

# Graduate Diploma of Engineering Science (GDNS) - Grad Dip Eng Sci

CRICOS code (International applicants): 067688J

	On-campus	Distance education
<b>Semester intake:</b>	Semester 1 (February) Semester 2 (July)	Semester 1 (February) Semester 2 (July)
<b>Campus:</b>	Toowoomba	-
<b>Fees:</b>	Commonwealth supported place Domestic full fee paying place International full fee paying place	Commonwealth supported place Domestic full fee paying place International full fee paying place
<b>Standard duration:</b>	1 years full-time or 2 years part-time or by distance education	
<b>Program articulation:</b>	From: <a href="#">Graduate Certificate in Engineering Science</a> , To: <a href="#">Master of Engineering Science</a>	

## Contact us

Future Australian and New Zealand students	Future International students	Current students
<a href="#">Ask a question</a> Freecall (within Australia): 1800 269 500 Phone (from outside Australia): +61 7 4631 5315 Email: <a href="mailto:studyeng@usq.edu.au">studyeng@usq.edu.au</a>	<a href="#">Ask a question</a> Phone: +61 7 4631 5543 Email: <a href="mailto:international@usq.edu.au">international@usq.edu.au</a>	<a href="#">Ask a question</a> Freecall (within Australia): 1800 007 252 Phone (from outside Australia): +61 7 4631 2285 Email <a href="mailto:usq.support@usq.edu.au">usq.support@usq.edu.au</a>

## Program focus

The [Graduate Diploma of Engineering Science](#) is tailored to provide an exit point from the [Master of Engineering Science](#) program that will enable domestic students to achieve different career goals without having to complete the entire Masters program. The program, through a specialised suite of technical courses in nine different majors, will equip graduates with academic, personal, professional, and technical knowledge of Engineering and Spatial Science that will allow them to support practising professionals.

## Professional accreditation

The [Graduate Diploma of Engineering Science](#) is not accredited by any professional bodies other than the University of Southern Queensland.

## Program aims

The primary aims of the [Graduate Diploma of Engineering Science](#) are:

- to enable students, who hold appropriate three year engineering qualifications or equivalent in the relevant specialisation (major field), to complete a postgraduate program that will lead to an advanced level of knowledge in an engineering discipline; and

## Program objectives

Students who successfully complete the [Graduate Diploma of Engineering Science](#) will be able to demonstrate their ability to:

- to enable students to acquire, and demonstrate that they possess, the specified graduate attributes and capabilities.
- to enable students to acquire in-depth technical competence in one of the following fields:
  - Agricultural Engineering
  - Civil Engineering
  - Electrical and Electronic Engineering
  - Environmental Engineering
  - Geographical Information Systems
  - Mechanical Engineering
  - Power Engineering
  - Structural Engineering
  - Surveying
- to enable students from diverse and non-traditional backgrounds and locations to enrol in the program and to provide them with opportunities to acquire the skills necessary to complete the program in the normal time.
- to enable students to be empowered as learners through the provision of a wide range of teaching and learning styles and modes in their program.
- to ensure that all students, regardless of the mode of study, have equality of opportunity in acquiring the specified graduate attributes and capabilities.

## Admission requirements

To be eligible for admission to the program, candidates must possess one of the following requirements:

- an appropriate three year engineering degree in the relevant (cognate) specialisation (major field) awarded by an Australian university, or an equivalent qualification awarded by an Australian or overseas institution.
- an appropriate three or four year engineering degree in non-cognate specialisation (major field) awarded by an Australian university, or an equivalent qualification awarded by an Australian or overseas institution.\*

\* Entrants may need to undertake courses in addition to the recommended structure, which will involve study longer than the normal duration.

International candidates for admission into this program must meet the University's English language proficiency requirements for postgraduate students. Please refer to Section 2.2.3 of the [Admissions Policy](#) .

The standing of degrees awarded by an overseas institution will be determined by reference to the Sydney Accord, and Washington Accord, of which Engineers Australia (EA) is a signatory, and Australia Education International (AEI) which is a federal government agency.

