

## Bachelor of Engineering (Geomatic Eng.) Program Structure

The first three years of this new program will be taught in 2000. The entire new program will be implemented by 2001.

Session 1			Session 2		
Year 1			Year 1		
Credit units (HPW)			Credit units		
(HPW)					
GMAT1100	Principles of Surveying	6(5)	GMAT1400	Land Studies in Geomatics	6(5)
GMAT1300	Computing Applies in Geomatics	6(4)	GMAT1200	Visualisation of Spatial Data	6(4)
MATH1131	Mathematics 1A or Higher	6(6)	MATH1231	Mathematics 1B or Higher	6(6)
PHYS1189	Physics I (GE)	6(6)	GMAT1150	Survey Methods and Comps	6(5)
<b>Year 2</b>					
GMAT2700	Geometry of Coord. Ref. Systems	6(5)	GMAT2200	Geog. Info. Systems & CAD	6(5)
GMAT2100	Electronic Surveying Instrumentation	6(5)	GMAT2300	Analysis of Observations	3(3)
GMAT2350	Computing for Spatial Info. Sc	3(3)	GMAT2110	Electronic & GPS Position. Technol.	6(5)
MATH2829	Statistics SU	3(3)	MATH2019	Engineering Mathematics 2CE	6(5)
PHYS2969	Physics of Measurements	3(3)		General Education	3(2)
	General Education	3(2)			

Structure for years 3 and 4 of the program depends on the electives chosen by students. Two examples are given below.

### Cadastral/Land Development Stream

#### Year 3

GMAT3200	Geospatial Information Tech & App	6	GMAT3500	Photogrammetry & Remote Sensing	6
GMAT3400	Cadastral Surveying 1	3	GMAT3410	Land Economics and Valuation	3
CVEN0646	Water and Wastewater Engineering	3	CVEN0656	Soil and Pavement Engineering	3
GMAT3100	Surveying Applications	6	GMAT3150	Field Projects	6
PLAN1093	Planning Perspectives	3	GMAT3450	Cadastral Surveying 2	3
	General Education	3		General Education	3

#### Year 4

GMAT4700	Project Management 1	3	GMAT4750	Project Management 2	3
GMAT4000	Thesis Part A	3	GMAT4001	Thesis Part B	9
GMAT4850	Geomatic Eng for Sustainability	3	GMAT4020	Project in Geomatic Engineering	6
GMAT4400	Land Management & Devel. Project 1	3	GMAT4450	Land Management & Devel. Project 2	3
GMAT4410	Land Subdivision & Development	3		Elective	3
GMAT4900	Principles of GNSS Positioning	6			
	Elective	3			

### GIS/GPS Stream

#### Year 3

GMAT3200	Geospatial Information Tech & App	6	GMAT3500	Photogrammetry & Remote Sens.	6
GMAT3400	Cadastral Surveying 1	3	GMAT3410	Land Economics and Valuation	3
	Comp Sci & Eng Electives	12		Comp Sci & Eng Electives	12
	General Education	3		General Education	3

#### Year 4

GMAT4700	Project Management 1	3	GMAT4750	Project Management 2	3
GMAT4000	Thesis Part A	3	GMAT4001	Thesis Part B	9
GMAT4900	Principles of GNSS Positioning	6	GMAT4910	Modern Navigation & Positioning	6
	Comp Sci & Eng Electives	6		Comp Sci & Eng Electives	6
GMAT4850	Geomatic Eng for Sustainability	3			
	Elective	3			

Other electives and arrangements of electives are possible with the approval of the Head of School

# Bachelor of Engineering (Geomatic Eng.), Bachelor of Arts

Session 1			Session 2		
<b>Year 1</b>					
		Credit units (HPW)			Credit units (HPW)
GMAT1100	Principles of Surveying	6 (5)	GMAT1400	Land Studies in Geomatics	6 (5)
GMAT1300	Computing Applies in Geomatics	6 (4)	GMAT1200	Visualisation of Spatial Data	6 (4)
MATH1131	Mathematics 1A or Higher	6 (6)	MATH1231	Mathematics 1B or Higher	6 (6)
PHYS1189	Physics I (GE)	6 (6)	GMAT1150	Survey Methods and Comps	6 (5)
<b>Year 2</b>					
GMAT2700	Geometry of Coord. Ref. Systems	6 (5)	GMAT2200	Geog. Info. Systems & CAD	6 (5)
GMAT2100	Electronic Surveying Instrumentation	6 (5)	GMAT2110	Electronic & GPS Position. Technol.	6 (5)
MATH2829	Statistics SU	3 (3)	MATH2019	Engineering Mathematics 2CE	6 (5)
PHYS2969	Physics of Measurements	3 (3)		BA first level elective	6
	BA first level elective	6			
<b>Year 3</b>					
GMAT2350	Computing for Spatial Info. Sc	3	GMAT2300	Analysis of Observations	3
GMAT3200	Geospatial Information Tech & App	6	GMAT3500	Photogrammetry & Remote Sensing	6
GMAT3400	Cadastral Surveying 1	3	GMAT3410	Land Economics and Valuation	3
	BA electives	6		BA electives	6
	Year 3 electives	6		Year 3 electives	6
<b>Year 3 electives</b>					
GMAT3100	Surveying Applications	6	GMAT3150	Field Projects	6
PLAN1093	Planning Perspectives	3	GMAT3450	Cadastral Surveying 2	3
CVEN0646	Water and Wastewater Engineering	3	CVEN0656	Soil and Pavement Engineering	3
<b>Other electives are possible with the approval of the Head of School</b>					
<b>Year 4</b>					
GMAT4700	Project Management 1	3	GMAT4750	Project Management 2	3
GMAT4000	Thesis Part A	3	GMAT4001	Thesis Part B	9
GMAT4850	Geomatic Eng for Sustainability	3		BA electives	6
	BA electives	6		Year 4 electives	6
	Year 4 electives	9			
<b>Year 4 electives</b>					
	Any remaining year 3 elective			Any remaining year 3 elective	
GMAT4900	Principles of GNSS Positioning	6	GMAT4910	Modern Navigation & Positioning	6
GMAT4400	Land Management & Devel. Project 1	3	GMAT4450	Land Management & Devel. Project 2	3
GMAT4410	Land Subdivision & Development	3	GMAT4020	Project in Geomatic Engineering	6
GMAT9121	Network and Deformation Analysis	6	GMAT9211	Introduction to Geodesy	6
GMAT0580	Mining Surveying	3	PLAN1022	The Development Process	3
<b>Other electives are possible with the approval of the Head of School</b>					
<b>Year 5</b>					
	BA electives	12		BA electives	12
	GMAT electives	12		GMAT electives	12

