

## EPMATH 109: Fundamental Mathematics

Ourimbah

Semester 1 - 2024



THE UNIVERSITY OF  
NEWCASTLE  
AUSTRALIA

*The Pathways and Academic Learning Support Centre recognises and respects the unique history and culture of Aboriginal and Torres Strait Islander peoples and their unbroken relationship with the lands and the waters of Australia over millennia. We are dedicated to reconciliation and to offering opportunities for Aboriginal and Torres Strait Islander peoples to access and succeed in higher education. The Centre is committed to providing a culturally safe and inclusive environment for all.*

## OVERVIEW

**Course Description** Fundamental Mathematics is a partially non-calculator introductory mathematics course which covers mathematical skills relevant to degrees requiring a basic level of mathematical knowledge and ability. The learning outcomes include an understanding of and competence in the skills of numeracy, arithmetic, fractions, decimals, percentages, ratio and scale measurement, basic statistics and units of measurement.

**Academic Progress Requirements** Nil

**Requisites** You cannot enrol in this course if you have successfully completed or are enrolled in EPMATH110, EPMATH126, or EPMATH134.

**Contact Hours**

**Ourimbah**

**Lecture**  
Face to Face On Campus  
2 hour(s) per week(s) for 13 week(s) starting Week 1

**Tutorial**  
Face to Face On Campus  
1 hour(s) per week(s) for 6 week(s) starting Week 1

**Tutorial**  
Face to Face On Campus  
1 hour(s) per week(s) for 5 week(s) starting Week 8

**Unit Weighting** 10

**Workload** Students are required to spend on average 120-140 hours of effort (contact and non-contact) including assessments per 10 unit course.

# COURSE OUTLINE

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# CONTACTS

<b>Course Coordinator</b>	<b>Mr Peter Power</b> <a href="mailto:Peter.Power@newcastle.edu.au">Peter.Power@newcastle.edu.au</a> 02 4348 4207 Consultation: Please email to schedule an appointment.		
<b>Teaching Staff</b>	Other teaching staff will be advised on the course Canvas site.		
<b>School Office</b>	<table><tr><td><b>Callaghan</b> Ground Floor, General Purpose Building (GP) Ph: 02 4921 5558 <a href="mailto:enabling@newcastle.edu.au">enabling@newcastle.edu.au</a></td><td><b>Ourimbah</b> HO 168, Humanities Building Ph: 02 4348 4076 <a href="mailto:enabling@newcastle.edu.au">enabling@newcastle.edu.au</a></td></tr></table>	<b>Callaghan</b> Ground Floor, General Purpose Building (GP) Ph: 02 4921 5558 <a href="mailto:enabling@newcastle.edu.au">enabling@newcastle.edu.au</a>	<b>Ourimbah</b> HO 168, Humanities Building Ph: 02 4348 4076 <a href="mailto:enabling@newcastle.edu.au">enabling@newcastle.edu.au</a>
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# SYLLABUS

<b>Course Content</b>	<ul style="list-style-type: none"><li>• Numeracy, place value, arithmetic algorithms, mental arithmetic, order of operations, directed numbers</li><li>• Fractions, decimals and percentage calculations and approximation of numbers</li><li>• Calculator use</li><li>• Basic statistics</li><li>• Ratio and scale measurement</li><li>• Scientific notation, units of measurement, prefixes, unit conversions</li></ul>
<b>Course Learning Outcomes</b>	<p><b>On successful completion of this course, students will be able to:</b></p> <ol style="list-style-type: none"><li>1. Demonstrate a sound knowledge and an understanding of numbers and arithmetic.</li><li>2. Use the skills of basic arithmetic without the use of a calculator competently and accurately.</li><li>3. Demonstrate an understanding of the concepts of mathematics relevant to degrees requiring a basic level of mathematical ability.</li><li>4. Apply basic mathematical and statistical concepts in real world problems.</li></ol>
<b>Course Materials</b>	A non-programmable scientific calculator will be required from week 8. All other course materials will be provided on the course Canvas site. Students are not required to purchase a textbook.

