

DR-PHILENG Doctor of Philosophy - Engineering

Year and Campus:	2016 - Parkville
CRICOS Code:	056957F
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Level:	Research Higher Degree
Duration & Credit Points:	Students are expected to complete this research in 4.00 years full time, or equivalent part time. Credit Points: 0
Coordinator:	Associate Dean (Research Training)
Contact:	<p>Melbourne School of Engineering Ground Floor, Old Engineering (Building 173)</p> <p>Prospective students: Visit: http://www.eng.unimelb.edu.au/study/degrees (http://www.eng.unimelb.edu.au/study/degrees) Enquires: https://enquiry.app.unimelb.edu.au/?cc=MSE-ALL&fn=MSE (https://enquiry.app.unimelb.edu.au/?cc=MSE-ALL&fn=MSE) Current Students: Email:13MELB@unimelb.edu.au Phone: 13 MELB (13 6352) +(61 3) 9035 5511</p>
Course Overview:	<p>The degree of Doctor of Philosophy signifies that the holder has undertaken a substantial piece of original research, which has been conducted and reported by the holder under proper academic supervision and in a research environment for a prescribed period. The PhD thesis demonstrates authority in the candidate's field and shows evidence of command of knowledge in relevant fields. It shows that the candidate has a thorough grasp of the appropriate methodological techniques and an awareness of their limitations. The thesis also makes a distinct contribution to knowledge. Its contribution to knowledge rests on originality of approach and/or interpretation of the findings and, in some cases, the discovery of new facts. The thesis demonstrates an ability to communicate research findings effectively in the professional arena and in an international context. It is a careful, rigorous and sustained piece of work demonstrating that a research 'apprenticeship' is complete and the holder is admitted to the community of scholars in the discipline.</p> <p>In scope, the PhD thesis differs from a research Masters thesis chiefly by its deeper and more comprehensive treatment of the chosen subject. It is written succinctly, in English, unless approval has been given for the thesis to be written in a language other than English. The normal length of a PhD thesis is 80,000 words, exclusive of words in tables, maps, bibliographies and appendices. Footnotes are included as part of the word limit. The thesis should not exceed 100,000 words (or equivalent) without special approval from the Research Higher Degrees Committee.</p> <p>A candidate will have appropriately experienced supervisors and an advisory committee who in consultation with the candidate, arranges a course of supervised research designed to suit the project requirements and interests of the candidate. A candidate may be required to supplement their research program by attendance at, or enrolment in, additional subjects if considered necessary by the supervisor(s). All students are required to attend departmental seminars over the period of their candidature.</p> <p>Duration The normal period of candidature is three years for full-time candidates with the possibility of two, six month extensions. All PhD candidates are required to complete a minimum of 12 months full-time research at the University in order to benefit from planning, conducting and writing-up their research within a University community and environment. Normally the entire PhD is undertaken at the University. To be eligible to submit a thesis, students must be enrolled in their course for the minimum period of 24 months full-time equivalent.</p> <p>Intake Students may commence a DR-PHILENG (Doctor of Philosophy-Engineering) at any time during the year subject to prior arrangement with their nominated supervisor.</p> <p>Graduate research students in the Melbourne School of Engineering are required to enrol in coursework components. Enrolment in these coursework subjects is dependent</p>

