USC

Course Outline

Code: TPP104
Title: Mathematics

Teaching Session: Semester 1
Year: 2019
Course Coordinator: Nicole McMullen Email: nmcmulle@usc.edu.au
Course Moderator: Dr Robert McDougall

Please go to the USC website for up to date information on the teaching sessions and campuses where this course is usually offered.

1. What is this course about?

1.1 Description

This course is designed to upgrade your mathematical skills for entry into academic programs at the University of the Sunshine Coast. It has been specifically designed to be inclusive of those who may not have undertaken senior high school mathematics, or for those who may wish to refresh knowledge and understanding of the discipline. This course sets out to nurture a growth mindset for students around basic mathematical concepts. The flexible teaching environment allows for student's concerns around the course concepts to be voiced, questions to be asked and confidence to be built.

1.2 Course topics

You will be learning: use of a scientific calculator; indices; order of operations; fractions, ratios and percentages; scientific notation and significant figures; measurement; co-ordinate geometry; introductory algebra; quadratics; Pythagoras' theorem; trigonometry; logarithms; functions and their graphs; right-angle trigonometry; plane geometry.

2. What level is this course?

100 level Introductory - Discipline knowledge and skills at foundational level, broad application of knowledge and skills in familiar contexts and with support. Normally associated with the first full-time year of an undergraduate program

3. What is the unit value of this course?

12 units

This course is weighted as 12 units, however it cannot be counted for credit towards an award-bearing program. Please note that this course is not sufficient for entry into engineering programs or mathematics and physics courses. TPP115 is a more suitable course for students who possess basic mathematical skills and wish to meet the (Queensland) Mathematics B prerequisite requirement for entry into programs and courses at the University of the Sunshine Coast.

4. How does this course contribute to my learning?

Specific Learning Outcomes On successful completion of this course, you should be able to:	**Assessment tasks** You will be assessed on the learning outcomes in task/s:	**Graduate Qualities or Professional Standards mapping** Completing these tasks successfully will contribute to you becoming:
Display understanding of concepts developed in the course.	Assignment Mid-semester test Final examination	Empowered, knowledgeable.
Perform routine calculations using set techniques illustrated in the course.	Assignment Mid-semester test Final examination	Empowered, knowledgeable.
Employ mathematical concepts, techniques and reasoning to interpret, analyse and solve applied problems.	Assignment Mid-semester test Final examination	Empowered, knowledgeable,
Use a scientific calculator effectively to solve problems	Assignment Mid-semester test Final examination	Empowered. Knowledgeable.
Communicate effectively using reasoning, mathematical conventions and symbols.	Assignment Mid-semester test Final examination	Empowered, Knowledgeable,

5. Am I eligible to enrol in this course?

Refer to the USC Glossary of terms for definitions of "pre-requisites, co-requisites and anti-requisites".

5.1 Enrolment restrictions

Students must be enrolled in TP000 or XE001

5.2 Pre-requisites

Nil

5.3 Co-requisites

Nil

5.4 Anti-requisites

Nil

5.5 Specific assumed prior knowledge and skills (where applicable)

Nil

6. How am I going to be assessed?

6.1 Grading scale

Standard – High Distinction (HD), Distinction (DN), Credit (CR), Pass (PS), Fail (FL)

6.2 Details of early feedback on progress

The first assessment item (due at the end of week 4) will provide feedback on course progress. Weekly tutorial sheets will also allow you to track your progression through the concepts covered in this course.

6.3 Assessment tasks

Task No.	Assessment Tasks	Individual or Group	Weighting %	What is the duration / length?	When should I submit?	Where should I submit it?
1	Assignment	Individual	15	Over first 4 weeks	End of Week 4	Blackboard or in the TPP assignment box with a cover sheet
2	Mid-semester Exam	Individual	35	1.5 hours	Week 8	Conducted during tutorials
3	Final Examination	Individual	50	1.5 hours	Week 13	Conducted during tutorials
			100%			

Assessment Task 1: Assignment

Goal:	You will develop reliable calculator and problem-solving skills for mathematics and its applications as they are needed for arithmetic, fractions, percentages, ratio and proportion and significant figures.
Product:	A take home assignment covering the principles of basic arithmetic, fractions, numeracy skills, percentage and conversions (or materials covered in weeks 1 to 4).
Format:	Word-processed file submitted on Blackboard or printed copy handed into the TPP assignment box with a Faculty cover sheet
Criteria:	Marks are awarded for (i) clarity of thinking through development of problem solutions (ii) use of reasoning to reach a solution to a problem (iii) accuracy of solutions through appropriate use of rounding and significant figures (iv) clarity in communicating the ideas underpinning a problem solution, including correct use of mathematical symbols and conventions