# SCHEDULE

Week	Week Begins	Topic	Learning Activity	Assessment Due
1	26 Feb	Module 1 – Arithmetic (I)	History of numbers, types of numbers, arithmetic, laws of arithmetic, arithmetic involving negative numbers, order of operations.	Quiz 1 3 <sup>rd</sup> Mar 11:59pm
2	4 Mar	Module 2 – Arithmetic (II)	Place value, arithmetic algorithms, mental arithmetic (+/*)	Quiz 2 10 <sup>th</sup> Mar 11:59pm
3	11 Mar	Module 3 – Arithmetic (III)	Mental arithmetic (-/+ non- decimal base systems, divisibility rules, modular arithmetic	Quiz 3 17 <sup>th</sup> Mar 11:59pm
4	18 Mar	Module 4 – Fractions (I)	Factors and multiples, fractions (intro, equivalent, simplification, improper/proper/mixed), addition and subtraction of fractions	Quiz 4 24 <sup>th</sup> Mar 11:59pm
5	25 Mar	Module 5 – Fractions (II) & Decimals (I)	Multiplication and division of fractions, word problems. Place value, converting dec. to fractions /fractions to decimals., recurring decimal notation, ordering, addition, and subtraction of decimals.	Quiz 5 31 <sup>st</sup> Mar 11:59pm
6	1 Apr	Module 6 – Decimals (II) & Percentages	Multiplication and division of decimals, decimal places. Percentages, unitary method.	Quiz 6 7 <sup>th</sup> Apr 11:59pm
7	8 Apr	<b>Test A (Modules 1 to 6)</b>	<b>No tutorial</b>	Test A during lecture
<b>Recess</b>				
<b>Recess</b>				
8	29 Apr	Module 7 – Measurement (I)	Calculator use, scientific notation, significant figures, SI units, unit prefixes, basic unit conversion, area, and volume unit conversion	Quiz 7 5 <sup>th</sup> May 11:59pm
9	6 May	Module 8 – Measurement (II)	Time unit conversion, rate unit conversion, ratio, scale measurement.	Quiz 8 12 <sup>th</sup> May 11:59pm
10	13 May	Module 9 – Statistics (I)	Types of data, presentation of data, measures of central tendency.	Quiz 9 19 <sup>th</sup> May 11:59pm
11	20 May	Module 10 – Statistics (II)	Measures of dispersion, S.D. on the calculator, normal distribution, z-scores.	Quiz 10 26 <sup>th</sup> May 11:59pm
12	27 May	Module 11 – Problem Solving	Basic algebra, substitution, operations with basic algebra, solving equations, problem solving.	Quiz 11 2 <sup>nd</sup> Jun 11:59pm
13	3 Jun	<b>Test B (Modules 7 to 11)</b>	<b>No tutorial</b>	Test B during lecture
<b>Examination Period</b>				
<b>Examination Period</b>				

# ASSESSMENTS

This course has 3 assessments. Each assessment is described in more detail in the sections below.

	Assessment Name	Due Date	Involvement	Weighting	Learning Outcomes
1	Quizzes	Sundays 11:59pm Weeks 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12	Individual	30%	1, 2, 3, 4
2	Test A	During lecture in week 7	Individual	35%	1, 2, 3, 4
3	Test B	During lecture in week 13	Individual	35%	1, 2, 3, 4

**Late Submissions** The mark for an assessment item submitted after the designated time on the due date, without an approved extension of time, will be reduced by 5% of the possible maximum mark for that assessment item for each day or part day that the assessment item is late. Note: this applies equally to week and weekend days.