	<p>on commencement in the PhD-Engineering prior to the first day of scheduled classes. Students are encouraged to enrol into their graduate research degree prior to Semester 1 or Semester 2 class commencement if they are intending to enrol in coursework subjects in the corresponding semester.</p> <p>Please check with the relevant department prior to making any arrangements for enrolment or travel.</p>																																	
<p>Learning Outcomes:</p>	<p>See 'Graduate Attributes'</p>																																	
<p>Course Structure & Available Subjects:</p>	<p>Coursework Component</p> <p>All PhD students in the Melbourne School of Engineering must complete two subjects from the approved lists below prior to confirmation. Students in the Department of Electrical and Electronic Engineering must complete two additional subjects after confirmation, which may be selected outside of the Departmental list with additional approval.</p> <p>Awarding of Final Mark & Grade</p> <p>Students must successfully complete the required coursework component in order to be awarded the Doctor of Philosophy - Engineering.</p>																																	
<p>Subject Options:</p>	<p>All students in the Melbourne School of Engineering must complete two subjects from the approved lists below prior to confirmation. Students in the Department of Electrical and Electronic Engineering must complete two additional subjects after confirmation, which may be chosen outside of the Departmental list with additional approval.</p> <p>If a student does not have sufficient background in the subjects or their area of research, they may be required to take preliminary undergraduate subjects or complementary subjects such as 'LING90002:Presenting Academic Discourse' or 'MAST90007:Statistics for Research Workers'. Preliminary undergraduate and complementary subjects will not count towards the postgraduate level coursework requirement for the Doctor of Philosophy-Engineering (DR-PHILENG).</p> <p>Students in the following Departments may select subjects from the complete list below:</p> <ul style="list-style-type: none"> • Chemical and Biomolecular Engineering • Computing and Information Systems • Infrastructure Engineering • Mechanical Engineering <p>Graduate/Postgraduate subjects NOT listed below may be selected in consultation with the student's supervisor and require the endorsement from the subject coordinator and Head of Department or their nominee.</p> <p>Students in Electrical and Electronic Engineering must select from the Electrical and Electronic Engineering list.</p> <p>Subjects Available:</p> <p>Chemical and Biomolecular Engineering</p> <table border="1" data-bbox="387 1420 1485 2072"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>BIEN90004 Biochemical & Pharmaceutical Engineering</td> <td>Semester 2</td> <td>12.5</td> </tr> <tr> <td>BMEN90011 Tissue Engineering & Stem Cells</td> <td>Semester 2</td> <td>12.5</td> </tr> <tr> <td>BMEN90012 Soft Matter Engineering</td> <td>Semester 1</td> <td>12.5</td> </tr> <tr> <td>CHEN90007 Advanced Thermo & Reactor Engineering</td> <td>Semester 2</td> <td>12.5</td> </tr> <tr> <td>CHEN90010 Minerals, Materials and Recycling</td> <td>Semester 2</td> <td>12.5</td> </tr> <tr> <td>CHEN90011 Bioenvironmental Engineering</td> <td>Semester 2</td> <td>12.5</td> </tr> <tr> <td>CHEN90012 Process Equipment Design</td> <td>Semester 1</td> <td>12.5</td> </tr> <tr> <td>CHEN90018 Particle Mechanics and Processing</td> <td>Semester 1</td> <td>12.5</td> </tr> <tr> <td>CHEN90019 Advanced Heat & Mass Transport Processes</td> <td>Semester 1</td> <td>12.5</td> </tr> <tr> <td>CHEN90027 Carbon Capture and Storage</td> <td>Semester 1</td> <td>12.5</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	BIEN90004 Biochemical & Pharmaceutical Engineering	Semester 2	12.5	BMEN90011 Tissue Engineering & Stem Cells	Semester 2	12.5	BMEN90012 Soft Matter Engineering	Semester 1	12.5	CHEN90007 Advanced Thermo & Reactor Engineering	Semester 2	12.5	CHEN90010 Minerals, Materials and Recycling	Semester 2	12.5	CHEN90011 Bioenvironmental Engineering	Semester 2	12.5	CHEN90012 Process Equipment Design	Semester 1	12.5	CHEN90018 Particle Mechanics and Processing	Semester 1	12.5	CHEN90019 Advanced Heat & Mass Transport Processes	Semester 1	12.5	CHEN90027 Carbon Capture and Storage	Semester 1	12.5
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CHEN90031 Bioprocess Engineering	Semester 1	12.5
CHEN90032 Process Dynamics And Control	Semester 2	12.5
CHEN90034 Research Methods	Semester 1	12.5
CHEN90035 Advanced Topics in Chemical Engineering	January	12.5
CHEN90036 Recent Advances in Separation Processes	Semester 2	12.5
ENGR90024 Computational Fluid Dynamics	Semester 1	12.5
ENGR90029 Analysing Energy Systems	Semester 1	12.5
FOOD90029 Food Engineering	Semester 1	12.5