## Bachelor of Engineering (Geomatic Eng.), Bachelor of Science (Computer Sc.)

Session 1			Session 2		
Year 1		Credit units (HPW)			Credit units (HPW)
GMAT1100	Principles of Surveying	6 (5)	COMP1021	Computing 1B	6 (6)
COMP1011	Computing 1A	6 (6)	GMAT1150	Survey Methods and Comps	6 (5)
MATH1131	Mathematics 1A or Higher	6 (6)	MATH1231	Mathematics 1B or Higher	6 (6)
PHYS1189	Physics I (GE)	6 (6)	GMAT	Year 1 GMAT elective	6 (4-5)

Year 1 elective is either GMAT1400 Land Studies in Geomatics 6 (5), or GMAT1200 Visualisation of Spatial Data 6 (4)

### Year 2

GMAT2700	Geometry of Coord. Ref. Systems	6 (5)	GMAT2200	Geog. Info. Systems & CAD	6 (5)
GMAT2100	Electronic Surveying Instrumentation	6 (5)	GMAT2300	Analysis of Observations	3 (3)
MATH2829	Statistics SU	3 (3)	GMAT2110	Electronic & GPS Position. Technol.	6 (5)
MATH1081	Discrete Mathematics	6 (6)	COMP2011	Data Organisation	6 (5)
PHYS2969	Physics of Measurements	3 (3)		Year 2 free elective	3 (2)

### Year 3

GMAT3200	Geospatial Information Tech & App	6	GMAT3500	Photogrammetry & Remote Sensing	6
GMAT3400	Cadastral Surveying 1	3	GMAT3410	Land Economics and Valuation	3
COMP2	A level 2 computing elective	6	COMP2	A level 2 computing elective	6
	Year 3 electives	9	GMAT3450	Cadastral Surveying 2	3
				Year 3 electives	6

Year 3 electives chosen from:

CVEN0646	Water and Wastewater Engineering	3	CVEN0656	Soil and Pavement Engineering	3
GMAT3100	Surveying Applications	6	GMAT3150	Field Projects	6
PLAN1093	Planning Perspectives	3		General Education	3
	General Education	3			

### Year 4

GMAT4700	Project Management 1	3	GMAT4750	Project Management 2	3
COMP3	A level 3 computing elective	6	COMP3	A level 3 computing elective	6
GMAT4850	Geomatic Eng for Sustainability	3			
GMAT	Year 4 GMAT Electives	12	GMAT	Year 4 GMAT Electives	15

Year 4 GMAT electives chosen from:

GMAT4410	Land Subdivision & Development	3	GMAT4020	Project in Geomatic Engineering	6
GMAT4400	Land Management & Devel. Project 1	3	GMAT4450	Land Management & Devel. Project 2	3
GMAT4900	Principles of GNSS Positioning	6	GMAT4910	Modern Navigation and Pos. Tech.	6
GMAT9121	Network and Deformation Analysis	6	GMAT9211	Introduction to Geodesy	6

### Year 5

GMAT4000	Thesis Part A	3	GMAT4001	Thesis Part B	9
COMP3	2 level 3 Comp Sci & Eng Electives	12	COMP3	A level 3 Comp Sci & Eng Elective	6
	Year 5 Electives	9		Year 5 Electives	9

Year 5 electives may be chosen from any of the remaining GMAT year 4 electives or COMP level 3 or 4 courses.

**Other electives or arrangements of electives are possible with the approval of the Head of School**

The School of Geomatic Engineering is the program authority. Students may choose to do 3 units of General Education in year 2 and another 3 units in year 3. It is possible to revert to the single BE (Geom. Eng.) degree, progress and conversion will be determined on an individual student basis by the program authority.

### COMP elective courses:

COMP2021	Digital System Structures	COMP3231	Operating Systems
COMP2041	Software Construction: Techniques and Tools	COMP3241	Real-Time Sys: Spec, Design & Implementation
COMP2411	Logic and Logic Programming	COMP3311	Database Systems
COMP3111	Software Engineering	COMP3331	Computer Networks and Applications
COMP3121	Algorithms and Programming Techniques	COMP3411	Artificial Intelligence
COMP3131	Parsing and Translation	COMP3421	Computer Graphics
COMP3211	Computer Organisation and Design	COMP3511	Human Computer Interaction
COMP3221	Microprocessors and Interfacing		