

PC-ENG Postgraduate Certificate in Engineering

Year and Campus:	2011 - Parkville														
CRICOS Code:	045960B														
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees														
Level:	Graduate/Postgraduate														
Duration & Credit Points:	50 credit points taken over 6 months full time. This course is available as full or part time.														
Coordinator:	Prof. Jamie Evans														
Contact:	Melbourne School of Engineering eng-info@unimelb.edu.au (mailto:eng-info@unimelb.edu.au) http://www.eng.unimelb.edu.au (http://www.eng.unimelb.edu.au)														
Course Overview:	The Postgraduate Certificate in Engineering is used to qualify students for further graduate study in a related area to their previous Engineering degree and to provide foundation studies for students who have an Engineering degree and who want to expand or update their knowledge. It is particularly useful for students returning to tertiary study after time away from an academic environment														
Objectives:	This course has as its objectives that graduates should: <ul style="list-style-type: none"># Have a sound fundamental understanding of the scientific principles underlying technology# Possess analytical, problem-solving and, where relevant, design skills, including those appropriate for sustainable development# Have verbal and written communication skills that enable them to make a meaningful contribution to the changes facing our society; and# Understand the social, cultural, global and environmental responsibilities of the professional engineer, and the need for sustainable development														
Course Structure & Available Subjects:	Students choose any four subjects (50 credit points) from the list of postgraduate subjects offered in Specialised Masters courses within the Melbourne School of Engineering provided they have the pre-requisites to do so. Students seeking subsequent entry to graduate programs offered by the Melbourne School of Engineering should seek appropriate course advice to ensure that they will have the required skills and knowledge at the completion of the program														
Majors/Minors/ Specialisations	Discipline areas and related subjects within the Postgraduate Certificate in Engineering Students may choose any four subjects from the list of postgraduate subjects offered within the following discipline areas: <ul style="list-style-type: none"># Engineering Management and Project Management# Environmental Engineering# Information and Communication Technology# Biomedical Engineering# Geographic Information Systems and Technology														
Subject Options:	<div>Disciplines and subjects available in the Postgraduate Certificate in Engineering</div> <div>Engineering Management and Project Management</div> <div>The following subjects are available in the Postgraduate Certificate in Engineering in the engineering management and project management discipline</div> <table><tr><th>Subject</th><th>Study Period Commencement:</th><th>Credit Points:</th></tr><tr><td>ENGM90007 Project Management Practices</td><td>Not offered 2011</td><td>12.50</td></tr><tr><td>ENGM90010 Management of Technological Enterprises</td><td>Not offered 2011</td><td>12.50</td></tr><tr><td>ENGM90006 Engineering Contracts and Procurement</td><td>Not offered 2011</td><td>12.50</td></tr></table> <div>Environmental Engineering</div> <div>The following subjects are available in the Postgraduate Certificate in Engineering in the environmental engineering discipline</div>			Subject	Study Period Commencement:	Credit Points:	ENGM90007 Project Management Practices	Not offered 2011	12.50	ENGM90010 Management of Technological Enterprises	Not offered 2011	12.50	ENGM90006 Engineering Contracts and Procurement	Not offered 2011	12.50
Subject	Study Period Commencement:	Credit Points:													
ENGM90007 Project Management Practices	Not offered 2011	12.50													
ENGM90010 Management of Technological Enterprises	Not offered 2011	12.50													
ENGM90006 Engineering Contracts and Procurement	Not offered 2011	12.50													