Computing and Information Systems Engineering

Subject	Study Period Commencement:	Credit Points:
BINF90002 Elements of Bioinformatics	Semester 1	12.5
COMP90007 Internet Technologies	Semester 1, Semester 2	12.5
COMP90014 Algorithms for Functional Genomics	Semester 2	12.5
COMP90015 Distributed Systems	Semester 1, Semester 2	12.5
COMP90016 Computational Genomics	Semester 1	12.5
COMP90017 Sensor Networks and Applications	Not offered 2016	12.5
COMP90018 Mobile Computing Systems Programming	Semester 2	12.5
COMP90019 Distributed Computing Project	Semester 1, Semester 2	25
COMP90020 Distributed Algorithms	Semester 1	12.5
COMP90024 Cluster and Cloud Computing	Semester 1	12.5
COMP90025 Parallel and Multicore Computing	Semester 2	12.5
COMP90038 Algorithms and Complexity	Semester 1, Semester 2	12.5
COMP90041 Programming and Software Development	Semester 1, Semester 2	12.5
COMP90042 Web Search and Text Analysis	Semester 1	12.5
COMP90043 Cryptography and Security	Semester 2	12.5
COMP90044 Research Methods	Semester 2	12.5
COMP90045 Programming Language Implementation	Not offered 2016	12.5
COMP90046 Constraint Programming	Not offered 2016	12.5
COMP90048 Declarative Programming	Semester 2	12.5
COMP90049 Knowledge Technologies	Semester 1, Semester 2	12.5
COMP90050 Advanced Database Systems	Semester 1	12.5
COMP90051 Statistical Machine Learning	Semester 2	12.5
COMP90054 AI Planning for Autonomy	Semester 2	12.5
COMP90057 Advanced Theoretical Computer Science	Semester 2	12.5

COMP90058 Advanced Spatiotemporal Data Analytics	Not offered 2016	12.5
GEOM90018 Spatial Databases	Semester 1	12.5
GEOM90042 Spatial Information Programming	Semester 1	12.5
INFO90001 eHealth & Biomedical Informatics Methods	October	12.5
INFO90002 Database Systems & Information Modelling	Semester 1, Semester 2	12.5
ISYS90026 Fundamentals of Information Systems	Semester 1	12.5
ISYS90031 Research Methods in Information Systems	Semester 1	12.5
ISYS90032 Emerging Technologies and Issues	Semester 1, Semester 2	12.5
ISYS90034 B2B Electronic Commerce	Semester 2	12.5
ISYS90035 Knowledge Management Systems	Semester 1	12.5
ISYS90036 Enterprise Systems	Semester 1	12.5
ISYS90037 Managing IS Projects: People & Politics	Semester 1	12.5
ISYS90038 IS Strategy and Governance	March, Semester 2	12.5
ISYS90040 Managing Change for IS Professionals	Semester 2	12.5
ISYS90043 Enterprise Applications & Architectures	Semester 1, Semester 2	12.5
ISYS90045 Professional IS Consulting	Semester 1, Semester 2	12.5
ISYS90048 Managing ICT Infrastructure	March, Semester 2	12.5
ISYS90049 Process Analysis Modelling and Design	Semester 1, Semester 2	12.5
ISYS90050 IT Project and Change Management	Summer Term, Semester 1, Semester 2	12.5
ISYS90051 Impact of Digitisation	Semester 1, Semester 2	12.5
ISYS90052 Managing Large Projects	Not offered 2016	12.5
ISYS90055 Managing IT Outsourcing	Semester 2	12.5
ISYS90068 Service Management and Innovation	Semester 1	12.5
ISYS90069 eHealth & Biomedical Informatics Systems	June	12.5
ISYS90070 Information Security Consulting	June	12.5
ISYS90076 IT Infrastructure for eHealth	Semester 1	12.5
ISYS90077 EHealth Applications and Solutions	Semester 1	12.5
ISYS90078 Health Data, Information and Knowledge	Semester 2	12.5
ISYS90085 Interaction Design and Usability	Semester 2	12.5
ISYS90086 Data Warehousing	Semester 1	12.5
ISYS90087 Service Management and Innovation	Semester 1	12.5
SKIL90004 Project Management in Science	Semester 1	12.5
SWEN90004 Modelling Complex Software Systems	Semester 1	12.5

