



## 1. General Course Information

### 1.1 Course Details

<b>Course Code:</b>	1007ENG
<b>Course Name:</b>	Engineering Fundamentals
<b>Trimester:</b>	Trimester 3, 2019
<b>Program:</b>	Diploma of Engineering
	In Person
	Mt Gravatt / Gold Coast
<b>Credit Points:</b>	10
<b>Course Coordinator:</b>	Dr Andrew Wixted
<b>Document modified:</b>	August 19, 2019

### Course Description

This course provides students with core professional empowering skills required to complete their engineering degree, gain work experience and begin their engineering careers. The course is taught through using several modes including: Problem-, Project- and Experiential-Based Learning. Students learn by undertaking a design project using commercial methods and practices. The course provides basic techniques in the use of CAD software for preparation of drawings needed for their project. Oral and written communications also form major components of the course. The course also contains generic skills required for tertiary study of engineering including: engineering ethics, sustainability and engineering design theory. The course is intended to equip students with the generic Engineering skills and professional responsibility to others that should be integral to their University studies and later professional practice.

### Assumed Knowledge

There are no prerequisites for this subject.

## 1.2 Teaching Team

Your lecturer/tutor can be contacted via the email system on the portal.

Name	Email
Dr Andrew Wixted	andrew.wixted@staff.griffithcollege.edu.au

## 1.3 Staff Consultation

Your lecturer/tutor is available each week for consultation outside of normal class times. Times that your lecturer/tutor will be available for consultation will be given in the first week of lectures. A list of times and rooms will be published on the Griffith College Portal under the "Support and Services/Teacher Consultation Times" link.

## 1.4 Timetable

Your timetable is available on the Griffith College Portal at Class Timetable in Student and Services.

## 1.5 Technical Specifications

All students must have access to a computer or suitable mobile device.

## 2. Aims, Outcomes & Generic Skills

### 2.1 Course Aims

This course within the Diploma of Engineering aims to assist students in preparing for university study and to place their study in the context of what it means to be a professional engineer.

This course focuses on developing student knowledge and skills in the areas of engineering design practice, professional ethics and communication skills. It also aims to highlight the need for professional communication in multidisciplinary teams, developing student ability to communicate verbally and in writing.

The course also aims to ensure students are competent in the operation of software essential in later courses within the program.

### 2.2 Learning Outcomes

After successfully completing this course you should be able to:

1. Describe the multi-faceted role of the professional engineer in society.
2. Explain the ethical and moral obligations of professional engineers to act in an environmentally, socially and economically responsible manner.
3. Demonstrate the skills required to communicate effectively in a professional manner both in written and oral form.
4. Apply basic project management skills and tools within a team project.
5. Analyse team effectiveness and prepare recommendations for enhancing team performance.
6. Prepare engineering drawings using basic CAD functionality.

### 2.3 Generic skills

For further details on the Generic Skills please refer to the Graduate Generic Skills and Capabilities policy.

Griffith College aims to develop graduates who have an open and critical approach to learning and a capacity for lifelong learning. Through engagement in their studies, students are provided with opportunities to begin the development of these and other generic skills.

Studies in this course will give you opportunities to begin to develop the following skills:

Generic Skills	Taught	Practised	Assessed
Written Communication	Yes	Yes	Yes
Oral Communication	Yes	Yes	Yes
Information Literacy	Yes	Yes	Yes
Secondary Research	Yes	Yes	Yes
Critical and Innovative Thinking	Yes	Yes	Yes
Academic Integrity	Yes	Yes	Yes
Self Directed Learning	Yes	Yes	Yes
Team Work	Yes	Yes	Yes
Cultural Intelligence	Yes	Yes	Yes
English Language Proficiency		Yes	Yes

### 3. Learning Resources

#### 3.1 Required Resources

Dowling, D., Carew, A., & Hadgraft, R., (2016) **Engineering your future: an Australasian Guide**, (3rd ed.), Milton, Qld., John Wiley & Sons.

Note: Although the final exam is open book, no electronic devices can be taken into the exam. Therefore, the hardcopy version of the textbook may be a better option to purchase.

Note: A number of copies of this text may be available from the University library.

