MATH40252 *Technical Mathematics for University*

Term 2 - 2021

Profile information current as at 26/05/2022 08:25 pm

All details in this unit profile for MATH40252 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

Technical Mathematics for University is designed to follow on from Intermediate Mathematics for University. The completion of both Intermediate Mathematics for University and Technical Mathematics for University will prepare you for first year tertiary mathematics in applied science and engineering. The unit will provide you with knowledge of various mathematical topics, including algebra techniques; trigonometric functions, ratios, and graphs; plane and analytical geometry; introductory vectors and introductory calculus.

Details

Career Level: *Non-award*
Credit Points: *6*
Student Contribution Band: *7*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites

Students need to complete MATH40228 Intermediate Mathematics for University to enrol in this unit
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 - 2021

- Online

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 Non-award 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

1. **Written Assessment**
Weighting: Pass/Fail
2. **Written Assessment**
Weighting: 30%
3. **Written Assessment**
Weighting: 30%
4. **Examination**
Weighting: 40%

Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the University's Grades and Results Policy for more details of interim results and final grades.

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 Unit evaluation

Feedback
Provision of module test solutions has assisted learning.

Recommendation
Keep solutions up to date.

Feedback from Unit evaluation

Feedback
Need more explanation of application in lecture videos.

Recommendation
Re-record lecture videos to include links to applications covered in the tutorial.

Feedback from Student feedback

Feedback
Receiving feedback live in Zoom assisted learning.

Recommendation
Communicate more clearly that Zoom sessions can include feedback on submissions.

Feedback from Student feedback

Feedback
Unclear what parts of the textbook are most important.

Recommendation
Create a brief document for each module on aspects of the textbook.

Unit Learning Outcomes

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

1. Reflect on formative assessment to improve mathematical comprehension
2. Analyse information using mathematical techniques
3. Communicate mathematical solutions logically and clearly
4. Use mathematical concepts and techniques including algebra techniques; trigonometric functions, ratios, and graphs; plane and analytical geometry; introductory vectors and introductory calculus
5. Apply appropriate mathematical techniques
6. Develop solutions to applied mathematical problems.

N/A

Alignment of Learning Outcomes, Assessment and Graduate Attributes

— N/A Level • Introductory Level • Intermediate Level • Graduate Level ◦ Professional Level ◦ Advanced Level

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes					
	1	2	3	4	5	6
1 - Written Assessment - 0%	•	•	•	•	•	•
2 - Written Assessment - 30%		•	•	•	•	•
3 - Written Assessment - 30%		•	•	•	•	•
4 - Examination - 40%		•	•	•	•	•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes					
	1	2	3	4	5	6
1 - Self Management	—					
2 - Communication			—			—
3 - Information Literacy						
4 - Information Technology Competence						
5 - Problem Solving		—		—	—	—
6 - Critical Thinking						
7 - Cross-Cultural Competence						
8 - Ethical Practice			—			
9 - Aboriginal and Torres Strait Islander Cultures						

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes								
	1	2	3	4	5	6	7	8	9
1 - Written Assessment - 0%	—	—			—			—	
2 - Written Assessment - 30%	—	—			—			—	
3 - Written Assessment - 30%	—	—			—			—	
4 - Examination - 40%	—	—			—			—	

Textbooks and Resources

Textbooks

MATH40252

Prescribed

Technical Mathematics for University
Edition: 5 (2020)
Authors: School of Access Education
CQUniversity Publishing Unit
Rockhampton , QLD , Australia
Binding: Spiral

Additional Textbook Information
The textbook for Technical Mathematics for University (TMU) is available on the unit Moodle site, however, we strongly advise you to print out your own copy. You may like a hard copy to complete activities and take notes. The textbook cannot be purchased from the CQUniversity Bookshop. Your Access Coordinator will provide you with advice on printing options.

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Computer - ability to access study materials, including instructional videos & scan and upload assessment
- Microsoft Office or similar

Referencing Style

All submissions for this unit must use the referencing style: Harvard (author-date)
For further information, see the Assessment Tasks.