SWEN90006 Software Testing and Reliability	Semester 2	12.5
SWEN90007 Software Design and Architecture	Semester 2	12.5
SWEN90009 Software Requirements Analysis	Semester 1	12.5
SWEN90010 High Integrity Systems Engineering	Semester 1	12.5

Infrastructure Engineering

Subject	Study Period Commencement:	Credit Points:
CVEN90016 Concrete Design and Technology	Semester 2	12.5
CVEN90017 Earthquake Resistant Design of Buildings	Semester 1	12.5
CVEN90018 Structural Dynamics and Modelling	Semester 2	12.5
CVEN90019 Sustainable Water Resources Systems	Semester 2	12.5
CVEN90024 High Rise Structures	Semester 1	12.5
CVEN90026 Extreme Loading of Structures	Semester 1	12.5
CVEN90027 Geotechnical Applications	Not offered 2016	12.5
CVEN90035 Structural Theory and Design 3	Semester 2	12.5
CVEN90043 Sustainable Infrastructure Engineering	Semester 1	12.5
CVEN90044 Engineering Site Characterisation	Semester 1	12.5
CVEN90048 Transport Systems	Semester 2	12.5
CVEN90050 Geotechnical Engineering	Semester 1	12.5
CVEN90061 Freight Systems	Semester 1	12.5
ENEN90005 Environmental Management ISO 14000	Semester 2	12.5
ENEN90006 Solid Wastes to Sustainable Resources	Semester 1	12.5
ENEN90011 Energy Efficiency Technology	Semester 2	12.5
ENEN90014 Sustainable Buildings	September	12.5
ENEN90027 Energy for Sustainable Development	Semester 1	12.5
ENEN90028 Monitoring Environmental Impacts	Semester 2	12.5
ENEN90029 Water and Waste Water Management	Semester 1	12.5
ENEN90030 Groundwater Hydrology	Semester 2	12.5
ENEN90031 Quantitative Environmental Modelling	Semester 1	12.5
ENEN90032 Environmental Analysis Tools	Semester 2	12.5
ENEN90033 Solar Energy	Semester 1	12.5
ENEN90034 Environmental Applied Hydrology	Semester 1	12.5
ENGM90006 Engineering Contracts and Procurement	Semester 2	12.5
ENGM90007 Project Management Practices	Semester 1	12.5
ENGR90026 Engineering Entrepreneurship	Semester 2	12.5

GEOM90005 Remote Sensing	Semester 2	12.5
GEOM90006 Spatial Analysis	Semester 2	12.5
GEOM90007 Spatial Visualisation	Semester 2	12.5
GEOM90008 Foundations of Spatial Information	Semester 1	12.5
GEOM90015 Spatial Data Infrastructure	Semester 2	12.5
GEOM90016 Advanced Topics in GIScience	Semester 1	12.5
GEOM90018 Spatial Databases	Semester 1	12.5
GEOM90033 Satellite Positioning Systems	Semester 2	12.5
GEOM90038 Advanced Imaging	Semester 1	12.5
GEOM90039 Advanced Surveying and Mapping	February	12.5
GEOM90040 Mathematics of Spatial Information	Semester 2	12.5
GEOM90041 Cadastral Surveying	Semester 1	12.5
GEOM90042 Spatial Information Programming	Semester 1	12.5