## How to apply

### Domestic students

[Application for postgraduate programs](#) may be made directly to USQ.

### International students

This program is offered to international students. An international student is a person who is not an Australian or New Zealand citizen and not an Australian permanent resident. Please refer to [USQ International](#) for information about entry requirements, visa arrangements and how to apply.

## Program fees

### Commonwealth supported place

A Commonwealth supported place is where the Australian Government makes a contribution towards the cost of your higher education and you as a student pay a [student contribution amount](#), which varies depending on the courses undertaken. You are able to calculate the fees for a particular course via the [Course Fee Finder](#). Commonwealth Supported students may be eligible to defer their fees through a Government loan called [HECS-HELP](#).

### **Domestic full fee paying place**

Domestic full fee paying places are funded entirely through the full fees paid by the student. Full fees vary depending on the courses that are taken. You are able to calculate the fees for a particular course via the [Course Fee Finder](#).

Permanent Humanitarian Visa holders, Permanent Resident visa holders and New Zealand citizens who reside outside Australia pay full tuition fees.

Domestic full fee paying students may be eligible to defer their fees through a Government loan called [FEE-HELP](#).

### **International full fee paying place**

International students pay full fees. Full fees vary depending on the courses that are taken and whether they are studied on-campus, via distance education/online. You are able to calculate the fees for a particular course via the [Course Fee Finder](#).

## **Program structure**

The [Graduate Diploma of Engineering Science](#) comprises eight single unit academic courses and two practice courses as follows:

**Schedule A:** Three core courses (Three units)

- [ENG5001 Professional Skills in Engineering](#)
- [MAT2500 Engineering Mathematics 3](#)
- [ENG3103 Engineering Problem Solving Computations](#)

**Schedule B:** Five Major Courses (Five units)

**Schedule C:** Two Practice Courses (Zero unit)

## **Required time limits**

Full-time students have a maximum of two years to complete this program. Part-time students have a maximum of four years to complete this program.

A pro-rata adjustment of the maximum time period will apply for those students who transfer from one mode of study to another. A pro-rata reduction in the maximum time period will apply to students who are admitted to a program with advanced standing.

## **Major studies objectives**

The major study provides students with knowledge and skills in a specific discipline. The nine major study areas in the [Graduate Diploma of Engineering Science](#) are:

Agricultural Engineering  
Civil Engineering  
Electrical and Electronic Engineering  
Environmental Engineering  
Geographical Information Systems  
Mechanical Engineering  
Power Engineering  
Structural Engineering  
Surveying

## **IT requirements**

Students should refer to the section entitled Access to Information Technology Facilities in the General Faculty and Program Information section of this Handbook.

## Residential schools

The major practical work requirements associated with each of the Faculty's programs are contained within a series of Practice Courses. These courses are designed to enhance learning, communication and practical skills through laboratory sessions, workshops, seminars, field trips and group activities.

Practice Courses may be undertaken in either on-campus or external mode. Students enrolling externally will be required to attend a compulsory residential school. However, students who enrol in Practice Courses in on-campus mode may be required to undertake a series of weekly activities and/or attend a compulsory residential school. The only final grades available in these courses are Pass (P) or Fail (F).

Practice Courses are zero unit courses that are a compulsory part of the program. However, they do not attract a student contribution charge for Australian residents or a tuition fee for international students. External students should ensure that they are able to attend the residential school prior to enrolling in a Practice Course.

## Articulation

The [Graduate Certificate in Engineering Science](#), the [Graduate Diploma of Engineering Science](#), and the [Master of Engineering Science](#) are a nested suite of programs. Students who have completed the [Graduate Diploma of Engineering Science](#) are able to apply to articulate with full credit to the [Master of Engineering Science](#).

## Exit points

Students who have completed four courses in the program may satisfy the requirements for the [Graduate Certificate in Engineering Science](#) and therefore may apply to exit the program with a [Graduate Certificate in Engineering Science](#).