## Assessment 1 - Quizzes

<b>Assessment Type</b>	Quiz
<b>Description</b>	11 weekly quizzes with a time limit of 12 minutes each. Only the marks from the best 10 quizzes are counted.
<b>Weighting</b>	30%
<b>Due Date</b>	Sundays 11:59pm Weeks 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12
<b>Submission Method</b>	Online
<b>Assessment Criteria</b>	Correct answers
<b>Return Method</b>	Online
<b>Feedback Provided</b>	Feedback will be provided via quiz mark redemption, tutorials, maths drop-ins

## Assessment 2 - Test A

<b>Assessment Type</b>	In Term Test
<b>Description</b>	Examination covering Modules 1 to 6 – Calculators are <b>not</b> allowed.
<b>Weighting</b>	35%
<b>Due Date</b>	During lecture in week 7
<b>Submission Method</b>	During lecture in week 7
<b>Assessment Criteria</b>	Correctness of answer. The marking scheme will have a strong emphasis on the problem-solving technique. Clearly written solutions showing all steps in the working-out will attract the highest marks.
<b>Return Method</b>	During tutorial
<b>Feedback Provided</b>	Feedback will be provided on exam paper and during lectures and tutorials

## Assessment 3 - Test B

<b>Assessment Type</b>	In Term Test
<b>Description</b>	Examination covering Modules 7 to 11 – Non-programmable scientific calculators <b>are</b> allowed.
<b>Weighting</b>	35%
<b>Due Date</b>	During lecture in week 13
<b>Submission Method</b>	During lecture in week 13
<b>Assessment Criteria</b>	Correctness of answer. The marking scheme will have a strong emphasis on the problem-solving technique. Clearly written solutions showing all steps in the working-out will attract the highest marks.
<b>Return Method</b>	Upon request
<b>Feedback Provided</b>	Feedback will be provided upon request

# ADDITIONAL INFORMATION

## Grading Scheme

This course is graded as follows:

Range of Marks	Grade	Description
85-100	High Distinction (HD)	Outstanding standard indicating comprehensive knowledge and understanding of the relevant materials; demonstration of an outstanding level of academic achievement; mastery of skills*; and achievement of all assessment objectives.
75-84	Distinction (D)	Excellent standard indicating a very high level of knowledge and understanding of the relevant materials; demonstration of a very high level of academic ability; sound development of skills*; and achievement of all assessment objectives.
65-74	Credit (C)	Good standard indicating a high level of knowledge and understanding of the relevant materials; demonstration of a high level of academic achievement; reasonable development of skills*; and achievement of all learning outcomes.
50-64	Pass (P)	Satisfactory standard indicating an adequate knowledge and understanding of the relevant materials; demonstration of an adequate level of academic achievement; satisfactory development of skills*; and achievement of all learning outcomes.
0-49	Fail (FF)	Failure to satisfactorily achieve learning outcomes. If all compulsory course components are not completed the mark will be zero. A fail grade may also be awarded following disciplinary action.

## Communication Methods

**Email** is the principal form of communication at the university and within this course. Always use your student email (NUmail), rather than a private email address, and check this regularly. As Course Coordinator I will try to respond to your email within three (3) working days. I will not normally respond to emails over the weekends. Please be courteous in your email communication and in the online space.

**Canvas** is used to distribute course material, announcements and other information. It is also used for online quizzes and to allow students to track their individual progressive assessment results throughout the semester via Grades.

**Discussions forums** in Canvas can be used to ask questions about minor issues. Students are strongly encouraged to use these to communicate with each other, discuss issues relating to the course, and solve minor problems.

## Attendance and Engagement

In addition to face-to-face hours in class, out-of-class study and related work will require an additional commitment of up to 10 hours per week of reading, preparation, and study time over the semester. Students are required to spend on average 120-140 hours of effort (contact and non-contact hours including assessment) per semester per 10 unit course.

To maximise your learning opportunities, you should read all relevant material prior to attending class.