Mechanical Engineering

Subject	Study Period Commencement:	Credit Points:
BMEN90022 Computational Biomechanics	Semester 2	12.5
BMEN90024 Human Impact & Forensic Biomechanics	Semester 1	12.5
ELEN90064 Advanced Control Systems	Semester 2	12.5
ENGM90015 Management and Leadership for Engineers	Semester 1	12.5
ENGR90019 Adv Topics in Fluid Mechanics	Not offered 2016	12.5
ENGR90020 Adv Topics in Biomechanics	Not offered 2016	12.5
ENGR90024 Computational Fluid Dynamics	Semester 1	12.5
ENGR90026 Engineering Entrepreneurship	Semester 2	12.5
MCEN90017 Advanced Motion Control	Semester 1	12.5
MCEN90018 Advanced Fluid Dynamics	Semester 1	12.5
MCEN90019 Advanced Thermodynamics	Semester 2	12.5
MCEN90020 Advanced Materials	Semester 2	12.5
MCEN90023 Quality and Reliability	Semester 2	12.5
MCEN90027 Simulation Of Mechatronic Systems	Not offered 2016	12.5
MCEN90028 Robotics and Automation Systems	Semester 2	12.5
MCEN90029 Advanced Solid Mechanics	Semester 1	12.5
MCEN90031 Applied High Performance Computing	Semester 2	12.5
MCEN90032 Sensor Systems	Semester 2	12.5

Graduate School of Science
School of Botany

Subject	Study Period Commencement:	Credit Points:
BIOL90001 Microscopy for Biological Sciences	Semester 1	12.5

School of Chemistry

Subject	Study Period Commencement:	Credit Points:
CHEM90009 Chemical Synthesis & Characterisation 1	Semester 1	12.5
CHEM90010 Advanced Chemical Applications 1	July	12.5
CHEM90017 Chemical Synthesis & Characterisation 2	Semester 1	12.5
CHEM90018 Advanced Chemical Applications 2	July	12.5

Department of Mathematics and Statistics

Students are permitted to undertake the Department of Mathematics and Statistics, Masters level Mathematics and Statistics subjects listed below:

Subject	Study Period Commencement:	Credit Points:
MAST90011 Mathematical Biology	Semester 2	12.5
MAST90012 Measure Theory	Not offered 2016	12.5
MAST90013 Network Optimisation	Not offered 2016	12.5
MAST90014 Optimisation for Industry	Semester 1	12.5
MAST90017 Representation Theory	Not offered 2016	12.5
MAST90019 Random Processes	Semester 2	12.5
MAST90020 Functional Analysis	Semester 2	12.5
MAST90023 Algebraic Topology	Semester 1	12.5
MAST90025 Commutative and Multilinear Algebra	Semester 1	12.5
MAST90026 Computational Differential Equations	Semester 1	12.5
MAST90027 The Practice of Statistics	Semester 2	12.5
MAST90029 Differential Topology and Geometry	Not offered 2016	12.5
MAST90030 Advanced Discrete Mathematics	Semester 2	12.5
MAST90031 Enumerative Combinatorics	Not offered 2016	12.5
MAST90045 Systems Modelling and Simulation	Semester 1	12.5
MAST90050 Scheduling and Optimisation	Not offered 2016	12.5
MAST90051 Mathematics of Risk	Semester 2	12.5
MAST90053 Experimental Mathematics	Semester 1	12.5
MAST90056 Riemann Surfaces and Complex Analysis	Not offered 2016	12.5
MAST90057 Elements of Probability	Semester 1	12.5
MAST90058 Elements of Statistics	Semester 2	12.5
MAST90059 Stochastic Calculus with Applications	Not offered 2016	12.5