Students who are unable to satisfactorily complete the program may apply to transfer to the [Bachelor of Engineering](#) or the [Bachelor of Spatial Science](#) as appropriate. They may also apply to have the courses completed in the [Graduate Diploma of Engineering Science](#) credited to their new program.

## Enrolment

Students should note that some of the courses specify enrolment requirements (prerequisites). Students should therefore refer to the Course Specification section of the USQ Web to determine the enrolment requirements for the courses they intend enrolling in. Students should avoid enrolling in courses for which they do not have sufficient pre-requisite knowledge. Students will be expected to rectify any deficiencies in their pre-requisite knowledge by private study, guided if necessary by the examiners of the relevant courses. Students should contact Faculty Administration if they encounter problems while enrolling in courses with requisites.

## Agricultural Engineering Major recommended enrolment pattern

Major study: Agricultural Engineering (Major Study Code: 16206)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)		
	Year	Sem	Year	Sem	Year	Sem	
<b>Schedule A: Core Courses</b> Students must complete all three courses listed in this schedule.							
<a href="#">ENG5001 Professional Skills in Engineering</a>	1	1,2	1	1,2			
<a href="#">MAT2500 Engineering Mathematics 3</a>	1	2	1	2		Pre-requisite: <a href="#">MAT1102</a> or <a href="#">MAT1502</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MENS	
<a href="#">ENG3103 Engineering Problem Solving Computations</a>	1	2	2	2		Pre-requisite: ( <a href="#">ENG2102</a> and <a href="#">MAT1502</a> ) or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS	

Major study: Agricultural Engineering (Major Study Code: 16206)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)		
	Year	Sem	Year	Sem	Year	Sem	
<b>Schedule B: Major Courses</b> Students must complete five of the courses listed in this schedule.							
<a href="#">ENG4104 Engineering Problem Solving Simulations</a>	2	2	3	2			Pre-requisite: <a href="#">ENG3103</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">ENG8001 Engineering and Surveying Research Methodology</a>	1	1,2					
<a href="#">ENV3104 Hydraulics II</a>	1	1	1	1			Pre-requisite: ENV1101 or <a href="#">ENV2103</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">AGR3305 Precision and Smart Technologies in Agriculture</a>	1	1	2	1			
<a href="#">ENV5205 Solid and Liquid Waste Treatment</a>	2	1		1			Pre-requisite: <a href="#">ENV4203</a> or <a href="#">ENV4204</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">AGR4305 Agricultural Soil Mechanics</a>	2	1	4				
<a href="#">AGR3303 Agricultural Materials and Post-Harvest Technologies</a>	2	1	3	1			
<a href="#">ENV4106 Irrigation Science</a>	2	2	3	2			Pre-requisite: <a href="#">AGR3304</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<b>Schedule C: Practice Courses</b> Students must complete all of the courses listed in this schedule.							
<a href="#">AGR3903 Soil and Water Engineering Practice 2<sup>^</sup></a>	1		1,2	2			
<a href="#">AGR3905 Agricultural Engineering Practice</a>	1	1	1,2	3			

#### Footnotes

<sup>^</sup> This course is not offered in the on-campus mode. On-campus students should enrol in the external mode of this course.

## Civil Engineering Major recommended enrolment pattern

Major study: Civil Engineering (Major Study Code: 16207)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)		
	Year	Sem	Year	Sem	Year	Sem	
<b>Schedule A: Core Courses</b> Students must complete all three courses listed in this schedule.							
<a href="#">ENG5001 Professional Skills in Engineering</a>	1	1,2	1	1,2			
<a href="#">MAT2500 Engineering Mathematics 3</a>	1	2	1	2			Pre-requisite: <a href="#">MAT1102</a> or <a href="#">MAT1502</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MENS
<a href="#">ENG3103 Engineering Problem Solving Computations</a>	1	2	2	2			Pre-requisite: ( <a href="#">ENG2102</a> and <a href="#">MAT1502</a> ) or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<b>Schedule B: Major Courses</b> Students must complete five of the courses listed in this schedule.							
<a href="#">ENG4104 Engineering Problem Solving Simulations</a>	2	2	3	2			Pre-requisite: <a href="#">ENG3103</a> or Students must be enrolled in one of the following Programs:

