 708014 Specialist Readings B, 708016 Specialist Readings D

Description Critical analysis and expertise in research methodology, communication, analysis and evaluation, self-directed learning skills and logically prepared arguments.

PART E

Research Staff in the Schools of Engineering and Mathematical Sciences

SCHOOL OF ENGINEERING ENGINEERING RESEARCH INSTITUTE

Director, Professor Ahmed Al-Jumaily

ELECTRICAL/ELECTRONIC ENGINEERING

Name: Professor Adnan Al-Anbuky
Director, Centre for Computer and Embedded Engineering (CCEE)

Phone: 09 921-9836 (DD)

Fax: 09 921-9973

Mobile: 021-459-550

Email: adnan.anbuky@aut.ac.nz

Website: www.aut.ac.nz

Qualifications: PhD

Research interests:

Intelligent embedded systems with emphasis on operational & control management network architecture. Applications include industrial sensing, process management & control, service automation and management. This includes but not limited to areas of knowledge acquisition and distribution, local and wide networks protocols & organisations, controller intelligence and miniaturization, real time interaction among sensors and integrated sensing information etc.

Name: Dr John Collins

Phone: 09 921 9999 x 8336

Fax: 09 921-9973

Email: john.collins@aut.ac.nz

Qualifications: PhD

Research interests:

Embedded systems, software

Name: Dr Hamid Gholamhosseini

Phone: 09 921 9999 x 8755

Fax: 09 921 9973

Email: hamid.gholamhosseini@aut.ac.nz

Qualifications: PhD

Research interests:

Biomedical engineering, signal processing, embedded systems, artificial neural networks

Name: Dr Slava Kitaev

Phone: 09-921-9999 x 8158

Email: slava.kitaev@aut.ac.nz

Qualifications: PhD

Research interests:

Computer science, enterprise computer systems, software

Name: Associate Professor David Wilson

Phone: 09 921 9999 x 8732

Fax: 09 921 9973

Email: di.wilson@aut.ac.nz

Qualifications: PhD

Research interests:

Automatic control, industrial computing, digital signal processing, numerical analysis, engineering mathematics, neural networks, fuzzy control

MECHANICAL ENGINEERING

Name: Professor Ahmed Al-Jumaily
Director, BioMedical Engineering Research Centre (BioMEC)
(on sabbatical leave, Aug 06- Aug 07)

Phone: 09 921-9777 (DD)

Fax: 09 921-9973

Mobile: 021-524-468

Email: ahmed.aljumaily@aut.ac.nz

Qualifications: PhD

Research interests:

System dynamics and control, modelling of eletromechanical systems, vibration, smart optical polymers, bioengineering

Name: A/Professor Zhan Chen

Phone: 9 921 9999 x 8737

Fax: 09 921 9973

Email: zhan.chen@aut.ac.nz

Qualifications: PhD

Research interests: Materials engineering. solidification and die casting, semi-solid metals forming, materials joining, interfacial reactions, microstructures & mechanical structures

Name: Dr Indra Gunawan

Phone: 09 921 9999 x 8075

Fax: 09 921 9973

Email: indra.gunawan@aut.ac.nz

Qualifications: PhD

Research interests:

Quality and reliability engineering, applications of operations research, applied statistics, probability modelling, engineering systems design

Name: Dr Guy Littlefair

Phone: 09 921 9999 x 6228

Fax: 09 921 9973

E-mail: guy.littlefair@aut.ac.nz

Qualifications: PhD

Research interests:

Applied engineering, product analysis, machining operations, analysis and synthesis of data, applied computing, vibration analysis, signal processing, finite element methods.

Name: Dr Roy Nates
Director, Unit for Advanced Engineering Research (UAER)

Phone: 09 921 9999 x 8102
Fax: 09 921 9973
Email: roy.nates@aut.ac.nz
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SCHOOL OF MATHEMATICAL SCIENCES

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Director:

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Geographical information systems, monitoring geological processes, assessment and modelling coastal erosion, statistical mechanics, atomic spectroscopy, astrophysics, education research

Mathematical Sciences

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Algebraic commutativity, algebraic structures, categories and sketches, computer software, object oriented programming

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Qualifications: PhD

Research interests:

Asymptotic methods for differential equations, mathematics education, mathematics promotion and popularization

PART F

GLOSSARY AND INFORMATION

- Code number:* The number which refers to each Paper within a Programme. This School's code numbers begin with 7.
- Co-requisites:* Papers which must be studied at the same time as certain other papers.
- ERI:* Engineering Research Institute
- GPA:* Grade Point Average
- Handbooks:* Once enrolled in a postgraduate programme, you will be provided with the AUT Postgraduate Handbook and the Faculty publication "Mastering Science and Engineering". Most of the information you require (e.g. aegrotat considerations, time extensions, etc.) can be found within these two publications. When enrolled in a Thesis paper, you will be provided with the School's Thesis Writing Guidelines.
- Paper:* A component of a Programme. Each paper you pass earns points towards your qualification. The coursework papers are offered either in semester 1 or in semester 2. You can enrol in the research papers at any time of the year providing you have the prerequisites.
- Points:* A value given to each Paper. Taught papers (Coursework) have value of 30, or in some cases 15, points. Research papers (Thesis or Dissertation) have a value of: Thesis - 360, 240, 120 or 90 points and Dissertation - 60 or 45 points. A full-time student enrolls in a minimum of 120 points per annum.
- Pre-requisites:* Papers you must have passed before you can enrol in certain other papers.
- Programme:* A particular course of study
- Programme Code:* A number which refers to a specific qualification
- Qualification:* A complete Programme
- Semesters:* The School has an academic year of two *semesters* - semesters 1 and 2.
- Student Allowance:* In order to be eligible for a student allowance, you must enrol in 60 points each semester.

Each year a series of postgraduate workshops, some of which are compulsory, will be held on a range of subjects, e.g. thesis writing, managing long documents, First Aid, using Endnote, etc. Students will be notified of the workshop schedule at the start of each semester.