It is strongly recommended that you attend your classes every week. Our data shows that you will get better results if you attend class with your peers. If you do have to miss a class, you should catch up on any missed work by accessing lecture recordings if you are enrolled face-to-face. While online tutorials are recorded, on-campus tutorials are not, so you should view other resources available on your Canvas site and contact your course coordinator if you would like advice on how to best catch up on any material that was missed. **If you are unable to attend classes regularly you should reach out to your course coordinator as soon as possible to discuss ways that you can continue to engage with the learning material.**

A plan of regular revision throughout the semester is also strongly recommended to help you manage your time, consolidate information and retain that knowledge for the duration of

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the course and beyond.

Assessment items have been designed to reinforce and revise the course material, and ensure you are up to date with course content. You are required to submit all assessable items by the due dates unless prior arrangements have been made.

**Additional Contact Details**

If you have any questions about your course, please speak with your course coordinator, lecturer or tutor first. For general enquiries, please contact the Pathways and Academic Learning Support Centre Office or your Student Liaison Officer. Contact details for both the office and Student Liaison Officers can be found [here](#).

Yapug students can also contact your Indigenous Enabling Learning Advisor [Hannah Pipe](#) or your Program Convenor [Dan Collins](#).

**Adverse Circumstances**

The University acknowledges the right of students to seek consideration for the impact of allowable adverse circumstances that may affect their performance in assessment item(s). Applications for Adverse Circumstances must be lodged via the online Adverse Circumstances system for all individual assessment items worth 30% or greater **by 11:00pm on the day the assessment is due**. For assessment items less than 30%, you will need to contact your Course Coordinator by 11:00pm on the due date of the assessment item.

Before applying you must refer to the [Adverse Circumstances Affecting Assessment Items Procedure](#) and the [Adverse Circumstances Affecting Assessment Items Policy](#).

Please note that students must submit their adverse circumstances application via the online Adverse Circumstances system by 11:00pm on the due date of the assessment item, even if you are using a [Reasonable Adjustment Plan \(RAP\)](#) as your supporting documentation.

**Written Assessment Word Limits**

If this course includes written assessments, the word limit listed will include headings, sub-heading, in-text citations, quotes and referencing but does not include the list of references, appendices and footnotes. You will not receive a penalty for exceeding the word limit (there is a tolerance of up to 10%), but any work after the maximum word limit may not be included within the allocation of marks.

**Academic Misconduct**

All students are required to meet the academic integrity standards of the University. These standards reinforce the importance of integrity and honesty in an academic environment. Academic Integrity policies apply to all students of the University in all modes of study and in all locations. Please refer to the [Student Academic Integrity Policy](#).

**Oral Interviews (Vivas)**

As part of the evaluation process of any assessment item in this course an oral examination (viva) may be conducted. The purpose of the oral examination is to verify the authorship of the material submitted in response to the assessment task. The oral examination will be conducted in accordance with the principles set out in the [Oral Examination \(viva\) Procedure](#). In cases where the oral examination reveals the assessment item may not be the student's own work the case will be dealt with under the [Student Conduct Rule](#).

**Workplace Health and Safety Requirements**

There are no specific WH&S requirements for this course.

**Software**

Free Microsoft Office software is available to enrolled students [here](#) and includes 5 TB of free cloud storage with OneDrive.

**Timetable**

Your timetable for this course is available via the myUni Student Portal and can also be found [here](#).

**Course Evaluation**

Each year feedback is sought from students and other stakeholders about the courses offered in the University for the purposes of identifying areas of excellence and potential improvement.

**Important Policy Information**

The Help button in the Canvas Navigation menu contains helpful information for using the Learning Management System. Students should familiarise themselves with the [policies](#)

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[and procedures](#) that support a safe and respectful environment at the University.

*This course outline was approved by the Director, PALS. No alteration of this course outline is permitted without Director approval. If a change is approved, students will be notified and an amended course outline will be provided in the same manner as the original.*

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