#### 3.2 Recommended Resources

Kosky.P., Wise.G., Balmer.R., Keat.W (2010) Exploring Engineering: An Introduction to Engineering & Design (2nd ed.) Sydney: Elsevier•

Fowler.J., Guddmundsson.A., Whicker.L (2011) groups work! A guide for working in groups (2nd ed.). Palmer Higgs Books Online

#### 3.3 College Support Services and Learning Resources

The College provides many facilities and support services to assist students in their studies. Links to information about College support resources that are available to students are included below for easy reference.

[Digital Library](#) – Databases to which Griffith College students have access to through the Griffith Library Databases.

MyStudy – there is a dedicated website for this course via MyStudy on the Griffith College Portal.

[Academic Integrity Tutorial](#) - this tutorial helps students to understand what academic integrity is and why it matters. You will be able to identify types of breaches of academic integrity, understand what skills you will need in order to maintain academic integrity, and learn about the processes of referencing styles.

Services and Support provides a range of services to support students throughout their studies including personal support such as Counselling; Academic support; and Welfare support.

Jobs and Employment in the [Student Hub](#) can assist students with career direction, resume and interview preparation, job search tips, and more.

[IT Support](#) provides details of accessing support, information on s numbers and internet access and computer lab rules.

## 3.4 Other Learning Information

### **Attendance**

You are expected to attend all lectures and tutorials and to actively engage in learning during these sessions. You are expected to bring all necessary learning resources to class such as the required textbook and /or Workbook. In addition, you may BYOD (bring your own device) to class such as a laptop or tablet. This is not a requirement as computer lab facilities are available on campus, however, the use of such devices in the classroom is encouraged with appropriate and considerate use principles being a priority.

### **Preparation and Participation in Class**

In order to enhance learning, prepare before lectures and tutorials. Read the relevant section of your text book before a lecture, and for a tutorial read both the textbook and the relevant lecture notes. If you have been given tutorial exercises, make sure you complete them. Active participation in lectures and tutorials will improve your learning. Ask questions when something is unclear or when you want to bring some issue to your lecturer or tutor's attention; respond to questions to test your knowledge and engage in discussion to help yourself and others learn.

### **Consultation Sessions**

Teachers offer extra time each week to assist students outside the classroom. This is known as 'consultation time.' You may seek assistance from your teacher on email or in person according to how the teacher has explained this to the class. Attendance during consultation time is optional but you are encouraged to use this extra help to improve your learning outcomes.

### **Course Materials**

Lecture notes will be made available to you in MyStudy on the Griffith College Portal and you are advised to either print these out and bring them to each class so that extra notes can be added or BYOD (bring your own device) and add extra notes digitally.

### **Self-Directed Learning**

You will be expected to learn independently. This means you must organise and learn the course content even when you are not specifically asked to do so by your lecturer or tutor. This involves revising the weekly course material. It also means you will need to find additional information for some assessment items beyond that given to you in textbooks and lecture notes, and to construct your own response to a question or topic. All of this requires careful planning of your time. Expect to spend, on average, at least 10 hours per week including class time for each of your courses.

### **Program Progression**

You are reminded that satisfactory Program Progression requires that attendance in classes is maintained at equal to or greater than 80%, and that GPA is maintained at equal to or greater than 3.5 [please see Griffith College Policy Library - Program Progression Policy - for more information].

### **Teacher and course Evaluation**

Your feedback is respected and valued by your lecturers and tutors. You are encouraged to provide your thoughts on the course and teaching, both positive and critical, directly to your lecturer and tutor or by completing course and lecturer evaluations via Griffith College's evaluation tool whenever these are available.