MAST90060 Mathematical Statistical Mechanics	Not offered 2016	12.5
MAST90064 Advanced Methods: Differential Equations	Not offered 2016	12.5
MAST90065 Exactly Solvable Models	Not offered 2016	12.5
MAST90067 Advanced Methods: Transforms	Semester 1	12.5
MAST90068 Groups, Categories & Homological Algebra	Semester 2	12.5
MAST90069 Introduction to String Theory	Semester 2	12.5
MAST90080 Advanced Modelling: Case Studies	Not offered 2016	12.5
MAST90081 Advanced Probability	Semester 1	12.5
MAST90082 Mathematical Statistics	Semester 1	12.5
MAST90083 Computational Statistics and Data Mining	Not offered 2016	12.5
MAST90084 Statistical Modelling	Semester 1	12.5
MAST90085 Multivariate Statistical Techniques	Not offered 2016	12.5

School of Physics

Subject	Study Period Commencement:	Credit Points:
PHYC90006 Quantum and Advanced Optics	Semester 2	12.5
PHYC90007 Quantum Mechanics	Semester 1	12.5

Electrical and Electronic Engineering

Electrical and Electronic Engineering students may select subjects from the list below:
Subjects Available

Subject	Study Period Commencement:	Credit Points:
BMEN90004 Advanced Neural Information Processing	Semester 1	12.5
ELEN90017 Topics in Instrumentation	Not offered 2016	12.5
ELEN90018 Adv Topics in Engineering Mathematics	Semester 1	12.5
ELEN90022 Quantum Opto-electronics	Not offered 2016	12.5
ELEN90023 Lightwave Devices and Systems	Not offered 2016	12.5
ELEN90024 Wireless Systems	Not offered 2016	12.5
ELEN90025 Communication Network Standards/Protocol	Not offered 2016	12.5
ELEN90026 Introduction to Optimisation	Semester 2	12.5
ELEN90027 Linear Systems Theory	Semester 1	12.5
ELEN90028 Nonlinear Systems Theory	Not offered 2016	12.5
ELEN90030 Information Theory	Not offered 2016	12.5
ELEN90031 Advanced Topics in Communications	Not offered 2016	12.5
ELEN90032 Advanced Topics in Signals and Systems	Not offered 2016	12.5
ELEN90033 Advanced Topics in Photonics	Not offered 2016	12.5

ELEN90071 Auditory and Visual Processing	Not offered 2016	12.5
ELEN90072 Energy Efficient Networking	Not offered 2016	12.5
ELEN90073 Advanced Topics in Control	Not offered 2016	12.5
ELEN90076 Digital Image Processing	Not offered 2016	12.5
ELEN90077 Grid Integration of Renewables	Semester 2	12.5
ELEN90079 Statistical Signal Processing	Semester 2	

Graduate/Postgraduate subjects NOT listed below may be selected in consultation with the student's supervisor and require the endorsement of the subject coordinator and Head of Department or their nominee.

Entry Requirements:

1. In order to be considered for entry, applicants must have completed:

- A four-year bachelor degree in a relevant discipline which includes a substantial research component equivalent to at least 25% of one year of full-time study, and have achieved a minimum weighted average of 75% in the final year subjects or (University of Melbourne) equivalent
- or
- A masters degree in a relevant discipline which includes a substantial research component equivalent to at least 25% of one year of full-time study, and achieved a minimum weighted average of 75% or (University of Melbourne) equivalent
- or
- A qualification and professional experience considered to be equivalent
- and
- A research proposal
- Referee reports (except for applicants who have graduated from the University of Melbourne within the last 5 years)
- The endorsement of a prospective supervisor.

Meeting these requirements does not guarantee selection.

2. In selecting applicants, the selection committee will consider applicants':

- Prior academic performance and, if relevant, professional qualifications
- Understanding of the research question to be explored
- Performance at an interview
- Motivation and capacity to complete the course in a timely manner
- Relevant prior research and/or professional experience
- Referee reports.

3. The Selection Committee may seek further information to clarify any aspect of an application in accordance with the Academic Board rules (<http://about.unimelb.edu.au/academicboard/resolutions>) on the use of selection instruments.

