

## In Progress

Please note that this Unit Profile is still in progress. The content below is subject to change.



# **MATH11218 *Applied Mathematics***

## **Term 2 - 2024**

Profile information current as at 15/05/2024 10:39 am

All details in this unit profile for MATH11218 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

## General Information

### Overview

In this unit, you will study fundamental mathematical concepts, processes, and techniques necessary to support subsequent studies in applied calculus. Throughout the term, you will record handwritten worked examples of all problems attempted in a workbook to create a comprehensive resource for solving mathematical problems, which you can apply in the exam and throughout your course and career. You will investigate the properties and applications of linear, quadratic, logarithmic, and exponential functions. You will use trigonometry to solve triangles and determine solutions to problems involving algebraic techniques. Complex numbers, vectors, and matrix algebra will be used to develop solutions to problems. Other important elements of this unit are communicating results, concepts, and ideas using mathematics as a language. This unit will develop your software skills in WolframAlpha to visualise, analyse, validate and solve problems.

### Details

Career Level: *Undergraduate*

Unit Level: *Level 1*

Credit Points: 6

Student Contribution Band: 7

Fraction of Full-Time Student Load: 0.125

### Pre-requisites or Co-requisites

Anti-requisite: MATH12223 or MATH12224.

Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the [Assessment Policy and Procedure \(Higher Education Coursework\)](#).

### Offerings For Term 2 - 2024

- Bundaberg
- Cairns
- Gladstone
- Mackay
- Online
- Rockhampton

### Attendance Requirements

All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

### Website

[This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.](#)

## Class and Assessment Overview

### Recommended Student Time Commitment

Each 6-credit Undergraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

### Class Timetable

#### [Regional Campuses](#)

Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

#### [Metropolitan Campuses](#)

Adelaide, Brisbane, Melbourne, Perth, Sydney

### Assessment Overview

### Assessment Grading

This is a pass/fail (non-graded) unit. To pass the unit, you must pass all of the individual assessment tasks shown in the table above.

## CQUniversity Policies

**All University policies are available on the [CQUniversity Policy site](#).**

You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the [CQUniversity Policy site](#).

## Previous Student Feedback

### Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

#### Feedback from Student evaluation

##### **Feedback**

All the resources were very clear and useful

##### **Recommendation**

Continue to update learning resources and make them clear and concise.

#### Feedback from Student evaluation

##### **Feedback**

Assessments reflected to unit learning materials very well.

##### **Recommendation**

Continue to make assessments progressive and targeted and to link them with learning resources.

## Unit Learning Outcomes

**On successful completion of this unit, you will be able to:**

1. Determine solutions to problems involving algebraic techniques and vectors
2. Solve problems by applying the properties of linear, quadratic, logarithmic, and exponential functions
3. Model periodic phenomena using trigonometric functions
4. Solve geometric and engineering problems using complex numbers
5. Represent and solve problems using matrices and matrix operators
6. Communicate results, concepts, and ideas in context using mathematics as a language
7. Apply mathematical software to visualise, analyse, validate and solve problems.

**The Learning Outcomes for this unit are linked with the Engineers Australia Stage 1 Competency Standards for Professional Engineers in the areas of 1. Knowledge and Skill Base, 2. Engineering Application Ability and 3. Professional and Personal Attributes at the following levels:**

### **Introductory**

**1.2 Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline. (LO: 1N 2N 3N 4N 5N 6N 7N)**

**2.1 Application of established engineering methods to complex engineering problem-solving. (LO: 1N 2N 3N 4N 5N 7N)**

**2.2 Fluent application of engineering techniques, tools, and resources. (LO: 1N 2N 3N 4N 5N 7N)**

**3.2 Effective oral and written communication in professional and lay domains. (LO: 6N)**

**3.3 Creative, innovative, and proactive demeanor. (LO: 1N 2N 3N 4N 5N)**

**3.4 Professional use and management of information. (LO: 6N)**

***Note: LO refers to the Learning Outcome number(s) which link to the competency and the levels: N - Introductory, I - Intermediate, and A - Advanced.***

**Refer to the Engineering Undergraduate Course Moodle site for further information on Engineers Australia's Stage 1 Competency Standard for Professional Engineers and course-level mapping information <https://moodle.cqu.edu.au/course/view.php?id=1511>**

## Alignment of Learning Outcomes, Assessment and Graduate Attributes

 N/A Level	 Introductory Level	 Intermediate Level	 Graduate Level	 Professional Level	 Advanced Level
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### Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes						
	1	2	3	4	5	6	7
1 - Written Assessment - 0%	•	•	•	•	•	•	•
2 - Online Quiz(zes) - 0%	•	•	•	•			
3 - Examination - 0%	•	•	•	•	•	•	

### Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes						
	1	2	3	4	5	6	7
1 - Communication	•	•	•	•	•	•	•
2 - Problem Solving	•	•	•	•	•	•	•
3 - Critical Thinking	•	•	•	•	•	•	•
4 - Information Literacy	•	•	•	•	•	•	•
5 - Team Work							
6 - Information Technology Competence	•	•	•	•	•	•	•
7 - Cross Cultural Competence							
8 - Ethical practice							
9 - Social Innovation							
10 - Aboriginal and Torres Strait Islander Cultures							

## Textbooks and Resources

Information for Textbooks and Resources has not been released yet.

This information will be available on Monday 17 June 2024

## Academic Integrity Statement

Information for Academic Integrity Statement has not been released yet.

This unit profile has not yet been finalised.