## 4. Learning and Teaching Activities

### 4.1 Weekly Learning Activities

Week	Topic	Activity	Readings	Learning Outcomes
1	Course Introduction Introduction to Engineering	Lecture	Ch 1 & Notes	1,2,3
	Writing skills 01	Tutorial		
2	The Engineering Method	Lecture	Ch 2 & Notes	1,2,4
	Project Introduction	Tutorial		
3	Project Management	Lecture	Ch 13 & Notes	3,4,5
	Writing skills 02	Tutorial		
4	Enabling Skills Engineering Communications	Lecture	Chs 4-6 & Notes	1,2,3
	Project Concept Planning Due	Tutorial		
5	Engineering Drawing & CAD	Lecture	Lecture Notes	3,6
	Project Presentations #1	Tutorial		
6	Problem Solving Information Skills	Lecture	Chs 8-11	2,3,6
	Project individual concept CAD due	Tutorial		
7	Engineering Design 1	Lecture	Chs 8-11 & Notes	2,3,4
	Project Management Plan due	Tutorial		
8	Engineering Design 2	Lecture	Chs 8-11 & Notes	4,5
	Project Presentations #2	Tutorial		
9	CAD / CAM & Rapid Prototyping	Lecture	Lecture Notes	3,5,6
	Writing skills 03	Tutorial		
10	Systems Engineering	Lecture	Ch 7 & Notes	3,6
	Project Presentations #3	Tutorial		
11	Sustainable Engineering	Lecture	Notes	2,3,6
	Project team design defence	Tutorial		
12	Engineering Futures	Lecture		1,2,5,6
	Project Presentations #4 Total Project File due	Tutorial		

## 5. Assessment Plan

### 5.1 Assessment Summary

Item	Assessment Task	Weighting	Learning Outcomes	Due Date
1	Writing Skills	9%	3,5	1,3,9
2	Project Presentations	6%	3,4,5,6	5,8,10,12
3	Project Designs	15%	3,6	6, 10, 11
4	Project Reporting	35%	2,3,4,5,6	4,7,12
5	Final Exam	35%	1,2,3,4,5,6	Exam Block

## 5.2 Assessment Detail

### Item 1:

#### Writing Skills

Three short writing exercises are required for Writing Skills assessment. The three short writing exercises are worth 3% each for a total of 9% of the final 1007ENG semester mark. Students will write on a topic related to Critical, Systems, Creative and Design thinking and Reflective Practice as detailed in the class by the tutor. Students are expected to use a technical writing methodology and format.

This is an individual submission.

### Item 2:

#### Design Project Progress and Individual Presentations

The design project involves you working together with other students as a team. As your project progresses, you will be required to report to the class on your team progress using PowerPoint slides to guide the audience through the presentation. A 1-2 page executive summary, at least 10 PowerPoint slides and a minimum five [5] minute talk will be required from each student for assessment worth 6% of the final 1007ENG marks. A hardcopy of the presentation and any handouts are to be presented to the tutor BEFORE the presentation begins. Each team member will have an opportunity to present in one of the four tutorial classes reserved for presentations. The schedule is to be coordinated by the team.

This is an individual submission.

### Item 3:

#### Design Project Testing

A design project performance competition will be held in Week 11 to assess team achievements and learning outcomes. This is a group submission.

### Item 4:

#### Design Project Reporting

The Design Project will become a comprehensive written report, which will include a critique on the chosen design and the strengths of your project, as well as on your team dynamics and team and peer assessments. Peer assessments of individual contributions are also collected and peer assessment factors are applied to determine an individual team member's Design Project results. The Design Projects must be available for inspection by your tutor upon request in Weeks 3-11. Details and specifications for the Design Project will be provided by your lecturer.

A professional report is required. The use of a word processor is mandatory. You will be required to use

- \* Times New Roman or Arial 12 pt font
- \* All four margins 20mm
- \* A4 page size
- \* Single or 1.15 line spacing
- \* Correct page orientation in a 2-3-4 ring binder

Reports that do not comply with this format will not be accepted. The report will not be marked and will attract the specified late penalty until a correctly formatted report is submitted.

The Design Project is partitioned into 3 phases for assessment purposes including: Project Concept Planning (due Week 4), Project Management Planning (due Week 7) and the final Project File which includes: all Project Planning and Design File/s (due week 12) The sections will be submitted both as a softcopy and as a hardcopy at the beginning of the project tutorial class in the week due. This is both individual and group submission. Contribution to the teamwork assessed through peer assessment and individual project workbooks will affect final individual marks.

### Item 5:

#### Final Exam

The final examination will be an open book exam covering all aspects of the lecture series and consists of both multiple choice and short answer questions.

## 5.3 Late Submission

An assessment item submitted after the due date, without an approved extension from the Course Coordinator, will be penalised. The standard penalty is the reduction of the mark allocated to the assessment item by 5% of the maximum mark applicable for the assessment item, for each working day or part working day that the item is late. Assessment items submitted more than five working days after the due date are awarded zero marks.