Subject	Study Period Commencement:	Credit Points:
CVEN90017 Earthquake Resistant Design of Buildings	Not offered 2011	12.50
CVEN90024 High Rise Structures	Not offered 2011	12.50
CVEN90026 Extreme Loading of Structures	Not offered 2011	12.50
ENEN90034 Hydrological Processes	Not offered 2011	12.50
ENGR90010 Mineral Economics	Semester 1	12.50
ENGR90011 Mineral Processing and Waste Management	Semester 1	12.50
ENGR90013 Surface Mine Planning and Mining Methods	Semester 1	12.50
ENGR90012 Soil Rock and Tailings Mechanics	Semester 1	12.50
ENEN90006 Solid Wastes to Sustainable Resources	Not offered 2011	12.50
CVEN90027 Geotechnical Applications	Not offered 2011	12.50
CVEN90016 Concrete Design and Technology	Not offered 2011	12.50
ENGR90014 Underground Mining and Planning Methods	Semester 2	12.50
CVEN90018 Structural Dynamics and Modelling	Not offered 2011	12.50
CVEN90019 Sustainable Water Resources Systems	Not offered 2011	12.50
ENGR90015 Mining Geotechnics and Mine Design	Semester 2	12.50
ENGR90016 Mine Dewatering, Ventilation and Power	Semester 2	12.50
CVEN90035 Design in Steel & Other Materials	Not offered 2011	12.50
ENGR90017 Risk and Safety Management	Semester 2	12.50
ENEN90025 Design of Environmental Systems	Not offered 2011	12.50
ENEN90005 Environmental Management ISO 14000	Not offered 2011	12.50
ENEN90011 Energy Efficiency Technology	Not offered 2011	12.50
ENEN90030 Contaminant Hydrogeology	Not offered 2011	12.50
CVEN90043 Sustainable Infrastructure Systems	Not offered 2011	12.50
ENEN90031 Quantitative Environmental Modelling	Not offered 2011	12.50
ENEN90028 Monitoring Environmental Impacts	Not offered 2011	12.50
ENEN90032 Environmental Analysis Tools	Not offered 2011	12.50
CVEN90019 Sustainable Water Resources Systems	Not offered 2011	12.50
ENEN90005 Environmental Management ISO 14000	Not offered 2011	12.50
ENEN90030 Contaminant Hydrogeology	Not offered 2011	12.50

Information and Communication Technology

The following subjects are available in the Postgraduate Certificate in Engineering in the Information and Communication Technology disciplines of Electrical and Electronic Engineering and in Computer Science and Software Engineering

ELEN90007 Wireless Communication Systems ([../view/2011/ELEN90007](http://handbook.unimelb.edu.au/view/2011/ELEN90007)) (12.5) Semester

2

ELEN90003 Network Design and Optimisation ([../view/2011/ELEN90003](#)) (12.5)

Semester2

ELEN90013 Mobile and Wireless Networks and Design ([../view/2011/ELEN90013](#)) (12.5)

Semester1

ELEN90034 Optical Networks and Design ([../view/2011/ELEN90034](#)) (12.5) Semester2**ELEN90016 Broadband and Access Networking and Design** ([../view/2011/ELEN90016](#)) (12.5) Semester 2

Subject	Study Period Commencement:	Credit Points:
BMEN90002 Neural Information Processing	Semester 2	12.50
BMEN90003 Clinical Engineering	Semester 2	12.50
ELEN90006 Internet Engineering	Semester 1	12.50
ELEN90014 Multimedia Content Delivery	Semester 1	12.50
ELEN90008 Signalling and Network Management	Semester 2	12.50
ELEN90016 Broadband Access Networking and Design	Semester 2	12.50
ELEN90051 Advanced Communication Systems	Semester 1	12.50
ELEN90052 Advanced Signal Processing	Semester 1	12.50
ELEN90054 Probability and Random Models	Semester 1	12.50
ELEN90057 Communication Systems	Semester 2	12.50
ELEN90059 Lightwave Systems	Semester 1	12.50
ELEN90061 Communication Networks	Semester 2	12.50
ELEN90062 High Speed Electronics	Semester 2	12.50
ELEN90064 Advanced Control Systems	Semester 2	12.50
COMP90016 Computational Genomics	Not offered 2011	12.50
COMP90024 Cluster and Grid Computing	Not offered 2011	12.50
COMP90041 Programming and Software Development	Not offered 2011	12.50
COMP90038 Algorithms and Complexity	Not offered 2011	12.50
COMP90007 Internet Technologies	Not offered 2011	12.50
COMP90015 Distributed Systems	Not offered 2011	12.50
COMP90010 Web Technologies and Applications	Semester 1	12.50
SWEN90003 IT Project Management	Not offered 2011	12.50
SWEN90002 Engineering for Internet Applications	Not offered 2011	12.50
COMP90014 Algorithms for Functional Genomics	Not offered 2011	12.50