Major study: Civil Engineering (Major Study Code: 16207)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)		
	Year	Sem	Year	Sem	Year	Sem	
							GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">ENG8001 Engineering and Surveying Research Methodology</a>	1	1,2					
<a href="#">CIV3403 Geotechnical Engineering</a>	1	2	2	2			Pre-requisite: CIV2401 or <a href="#">CIV2403</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">CIV3505 Structural Analysis</a>	1	1	2	1			Pre-requisite: <a href="#">MEC2402</a> and <a href="#">MAT1502</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">CIV3506 Concrete Structures</a>	1	1	2	1			Pre-requisite: <a href="#">CIV2503</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">CIV5704 Road and Street Engineering</a>	2	2	2	2			
<a href="#">ENV3104 Hydraulics II</a>	2	1	3	1			Pre-requisite: ENV1101 or <a href="#">ENV2103</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">CIV4508 Structural Design II</a>	2	1	3	1			Pre-requisite: <a href="#">CIV3505</a> and <a href="#">CIV3506</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<b>Schedule C: Practice Courses</b> Students must complete all of the courses listed in this schedule.							
<a href="#">CIV3907 Civil Systems Practice<sup>^</sup></a>	1		1,2	3			Pre-requisite: <a href="#">CIV2503</a> or Students must be enrolled in one of the following Programs: GDNS or MENS
<a href="#">CIV4908 Civil Design Practice<sup>^</sup></a>	1		2	2			Pre-requisite: <a href="#">CIV4508</a> or Students must be enrolled in one of the following Programs: MEPR or GDNS or MENS

#### Footnotes

<sup>^</sup> This course is not offered in the on-campus mode. On-campus students should enrol in the external mode of this course.

## Electrical and Electronic Engineering Major recommended enrolment pattern

Major study: Electrical and Electronic Engineering (Major Study Code: 16208)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)		
	Year	Sem	Year	Sem	Year	Sem	
<b>Schedule A: Core Courses</b> Students must complete all three courses listed in this schedule.							
<a href="#">ENG5001 Professional Skills in Engineering</a>	1	1,2	1	1,2			
<a href="#">MAT2500 Engineering Mathematics 3</a>	1	2	1	2			Pre-requisite: <a href="#">MAT1102</a> or <a href="#">MAT1502</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MENS
<a href="#">ENG3103 Engineering Problem Solving Computations</a>	1	2	2	2			Pre-requisite: ( <a href="#">ENG2102</a> and <a href="#">MAT1502</a> ) or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS

Major study: Electrical and Electronic Engineering (Major Study Code: 16208)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)		
	Year	Sem	Year	Sem	Year	Sem	
<b>Schedule B: Major Courses</b> Students must complete five of the courses listed in this schedule.							
<a href="#">ENG4104 Engineering Problem Solving Simulations</a>	2	2	3	2			Pre-requisite: <a href="#">ENG3103</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">ENG8001 Engineering and Surveying Research Methodology</a>	1	1,2					
<a href="#">ELE4605 Fields and Waves</a>	1	1	3	1			Pre-requisite: ( <a href="#">MAT1502</a> and <a href="#">ELE2103</a> and <a href="#">ELE2601</a> ) or Students must be enrolled in the following Program: MEPR or MENS
<a href="#">ENG8101 Technological Impact and its Management</a>	1	1		1			
<a href="#">ELE3107 Signal Processing</a>	1	2		2			
<a href="#">ELE3305 Computer Systems and Communications Protocols</a>	2	1		1			
<a href="#">ELE4606 Communication Systems</a>	2	2	4	2			Pre-requisite: ( <a href="#">ELE2504</a> and <a href="#">ELE2601</a> ) or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or MENS
<b>Schedule C: Practice Courses</b> Students must complete all of the courses listed in this schedule.							
<a href="#">ELE2912 Electrical and Electronic Practice B</a>	1	1	2	3			Pre-requisite: <a href="#">ELE1801</a> and <a href="#">ELE1301</a> and <a href="#">ELE1502</a>
<a href="#">ELE2913 Electrical and Electronic Practice C</a>	2	2	3	2			