Please refer to the Griffith College website - Policy Library > Assessment Policy for guidelines and penalties for late submission.

## 5.4 Other Assessment Information

### Retention of Originals

You must be able to produce a copy of all work submitted if so requested. Copies should be retained until after the release of final results for the course.

### Requests for extension

To apply for an extension of time for an assignment, you must submit an [Application for Extension of Assignment](#) form to your teacher at least 24 hours before the date the assignment is due. Grounds for extensions are usually: serious illness, accident, disability, bereavement or other compassionate circumstances and must be able to be substantiated with relevant documentation [e.g. [Griffith College Student Medical Certificate](#)]. Please refer to the Griffith College website - Policy Library - for guidelines regarding extensions and deferred assessment.

### Return of Assessment Items

1. Marks awarded for in-trimester assessment items, except those being moderated externally with Griffith University, will be available on the Student Portal within fourteen [14] days of the due date. This does not apply to the final assessment item in this course (marks for this item will be provided with the final course result).
2. Students will be advised of their final grade through the Student Portal. Students can review their exam papers after student grades have been published (see relevant Griffith College Fact Sheet for allocated times at Support> Factsheets). Review of exam papers will not be permitted after the final date to enrol.
3. Marks for **all** assessment items including the final exam (if applicable) will be recorded in the Moodle Course Site and made available to students through the Moodle Course Site.

*The sum of your marks overall assessment items in this course does not necessarily imply your final grade for the course. Standard grade cut off scores can be varied for particular courses, so you need to wait for the official release of grades to be sure of your grade for this course.*

## 6. Policies & Guidelines

Griffith College assessment-related policies can be found in the [Griffith College Policy Library](#) which include the following policies:

Assessment Policy, Special Consideration, Deferred Assessment, Alternate Exam Sitting, Medical Certificates, Academic Integrity, Finalisation of Results, Review of Marks, Moderation of Assessment, Turn-it-in Software Use. These policies can be accessed using the 'Document Search' feature within the [Policy Library](#)

**Academic Integrity** Griffith College is committed to maintaining high academic standards to protect the value of its qualifications. Academic integrity means acting with the values of honesty, trust, fairness, respect and responsibility in learning, teaching and research. It is important for students, teachers, researchers and all staff to act in an honest way, be responsible for their actions, and show fairness in every part of their work. Academic integrity is important for an individual's and the College's reputation.

All staff and students of the College are responsible for academic integrity. As a student, you are expected to conduct your studies honestly, ethically and in accordance with accepted standards of academic conduct. Any form of academic conduct that is contrary to these standards is considered a breach of academic integrity and is unacceptable.

Some students deliberately breach academic integrity standards with intent to deceive. This conscious, pre-meditated form of cheating is considered to be one of the most serious forms of fraudulent academic behaviour, for which the College has zero tolerance and for which penalties, including exclusion from the College, will be applied.

However, Griffith College also recognises many students breach academic integrity standards without intent to deceive. In these cases, students may be required to undertake additional educational activities to remediate their behaviour and may also be provided appropriate advice by academic staff.

As you undertake your studies at Griffith College, your lecturers, tutors and academic advisors will provide you with guidance to understand and maintain academic integrity; however, it is also your responsibility to seek out guidance if and when you are unsure about appropriate academic conduct.

In the case of an allegation of a breach of academic integrity being made against a student he or she may request the guidance and support of a Griffith College Student Learning Advisor or Student Counsellor.

Please ensure that you are familiar with the Griffith College Academic Integrity Policy; this policy provides an overview of some of the behaviours that are considered breaches of academic integrity, as well as the penalties and processes involved when a breach is identified.

For further information please refer to the Griffith College website - Policy Library > Academic Integrity Policy

### **Reasonable Adjustments for Assessment – The Disability Services policy**

The Disability Services policy (accessed using the Document Search' feature with the [Policy Library](#)) outlines the principles and processes that guide the College in making reasonable adjustments to assessment for students with disabilities while maintaining academic robustness of its programs.

### **Risk Assessment Statement**

There are no out of the ordinary risks associated with this course.

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