

445EG Bachelor of Geomatic Engineering

Year and Campus:	2010 - Parkville
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Level:	Undergraduate
Duration & Credit Points:	400 credit points taken over 48 months full time. This course is available as full or part time.
Coordinator:	Allison Kealy
Contact:	<p>Melbourne School of Engineering Office Building 173, Grattan Street The University of Melbourne VIC 3010 Australia General telephone enquiries: + 61 3 8344 6703 + 61 3 8344 6507 Facsimiles: + 61 3 9349 2182 + 61 3 8344 7707 Email: eng-info@unimelb.edu.au (mailto:Melbourne School of Engineering Office)</p>
Course Overview:	<p>Geomatics is three-dimensional measurement, mapping and visualisation and is one of the fastest growing industry sectors in the world. Land surveying and spatial information science are disciplines covered in Geomatics and it is therefore ideally suited to students who have an interest in the management of the environment, information technology, computing and computer graphics, mathematics or working outdoors. Pathways to a professional degree in Geomatics (Land Surveying/Spatial Information Science) are through the Bachelor of Environments (BEnv) or the Bachelor of Science (BSc).</p> <p>A major attraction of geomatics is the diverse range of career options available. The rapid growth of geomatics across society has resulted in graduates obtaining an exceptionally high level of industry employment worldwide. Students routinely find employment in land development and management; natural resource and environmental management; computer-based mapping and modelling; hydrographic, land and engineering surveying; and applied computing and geographical information systems (GIS). Other exciting new areas of employment for graduates are web mapping specialists, GIS consultants, business development managers and with engineering mapping and multimedia companies.</p> <p>Across the three year undergraduate Geomatics major, students gain an understanding of mathematics and statistics as well as a sound introduction to a broad range of geomatics subjects including application of GIS, spatial imaging and integrated spatial systems. The three year degree also includes a one-week residential field course which integrates theoretical material with practical geomatics concepts.</p> <p>Students who have completed a three year BEnv or BSc with a major in Geomatics can continue on to the professional Masters of Engineering (Geomatics). Students then undertake studies in advanced measurement sciences, remote sensing, spatial analysis, photogrammetry, land administration, cadastral surveying, land law, professional development and and a comprehensive research project.</p> <p>The whole five year program for Geomatics is accredited by Engineers Australia and accreditation is pending for the Royal Institute of Chartered Surveyors (RICS) and the Surveyors Registration Board, Victoria.</p>
Objectives:	<p>On completion of this course graduates should:</p> <ul style="list-style-type: none"> # Have a sound fundamental understanding of the scientific principles underlying technology; # Possess a broad knowledge base of their chosen discipline and of other disciplines to facilitate effective communication with those other professionals with whom engineers routinely communicate; # Be able to apply the basic principles underlying the management of physical, human and financial resources; # Have acquired the mathematical and computational skills necessary for the solution of theoretical and practical problems; # Possess analytical, problem-solving and design skills, including those appropriate for sustainable development;