Teaching Contacts

Michael Dzator Unit Coordinator
m.dzator@cqu.edu.au

Schedule

Week 1 - 12 Jul 2021

Module/Topic	Chapter	Events and Submissions/Topic
Additional Topics in Algebra	ALGX	

Week 2 - 19 Jul 2021

Module/Topic	Chapter	Events and Submissions/Topic
Trigonometric Functions and Ratios	TRFN	ALGX Module Test: Due Week 2 Monday (19 July 2021) 11:45pm AEST

Week 3 - 26 Jul 2021

Module/Topic	Chapter	Events and Submissions/Topic

Graphs of Trigonometric Functions	TRGR	TRFN Module Test: Due Week 3 Monday (26 July 2021) 11:45pm AEST
Week 4 - 02 Aug 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Analytic Geometry	AGEO	TRGR Module Test: Due Week 4 Monday (2 August 2021) 11:45pmAEST
Week 5 - 09 Aug 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Introduction to Vectors	VECT	AGEO Module Test: Due Week 5 Monday (9 August 2021) 11:45pm AEST
Vacation Week - 16 Aug 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Week 6 - 23 Aug 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Revision		VECT Module Test: Due Week 6 Monday (23 August 2021) 11:45pm AEST
Week 7 - 30 Aug 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Introductory Differentiation	DIFF	**Assignment 1** Due: Week 7 Monday (30 Aug 2021) 11:45 pm AEST
Week 8 - 06 Sep 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Introductory Differentiation	DIFF	
Week 9 - 13 Sep 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Introduction to Integration	INTG	DIFF Module Test: Due Week 9 Monday (13 September 2021) 11:45pm AEST
Week 10 - 20 Sep 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Introduction to Integration	INTG	
Week 11 - 27 Sep 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Revision		INTG Module Test: Due Week 11 Monday (27 September 2021) 11:45pm AEST
Week 12 - 04 Oct 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Revision		**Assignment 2** Due: Week 12 Tuesday (5 Oct 2021) 11:45 pm AEST
Review/Exam Week - 11 Oct 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**

Exam Week - 18 Oct 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
		Examination: The date and time of the examination will be available through MyCQU approximately six weeks before the examination period.

Term Specific Information

Unit Coordinator
Dr Michael Dzator
Phone: 07 4940 7451
Email: m.dzator@cqu.edu.au
Location: Mackay Ooralea

Assessment Tasks

1 Module Tests

Assessment Type
Written Assessment

Task Description
You will complete seven modules in MATH40252 (from the Technical Mathematics for University textbook). At the conclusion of each module, you must complete the corresponding Module Test. The tests are available on the MATH40252 Moodle site and must be submitted via Moodle. The Module Tests are formative and are completed as assignments - no supervision is required. The purpose of the Module Tests is to help you and your Lecturer monitor your progress throughout the term, allowing you to identify any concepts that require further review. The tests also provide a basis for communication between you and your Lecturer/Unit Coordinator. You must achieve an average of 50% across the seven Module Tests in order to be awarded a PASS for this Assessment Item. You must also PASS this Assessment Item in order to be eligible to PASS MATH40252, provided all other conditions are met.

Assessment Due Date

Module Tests are due on the Monday of the week specified in the Unit Profile Schedule. A more detailed version of this schedule can be found in the TMU Unit Guide located on the unit Moodle site.

Return Date to Students

The Module Tests will be marked and returned within 10 days of the test due date or submission date, whichever is later. Your tests will be returned via the unit Moodle site.

Weighting
Pass/Fail

Minimum mark or grade
You must achieve an average of 50% across the seven Module Tests in order to be awarded a PASS for this Assessment Item. You must PASS this Assessment Item in order to be eligible to PASS MATH40252.

Assessment Criteria
Marks for each question will be allocated for the following:

- using appropriate setting out
- showing all correct steps in the solution
- answering the question asked, where appropriate
- finding the correct answer.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Each module test must be uploaded as a single pdf document via the unit Moodle site for MATH40252. Full details are provided on the unit Moodle site.