## Environmental Engineering Major recommended enrolment pattern

Major study: Environmental Engineering (Major Study Code: 16209)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)		
	Year	Sem	Year	Sem	Year	Sem	
<b>Schedule A: Core Courses</b> Students must complete all three courses listed in this schedule.							
<a href="#">ENG5001 Professional Skills in Engineering</a>	1	1,2	1	1,2			
<a href="#">MAT2500 Engineering Mathematics 3</a>	1	2	1	2			Pre-requisite: <a href="#">MAT1102</a> or <a href="#">MAT1502</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MENS
<a href="#">ENG3103 Engineering Problem Solving Computations</a>	1	2	2	2			Pre-requisite: ( <a href="#">ENG2102</a> and <a href="#">MAT1502</a> ) or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<b>Schedule B: Major Courses</b> Students must complete five of the courses listed in this schedule.							
<a href="#">ENG4104 Engineering Problem Solving Simulations</a>	2	2	3	2			Pre-requisite: <a href="#">ENG3103</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">ENG8001 Engineering and Surveying Research Methodology</a>	1	1,2					
<a href="#">AGR3304 Soil Science</a>	1	1	2	1			
<a href="#">ENV3104 Hydraulics II</a>	1	1	2	1			Pre-requisite: ENV1101 or <a href="#">ENV2103</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS

Major study: Environmental Engineering (Major Study Code: 16209)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)		
	Year	Sem	Year	Sem	Year	Sem	
							ing Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">ENV5205 Solid and Liquid Waste Treatment</a>	2	1	3	1			Pre-requisite: <a href="#">ENV4203</a> or <a href="#">ENV4204</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">ENV4204 Environmental Technology</a>	2	1	3	1			Pre-requisite: <a href="#">MAT1100</a> or <a href="#">MAT1500</a> or Students must be enrolled in one of the following programs: GCEN or GDET or METC or MENS or GCNS or GDNS or MSST
<a href="#">ENV4107 Water Resources Engineering</a>	2	2	3	2			Pre-requisite: ( <a href="#">ENV3104</a> and <a href="#">ENV3105</a> ) or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GCEN or GDNS or MENS
<a href="#">ENV4203 Public Health Engineering</a>	1	2	4	2			Pre-requisite: ENV1101 or <a href="#">ENV2103</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<b>Schedule C: Practice Courses</b> Students must complete all of the courses listed in this schedule.							
<a href="#">AGR3903 Soil and Water Engineering Practice 2<sup>^</sup></a>	1		2	2			
<a href="#">ENV3904 Environmental Engineering Practice<sup>^</sup></a>	1		3	3			Pre-requisite: <a href="#">ENV4203</a> or Students must be enrolled in one of the following Programs: GDNS or MENS

#### Footnotes

<sup>^</sup> This course is not offered in the on-campus mode. On-campus students should enrol in the external mode of this course.

## Geographical Information Systems Major recommended enrolment pattern

Major study: Geographical Information Systems (Major Study Code: 16210)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)		
	Year	Sem	Year	Sem	Year	Sem	
<b>Schedule A: Core Courses</b> Students must complete all three courses listed in this schedule.							
<a href="#">ENG5001 Professional Skills in Engineering</a>	1	1,2	1	1,2			
<a href="#">MAT2500 Engineering Mathematics 3</a>	1	2	1	2			Pre-requisite: <a href="#">MAT1102</a> or <a href="#">MAT1502</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MENS
<a href="#">ENG3103 Engineering Problem Solving Computations</a>	1	2	2	2			Pre-requisite: ( <a href="#">ENG2102</a> and <a href="#">MAT1502</a> ) or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<b>Schedule B: Major Courses</b> Students must complete five of courses listed in this schedule.							
<a href="#">ENG4104 Engineering Problem Solving Simulations</a>	2	2	3	2			Pre-requisite: <a href="#">ENG3103</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">ENG8001 Engineering and Surveying Research Methodology</a>	1	1,2					
<a href="#">GIS3405 Spatial Analysis and Modelling</a>	1	2	2	2			