Biomedical Engineering

The following subjects are available in the Postgraduate Certificate in Engineering in the Biomedical Engineering discipline (further subjects will be offered from 2011)

Subject	Study Period Commencement:	Credit Points:
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COMP90016 Computational Genomics	Not offered 2011	12.50
BMEN90002 Neural Information Processing	Semester 2	12.50
COMP90014 Algorithms for Functional Genomics	Not offered 2011	12.50
BMEN90003 Clinical Engineering	Semester 2	12.50
BMEN90011 Tissue Engineering & Stem Cells	Semester 2	12.50
BMEN90007 Anatomy & Physiology for Engineers	Semester 2	12.50

Geographic Information Systems and Technology

The following subjects are available in the Postgraduate Certificate in Engineering in the Geographic Information Systems and Technology discipline (further subjects will be offered from 2011)

Subject	Study Period Commencement:	Credit Points:
GEOM90008 Foundations of Spatial Information	Not offered 2011	12.50
GEOM90007 Spatial Visualisation	Not offered 2011	12.50
GEOM90018 Spatial Databases	Not offered 2011	12.50
GEOM90029 Spatial Visualisation on Line	Not offered 2011	12.50
GEOM90015 Spatial Data Infrastructure	Not offered 2011	12.50
GEOM90005 Remote Sensing	Not offered 2011	12.50
GEOM90006 Spatial Analysis	Not offered 2011	12.50
SWEN90003 IT Project Management	Not offered 2011	12.50
CVEN90045 Engineering Project Implementation	Not offered 2011	12.50

Entry Requirements:

Entry Requirements

Three year degree in engineering, science or related discipline with an average mark of 65% or greater.

Language Requirements

International students and students whose prior qualifications are from a university overseas where English is not the official language of instruction and examination need to supply proof of academic English language competency. Proof acceptable to the University includes:

Original evidence of an English Language test score at a sitting within the last 24 months of either -

TOEFL - at least 577 and a TWE of at least 4.5 (paper based) or a TOEFL of at least 233 with an Essay Rating of at least 4.5 (computer based)

or

IELTS - at least 6.5. (A minimum band score of 6 is required in the Academic Writing module).

Entry under a slightly lower Engineering alternative* English Language entry requirement is available as follows:

TOEFL - at least 550, with a TWE of 4 or the computer based TOEFL of at least 213 with an Essay Rating Score of at least 4 and agreeing in writing to undertake and pass an ESL subject in the first semester of study at The University of Melbourne

or

IELTS - at least 6 and agreeing in writing to undertake and pass an ESL subject in the first semester of study at The University of Melbourne.

* The Melbourne School of Engineering's English Language alternative may affect the duration and cost of your course.

Core Participation Requirements:

For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Commonwealth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further

	details on the disability support scheme can be found at the Disability Liaison Unit website: http://www.services.unimelb.edu.au/disability/
Further Study:	Successful completion of the Postgraduate Certificate in Engineering may allow you to enrol in some Masters by Coursework programs within the Melbourne School of Engineering
Graduate Attributes:	Demonstrate some knowledge and understanding of selected areas of a specialisation or across discipline areas; Access and appreciate national and international debates in their specialised areas of study or across discipline areas; and Qualify for further graduate study in related areas to the area of specialisation.
Professional Accreditation:	None
Generic Skills:	On completion of this course students should have: <ul style="list-style-type: none"> # Strong analytical skills # Practical ingenuity and creativity # Understanding of global issues # Communication Creativity; and # Lifelong learners
Links to further information:	http://www.eng.unimelb.edu.au/Postgrad/
Notes:	None