	<ul style="list-style-type: none"> # Have verbal and written communication skills that enable them to contribute substantially to society; # Have acquired lifelong learning skills for further development professionally and for meeting future changes in technology; # Have acquired a sense of professional ethics and responsibility towards the profession and the community; # Have developed the interpersonal and management skills required by engineers in undertaking professional activities; and # Be able to enact the social, cultural, global and environmental responsibilities of the professional engineer, and the need for sustainable development. 																																										
Course Structure & Available Subjects:	<p>The recommended or standard course structures are listed below. When setting the timetable every effort will be made to avoid clashes between the times of classes associated with these sets of subjects. Students should be aware however, that if it proves to be impossible to achieve a timetable without clashes in these sets of subjects, the School reserves the right to modify course structures in order to eliminate the conflicts. Students will be advised during the enrolment period of the semester if the recommended courses need to be varied. Where the courses include elective subjects these should be chosen so that timetable clashes are avoided. In particular, students in combined degrees should plan their courses so that the subjects chosen in the other faculty do not clash with those recommended for the engineering component.</p>																																										
Subject Options:	<p>THERE WILL BE NO FIRST YEAR ENTRY INTO THIS COURSE FROM 2008.</p> <p>Third Year</p> <p>Subjects listed below MUST be taken in this approved order, regardless of semester availability.</p> <p>Semester 1</p> <table border="1" data-bbox="391 929 1484 1272"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>MGMT10002 Managing and Leading Organisations</td> <td>Summer Term, Semester 1, Semester 2</td> <td>12.50</td> </tr> <tr> <td>451-331 Spatial Analysis</td> <td>Not offered 2010</td> <td></td> </tr> <tr> <td>451-332 Imaging in the Geosciences</td> <td>Not offered 2010</td> <td></td> </tr> <tr> <td>GEOM30004 Cadastral Surveying & Land Development</td> <td>Semester 1</td> <td>12.50</td> </tr> </tbody> </table> <p>Semester 2</p> <table border="1" data-bbox="391 1305 1484 1624"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>451-340 Integrated Spatial Systems 1</td> <td>Not offered 2010</td> <td></td> </tr> <tr> <td>451-341 Applications of GIS and Remote Sensing</td> <td>Not offered 2010</td> <td></td> </tr> <tr> <td>GEOM30005 Satellite Positioning and Geodesy</td> <td>Semester 2</td> <td>12.50</td> </tr> <tr> <td>GEOM40004 Photogrammetry</td> <td>Semester 2</td> <td>12.50</td> </tr> </tbody> </table> <p>Fourth Year</p> <p>Subjects listed below MUST be taken in this approved order, regardless of semester availability.</p> <p>Year Long</p> <table border="1" data-bbox="391 1747 1484 1892"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>GEOM40006 Research Project</td> <td>Year Long</td> <td>25</td> </tr> </tbody> </table> <p>Semester 1</p> <table border="1" data-bbox="391 1921 1484 2060"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>GEOM40001 Land Administration</td> <td>Semester 1</td> <td>12.50</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	MGMT10002 Managing and Leading Organisations	Summer Term, Semester 1, Semester 2	12.50	451-331 Spatial Analysis	Not offered 2010		451-332 Imaging in the Geosciences	Not offered 2010		GEOM30004 Cadastral Surveying & Land Development	Semester 1	12.50	Subject	Study Period Commencement:	Credit Points:	451-340 Integrated Spatial Systems 1	Not offered 2010		451-341 Applications of GIS and Remote Sensing	Not offered 2010		GEOM30005 Satellite Positioning and Geodesy	Semester 2	12.50	GEOM40004 Photogrammetry	Semester 2	12.50	Subject	Study Period Commencement:	Credit Points:	GEOM40006 Research Project	Year Long	25	Subject	Study Period Commencement:	Credit Points:	GEOM40001 Land Administration	Semester 1	12.50
Subject	Study Period Commencement:	Credit Points:																																									
MGMT10002 Managing and Leading Organisations	Summer Term, Semester 1, Semester 2	12.50																																									
451-331 Spatial Analysis	Not offered 2010																																										
451-332 Imaging in the Geosciences	Not offered 2010																																										
GEOM30004 Cadastral Surveying & Land Development	Semester 1	12.50																																									
Subject	Study Period Commencement:	Credit Points:																																									
451-340 Integrated Spatial Systems 1	Not offered 2010																																										
451-341 Applications of GIS and Remote Sensing	Not offered 2010																																										
GEOM30005 Satellite Positioning and Geodesy	Semester 2	12.50																																									
GEOM40004 Photogrammetry	Semester 2	12.50																																									
Subject	Study Period Commencement:	Credit Points:																																									
GEOM40006 Research Project	Year Long	25																																									
Subject	Study Period Commencement:	Credit Points:																																									
GEOM40001 Land Administration	Semester 1	12.50																																									

	GEOM40005 Professional and Business Studies	Semester 1	12.50
	GEOM40007 Integrated Spatial Systems 2	Semester 1	12.50
	Semester 2		
	Subject	Study Period Commencement:	Credit Points:
	GEOM40002 Residential Land Development	Semester 2	12.50
	121-028 Sustainable Development (/view/2008/121-028) or Elective (12.5 points) Elective (12.5 points) - <i>An approved environmental elective</i>		
Entry Requirements:	N/A - as there is no entry into the program from 2008.		
Core Participation Requirements:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 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:	None		
Graduate Attributes:	An Engineering graduate has a unique skill set comprising a blend of technical, business and interpersonal skills. Upon completion of the Bachelor of Engineering at the University of Melbourne, students will have strong analytical skills, the ability to lead teams and projects and the creativity to look at problems in a way that provides innovative solutions. Our graduates are known for their high standards and professionalism, their understanding of global issues and their outstanding communication skills. For details, see "Objectives".		
Professional Accreditation:	Royal Institute of Chartered Surveyors		
Generic Skills:	For details, see "Objectives".		
Links to further information:	None		
Notes:	None		