Major study: Geographical Information Systems (Major Study Code: 16210)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)		
	Year	Sem	Year	Sem	Year	Sem	
<a href="#">GIS3406 Remote Sensing and Image Processing</a>	1	2	2	2			
<a href="#">SVY4203 Urban and Regional Planning</a>	1	1	2	1			
<a href="#">SVY3202 Photogrammetry and Remote Sensing</a>	1	1	1	1			
<a href="#">GIS4407 Web Based Geographic Information System</a>	2	2	3	2			Pre-requisite: <a href="#">GIS1402</a> or Students must be enrolled in one of the following Programs: GCGS or GDST or MSST or GCNS or GCST or GDNS or MENS
<a href="#">ENG8101 Technological Impact and its Management</a>	2	1	4	1			
<b>Schedule C: Practice Courses</b> Students must complete the courses listed in this schedule.							
<a href="#">GIS2901</a>	1	3	1	3			
<a href="#">GIS3901</a>	1	2	2	2			

## Mechanical Engineering Major recommended enrolment pattern

Major study: Mechanical Engineering (Major Study Code: 16211)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)		
	Year	Sem	Year	Sem	Year	Sem	
<b>Schedule A: Core Courses</b> Students must complete all three courses listed in this schedule.							
<a href="#">ENG5001 Professional Skills in Engineering</a>	1	1,2	1,2	1,2			
<a href="#">MAT2500 Engineering Mathematics 3</a>	1	2	1,2	2			Pre-requisite: <a href="#">MAT1102</a> or <a href="#">MAT1502</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MENS
<a href="#">ENG3103 Engineering Problem Solving Computations</a>	1	2	2	2			Pre-requisite: ( <a href="#">ENG2102</a> and <a href="#">MAT1502</a> ) or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<b>Schedule B: Major Courses</b> Students must complete five of the courses listed in this schedule.							
<a href="#">ENG4104 Engineering Problem Solving Simulations</a>	2	2	3	2			Pre-requisite: <a href="#">ENG3103</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">ENG8001 Engineering and Surveying Research Methodology</a>	1	1,2					
<a href="#">ENG8103 Management of Technological Risk</a>	1	2		2			
<a href="#">MEC3102 Fluid Mechanics</a>	2	1	3	1			Pre-requisite: ( <a href="#">MAT2500</a> and <a href="#">MEC2101</a> ) or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">MEC4104 Energy Technology</a>	2	1	4	1			Pre-requisite: ( <a href="#">MEC2101</a> and <a href="#">MEC3102</a> ) or <a href="#">MEC2106</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MENS
<a href="#">MEC3302 Computational Mechanics in Design</a>	1	1	2	1			Pre-requisite: ( <a href="#">MEC2304</a> and <a href="#">MEC2401</a> and <a href="#">MEC2402</a> ) or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">MEC3303 System Design</a>	1	2	3	2			Pre-requisite: <a href="#">MEC2301</a> or Students must be enrolled in one of the following Programs:

Major study: Mechanical Engineering (Major Study Code: 16211)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)		
	Year	Sem	Year	Sem	Year	Sem	
							GCEN or GDET or METC or GCNS or GDNS or MEPR or MENS
<a href="#">MEC3403 Dynamics II</a>	1	2	2	2			Pre-requisite: ( <a href="#">MEC2401</a> and <a href="#">MAT2500</a> ) or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<b>Schedule C: Practice Courses</b> Students must complete two of the courses listed in this schedule.							
<a href="#">MEC3903 Mechanical Practice 3</a>	1	2	3	2			
<a href="#">MEC3904 Mechanical Practice 4</a>	2	2	4	2			
<a href="#">MEC3905 Mechatronic Practice</a>			4	2			