Learning Outcomes Assessed

- Reflect on formative assessment to improve mathematical comprehension
- Analyse information using mathematical techniques
- Communicate mathematical solutions logically and clearly
- Use mathematical concepts and techniques including algebra techniques; trigonometric functions, ratios, and graphs; plane and analytical geometry; introductory vectors and introductory calculus
- Apply appropriate mathematical techniques
- Develop solutions to applied mathematical problems.

Graduate Attributes

- Self Management
- Communication
- Problem Solving
- Ethical Practice

2 Assignment 1

Assessment Type
Written Assessment

Task Description
Assignment 1 is a non-supervised assignment and must be completed individually. This assignment is compulsory and covers the first 5 modules of the unit: ALGX, TRFN, TRGR, AGEO and VECT. Assignment 1 will be made available at the end of Week 3 on the unit Moodle site.

Assessment Due Date
Week 7 Monday (30 Aug 2021) 11:45 pm AEST

Return Date to Students

Assignment 1 will be marked and returned within 2 weeks of the due date or date submitted, whichever is later, and will be returned via the unit Moodle site.

Weighting
30%

Assessment Criteria
Marks for each question will be allocated for the following:

- using appropriate setting out
- showing all correct steps in the solution
- answering the question asked, where appropriate
- finding the correct answer.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Assignment 1 must be uploaded as s single pdf document via the unit Moodle site for MATH40252. Full details are provided on the unit Moodle site.

Learning Outcomes Assessed

- Analyse information using mathematical techniques
- Communicate mathematical solutions logically and clearly
- Use mathematical concepts and techniques including algebra techniques; trigonometric functions, ratios, and graphs; plane and analytical geometry; introductory vectors and introductory calculus
- Apply appropriate mathematical techniques

- Develop solutions to applied mathematical problems.

Graduate Attributes

- Self Management
- Communication
- Problem Solving
- Ethical Practice

3 Assignment 2

Assessment Type
Written Assessment

Task Description
Assignment 2 is a non-supervised assignment and must be completed individually. This assignment is compulsory and covers the modules DIFF and INTG. Assignment 2 will be made available at the end of Week 8 on the unit Moodle site.

Assessment Due Date
Week 12 Tuesday (5 Oct 2021) 11:45 pm AEST

Return Date to Students

Assignment 2 will be marked and returned within 2 weeks of the due date or date submitted, whichever is later, and will be returned via the unit Moodle site.

Weighting
30%

Assessment Criteria
Marks for each question will be allocated for the following:

- using appropriate setting out
- showing all correct steps in the solution
- answering the question asked, where appropriate
- finding the correct answer

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Assignment 2 must be uploaded as a single pdf document via the unit Moodle site for MATH40252. Full details are provided on the unit Moodle site.

Learning Outcomes Assessed

- Analyse information using mathematical techniques
- Communicate mathematical solutions logically and clearly
- Use mathematical concepts and techniques including algebra techniques; trigonometric functions, ratios, and graphs; plane and analytical geometry; introductory vectors and introductory calculus
- Apply appropriate mathematical techniques
- Develop solutions to applied mathematical problems.

Graduate Attributes

- Self Management
- Communication
- Problem Solving
- Ethical Practice

Examination

Outline
Complete an invigilated examination

Date
During the examination period, at a CQUniversity examination centre

Weighting
40%

Length
180 minutes

Minimum mark or grade
50%

Details
Dictionary - non-electronic, concise, direct translation only (dictionary must not contain any notes or comments).
Calculator - all non-communicable calculators, including scientific, programmable and graphics calculators are authorised
Closed Book

Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the **Student Academic Integrity Policy and Procedure**. This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

What is a breach of academic integrity?
A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

Why is academic integrity important?
A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

Where can I get assistance?
For academic advice and guidance, the Academic Learning Centre (ALC) can support you in becoming confident in completing assessments with integrity and of high standard.

What can you do to act with integrity?

Be Honest
If your assessment task is done by someone else, it would be dishonest of you to claim it as your own

Seek Help
If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)

Produce Original Work
Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem