



## 1. General Course Information

### 1.1 Course Details

<b>Course Code:</b>	FND105
<b>Course Name:</b>	Advanced Mathematics
<b>Trimester:</b>	Trimester 1, 2020
<b>Program:</b>	Foundation Program
<b>Credit Points:</b>	10
<b>Course Coordinator:</b>	Jesse Rostagno
<b>Document modified:</b>	19 February 2020

### Course Description

This course consolidates background in real numbers and algebra, broadens knowledge of geometry, trigonometry and function theory, and explores the rules of differential and integral calculus. Students will use critical thinking and cognitive skills to identify, analyse and assess mathematical concepts in order to develop modelling and problem-solving techniques and apply them to technical, scientific and engineering problems.

### Assumed Knowledge

To successfully enrol in this Course, you must provide evidence that you have completed the following Courses:

- FND104 - Essential Mathematics

### 1.2 Teaching Team

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

Jesse Rostagno	<a href="mailto:jesse.rostagno@staff.griffithcollege.edu.au">jesse.rostagno@staff.griffithcollege.edu.au</a>
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## 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 aims to equip students with sound knowledge of the mathematical principles required for science and engineering. It aims to develop students critical thinking and mathematical modelling skills and to instruct them in finding solutions to problems in a clear and logical fashion

### 2.2 Learning Outcomes

After successfully completing this course you should be able to:

- 1 Demonstrate knowledge of a range of appropriate mathematical methods
- 2 Construct graphical representations of various mathematical functions
- 3 Demonstrate understanding of the applications of trigonometric functions
- 4 Demonstrate understanding of the applications of calculus
- 5 Demonstrate the ability to formulate mathematical models and use them in life related situations

### 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:

<b>Generic Skills</b>	<b>Taught</b>	<b>Practised</b>	<b>Assessed</b>
Knowledge and skills with critical judgement	✓	✓	
Communication and collaboration skills		✓	
Self-directed and active learning skills		✓	✓
Creative and future thinking skills		✓	✓
Social responsibility and ethical awareness			
Cultural competence and awareness in a culturally diverse environment			

### 3. Learning Resources

#### 3.1 Required Resources

FND105 Workbook (in two parts - Weeks 1-5 and Weeks 6-12) will be given to you in your class. Lecture notes are available on the course website in weekly format.

Non-programmable scientific calculator and a ruler

#### 3.2 Recommended Resources

#### 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	Fundamentals and Functions	Class	Workbook Week 1	1
2	Average Rates of change, Logarithms and Exponents	Class	Workbook Week 2	1, 2
3	Trigonometry	Class	Workbook Week 3	1, 3, 4
4	Periodic Functions	Class	Workbook Week 4	1, 2, 3
5	Applications of Trigonometry	Class	Workbook Week 5	1, 2, 3, 5
6	Mid-Trimester Exam and Limits	Class	Workbook Week 6	1
7	First Principles and Derivative Rules	Class	Workbook Week 7	1
8	More Derivative Rules	Class	Workbook Week 8	1
9	Applications of Derivatives and Anti-Derivatives	Class	Workbook Week 9	1, 2, 4, 5
10	Integral Rules	Class	Workbook Week 10	1
11	Applications of Integral Calculus	Class	Workbook Week 11	1, 2, 4, 5
12	Finalisation of Calculus and Revision	Class	Workbook Week 12	1, 2, 4, 5

## 5. Assessment Plan

### 5.1 Assessment Summary

Item	Assessment Task	Weighting	Learning Outcomes	Due Date
1	Assignment	25%	1, 2, 3	TBA
2	Mid-Trimester Exam	35%	1, 2, 3	Week 6
3	Final Exam	40%	1, 2, 4, 5	Examination Period

### 5.2 Assessment Detail

**Assignments:** The assignment in this course will assess mathematical application to problem solving, using the skills taught during the trimester.

**Mid-Trimester Exam:** The mid-trimester exam will be held in class time in week 6, and will test all the material taught in weeks 1 to 5. The duration of the exam is 2 hours.

**End of Trimester Exam:** The end of trimester exam will be held during the examination block, and will test all material taught from week 6 to 12. The duration of the exam is 2.5 hours.

### 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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