4. The minimum English language requirements for this course are: Band 6.5.

<http://futurestudents.unimelb.edu.au/admissions/entry-requirements/language-requirements> (<http://futurestudents.unimelb.edu.au/admissions/entry-requirements/language-requirements>)

For more information on the application process visit: <http://www.eng.unimelb.edu.au/study/degrees> (<http://www.eng.unimelb.edu.au/study/degrees>)

Core Participation Requirements:

All PhD candidates are required to complete the equivalent of at least 12 months full-time (24 months part-time) advanced study and research in the University unless studying at an outside institution approved by the Research Higher Degrees Committee (RHDC). The RHDC will not approve entirely distance supervision or entirely on-line supervision for graduate researchers. Throughout their candidature candidates are expected to attend the University in order to benefit from planning, conducting and writing-up their research within a University community and environment. The residency requirement is deemed especially important during the period of probationary candidature. During probationary candidature the student is expected to interact on a regular basis with the supervisor, the department (including staff and other research students) and the University, with the aim to: Build the skills and knowledge necessary to carry out the proposed research program Acquire an understanding of the standards and requirements for a PhD awarded by the University Make use of support programs and facilities provided by the University For the purposes of considering requests for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support

	and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry. It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability will impact on meeting the requirements of this course are encouraged to discuss this matter with a Faculty Graduate Research Adviser and Student Equity and Support.
Graduate Attributes:	<p>Doctoral degrees at the University of Melbourne seek to develop graduates who demonstrate academic leadership, increasing independence, creativity and innovation in their research work. The University expects its doctoral graduates to have the following qualities and skills: an advanced ability to initiate research and to formulate viable research questions; a demonstrated capacity to design, conduct and report sustained and original research; the capacity to contextualise research within an international corpus of specialist knowledge; an advanced ability to evaluate and synthesize research-based and scholarly literature; an advanced understanding of key disciplinary and multi-disciplinary norms and perspectives relevant to the field; highly developed problem-solving abilities and flexibility of approach; the ability to analyse critically within and across a changing disciplinary environment; the capacity to disseminate the results of research and scholarship by oral and written communication to a variety of audiences; a capacity to cooperate with and respect the contributions of fellow researchers and scholars; a profound respect for truth and intellectual integrity, and for the ethics of research and scholarship; an advanced facility in the management of information, including the application of computer systems and software where appropriate to the student's field of study; an understanding of the relevance and value of their research to national and international communities of scholars and collaborators; an awareness where appropriate of issues related to intellectual property management and the commercialisation of innovation; and an ability to formulate applications to relevant agencies, such as funding bodies and ethics committees. The University provides a variety of opportunities in addition to the supervised research program to facilitate a students' acquisition of these attributes.</p>
Links to further information:	http://www.gradresearch.unimelb.edu.au
Notes:	<p>Application Procedure Detailed information for prospective PhD students regarding the application process, including the application form is available at: http://futurestudents.unimelb.edu.au/admissions/applications/research (http://futurestudents.unimelb.edu.au/admissions/applications/research) .</p> <p>PhD applicants should discuss their research interests with a potential supervisor at the department in which they would like to enrol prior to submitting an application. The Find an Expert (http://www.findanexpert.unimelb.edu.au/) website may assist your search for an appropriate supervisor.</p> <p>Prospective PhD candidates should also investigate department websites for information on current research and contact details. Department websites are easily accessed from the faculty homepages (http://about.unimelb.edu.au/governance-and-leadership/faculties) .</p> <p>Applications are accepted year-round.</p> <p>Which scholarship can I apply for? Students can find information about graduate research scholarships offered by the University of Melbourne at the Melbourne Scholarships Office (http://services.unimelb.edu.au/scholarships/research) .</p> <p>Facilities and Support: The University of Melbourne makes available a broad range of Programs & Services (http://services.unimelb.edu.au/finder) available to graduate research students.</p>