## Power Engineering Major recommended enrolment pattern

Major study: Power Engineering (Major Study Code: 16212)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)		
	Year	Sem	Year	Sem	Year	Sem	
<b>Schedule A: Core Courses</b> Students must complete all three courses listed in this schedule.							
<a href="#">ENG5001 Professional Skills in Engineering</a>	1	1,2	1	1,2			
<a href="#">MAT2500 Engineering Mathematics 3</a>	1	2	1	2			Pre-requisite: <a href="#">MAT1102</a> or <a href="#">MAT1502</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MENS
<a href="#">ENG3103 Engineering Problem Solving Computations</a>	1	1	1	1,3			Pre-requisite: ( <a href="#">ENG2102</a> and <a href="#">MAT1502</a> ) or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<b>Schedule B: Major Courses</b> Students must complete five of the courses listed in this schedule.							
<a href="#">ENG4104 Engineering Problem Solving Simulations</a>	2	2	3	2			Pre-requisite: <a href="#">ENG3103</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">ENG8001 Engineering and Surveying Research Methodology</a>	1	1,2	3	2			
<a href="#">ELE3305 Computer Systems and Communications Protocols</a>	1	1		1			
<a href="#">ELE3803 Electrical Plant</a>	2	1		1			Pre-requisite: <a href="#">ELE1801</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">ENG8104 Asset Management in an Engineering Environment</a>	2	1		1			
<a href="#">ELE3805 Power Electronics Principles and Applications</a>	1	2	2	2			Pre-requisite: ( <a href="#">ELE1502</a> and <a href="#">ELE1801</a> ) or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">ELE3807 Power Systems Analysis</a>	2	1	3	1			
<b>Schedule C: Practice Courses</b> Students must complete all of the courses listed in this schedule.							
<a href="#">ELE2912 Electrical and Electronic Practice B</a>	1	1	2	3			Pre-requisite: <a href="#">ELE1801</a> and <a href="#">ELE1301</a> and <a href="#">ELE1502</a>

Major study: Power Engineering (Major Study Code: 16212)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)		
	Year	Sem	Year	Sem	Year	Sem	
<a href="#">ELE2913 Electrical and Electronic Practice C</a>	2	2	3	2			

## Structural Engineering Major recommended enrolment pattern

Major study: Structural Engineering (Major Study Code: 16213)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)		
	Year	Sem	Year	Sem	Year	Sem	

**Schedule A: Core Courses** Students must complete all three courses listed in this schedule.

<a href="#">ENG5001 Professional Skills in Engineering</a>	1	1,2	1	1,2			
<a href="#">MAT2500 Engineering Mathematics 3</a>	1	2	1	2			Pre-requisite: <a href="#">MAT1102</a> or <a href="#">MAT1502</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MENS
<a href="#">ENG3103 Engineering Problem Solving Computations</a>	1	2	2	2			Pre-requisite: ( <a href="#">ENG2102</a> and <a href="#">MAT1502</a> ) or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS

**Schedule B: Major Courses** Students must complete five of the courses listed in this schedule.

<a href="#">ENG4104 Engineering Problem Solving Simulations</a>	2	2	3	2			Pre-requisite: <a href="#">ENG3103</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">ENG8001 Engineering and Surveying Research Methodology</a>	1	1,2					
<a href="#">CIV3403 Geotechnical Engineering</a>	1	2	2	2			Pre-requisite: <a href="#">CIV2401</a> or <a href="#">CIV2403</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">CIV3505 Structural Analysis</a>	1	1	2	1			Pre-requisite: <a href="#">MEC2402</a> and <a href="#">MAT1502</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">CIV3506 Concrete Structures</a>	1	1	2	1			Pre-requisite: <a href="#">CIV2503</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">CIV4508 Structural Design II</a>	2	1	3	1			Pre-requisite: <a href="#">CIV3505</a> and <a href="#">CIV3506</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">ENG8802 Advanced Prestressed Concrete]</a>	2	2	4			2	
<a href="#">ENG8803 Mechanics and Technology of Fibre Composites</a>						1	

**Schedule C: Practice Courses** Students must complete two of the courses listed in this schedule.

<a href="#">CIV3907 Civil Systems Practice</a>	1		1	3			Pre-requisite: <a href="#">CIV2503</a> or Students must be enrolled in one of the following Programs: GDNS or MENS
<a href="#">CIV4908 Civil Design Practice<sup>A</sup></a>	1		2	2			Pre-requisite: <a href="#">CIV4508</a> or Students must be enrolled in one of the following Programs: MEPR or GDNS or MENS

#### Footnotes

] Offered Odd Years Only

^ This course is not offered in the on-campus mode. On-campus students should enrol in the external mode of this course.

## Surveying Major recommended enrolment pattern

Major study: Surveying (Major Study Code: 16214)							
Course	Year of program and semester in which course is normally studied						Enrolment requirements
	On-campus (ONC)		External (EXT)		Online (WEB)		
	Year	Sem	Year	Sem	Year	Sem	
<b>Schedule A: Core Courses</b> Students must complete all three courses listed in this schedule.							
<a href="#">ENG5001 Professional Skills in Engineering</a>	1	1,2	1	1,2			
<a href="#">MAT2500 Engineering Mathematics 3</a>	1	2	1	2			Pre-requisite: <a href="#">MAT1102</a> or <a href="#">MAT1502</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MENS
<a href="#">ENG3103 Engineering Problem Solving Computations</a>	1	2	2	2			Pre-requisite: ( <a href="#">ENG2102</a> and <a href="#">MAT1502</a> ) or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<b>Schedule B: Major Courses</b> Students must complete five of the courses listed in this schedule.							
<a href="#">ENG4104 Engineering Problem Solving Simulations</a>	2	2	3	2			Pre-requisite: <a href="#">ENG3103</a> or Students must be enrolled in one of the following Programs: GCEN or GDET or METC or MEPR or GCNS or GDNS or MENS
<a href="#">ENG8001 Engineering and Surveying Research Methodology</a>	1	1,2					
<a href="#">SVY3202 Photogrammetry and Remote Sensing</a>	2	1	4	1			
<a href="#">SVY2105 Survey Computations B</a>	1	2	2	2			Pre-requisite: <a href="#">SVY2106</a> or Students must be enrolled in one of the following Programs: GCNS or GCST or GDNS or GDST or MSST or MENS
<a href="#">SVY4203 Urban and Regional Planning</a>	1	1		1			
<a href="#">SVY3107 Geodetic Surveying B</a>	1	2	2	2			Pre-requisite: <a href="#">SVY1110</a> or Students must be enrolled in one of the following Programs: GCNS or GCST or GDNS or GDST or MSST or MENS
<a href="#">ENG8104 Asset Management in an Engineering Environment</a>	2	1	4	1			
<a href="#">SVY3304 Cadastral Surveying</a>	1	2	2	2			Pre-requisite: ( <a href="#">SVY1102</a> and <a href="#">SVY1104</a> ) or Students must be enrolled in one of the following Programs: GCNS or GCST or GDNS or GDST or MSST or MENS
<b>Schedule C: Practice Courses</b> Students must complete all the courses listed in this schedule.							
<a href="#">SVY2903 Surveying and Spatial Science Practice 3</a>	1		1	3			Pre-requisite: <a href="#">SVY1901</a> and <a href="#">SVY1102</a> or Students must be enrolled in one of the following Programs: GCNS or GDNS or MENS
<a href="#">SVY3904 Surveying and Spatial Science Practice 4</a> <sup>^</sup>	1		2	2			Pre-requisite: <a href="#">SVY2903</a> or Students must be enrolled in one of the following Programs: GCNS or GDNS or MENS

#### Footnotes

^ On-campus students should enrol in the external offering of this course.