Assessment Task 2: Mid-semester Test

Goal:	To demonstrate conceptual understanding and skills development in solving routine problems in topics covered in the first six weeks of the course. To communicate clearly using reasoning and appropriate mathematical conventions and symbols.
Product:	This task is a summative test covering topics from Weeks 1 to 6 and will be conducted during lectures/tutorials in Week 8 of the semester. The test will be comprised of two sections. Part A will require students to answer a selection of multiple-choice questions and Part B is short answer and will require students to demonstrate a deeper understanding of the mathematical questions by recording all working to get to the answer.
Format:	The test is approximately one and a half hours duration. It will be conducted during lectures and/or tutorials as announced on Blackboard. Students should ensure that they are available during their enrolled lecture and tutorial times.
Criteria:	You will be assessed on clarity of communication, as well as mathematical skills and concepts displayed. Specific expectations: • Use of reasoning to reach a solution to a problem. • Explanation of the solution process with appropriate use of mathematical language, symbols and conventions. • Suitable use of diagrams (where appropriate) to support the solution process. • Accuracy of the solution to a problem. • Appropriate format of a solution.

Assessment Task 3: Final Examination

Goal:	To demonstrate conceptual understanding and skills development in solving routine problems in topics covered in the entire course. To communicate clearly using reasoning and appropriate mathematical conventions and symbols.
Product:	This task is an examination of all the materials covered in the course. As with the first test, this one is comprised of a short answer section to demonstrate problem solving skills (showing all working) and the selection of answers to multiple-choice questions.
Format:	A test of approximately one and a half hours duration. It will be conducted during lectures and/or tutorials as announced on Blackboard. Students should ensure that they are available during their enrolled lecture and tutorial times.
Criteria:	You will be assessed on clarity of communication, as well as mathematical skills and concepts displayed. Specific expectations: • Use of reasoning to reach a solution to a problem. • Explanation of the solution process with appropriate use of mathematical language, symbols and conventions. • Suitable use of diagrams (where appropriate) to support the solution process. • Accuracy of the solution to a problem. • Appropriate format of a solution.

7. What are the course activities?

7.1 Directed study hours

The directed study hours listed here are a portion of the workload for this course. A 12 unit course will have total of 150 learning hours which will include directed study hours (including online if required), self-directed learning and completion of assessable tasks. Directed study hours may vary by location. Student workload is calculated at 12.5 learning hours per one unit.

Location: Specific Campus(es) or online:	**Directed study hours for location:**
Sippy Downs Fraser Coast Gympie Caboolture	Lectures: 13 x 1 hr per week; Tutorials: 13 x 2 hrs per week

7.2 Course content

Week # / Module #	**What key concepts / content will I learn?**
1	Calculator skills; Indices;
2	Order of operations; Fractions; Percentages
3	Ratio and proportion; Significant figures and rounding;
4	Scientific notation; Measurement
5	Introduction to Algebra
6	Geometry
7	Pythagoras' theorem; Trigonometry
8	Co-ordinate geometry and graphing; Mid-semester Test
9	Linear relationships
10	Quadratic relationships
11	Logarithms
12	Revision
13	Final examination

Please note that the course activities may be subject to variation.

8. What resources do I need to undertake this course

Please note that course information, including specific information of recommended readings, learning activities, resources, weekly readings, etc. are available on the course Blackboard site. Please log in as soon as possible.

8.1 Prescribed text(s)

Please note that you need to have regular access to the resource(s) listed below as they are required:

Author	Year	Title	Publisher
TPP	2018	TPP104 Course Reader	USC

8.2 Specific requirements

It is recommended that you possess a good quality scientific hand-calculator. You will not require a graphics, programmable or CAS calculator for this course and these are not recommended. It is your responsibility to learn to use your calculator properly. The Casio fx-82AU is recommended and will be demonstrated in this course.

9. Risk management

Health and safety risks for this course have been assessed as low.

It is your responsibility as a student to review course material, search online, discuss with lecturers and peers, and understand the health and safety risks associated with your specific course of study. It is also your responsibility to familiarise yourself with the University's general health and safety principles by reviewing the online Health Safety and Wellbeing training module for students, and following the instructions of the University staff.

10. What administrative information is relevant to this course?

10.1 Assessment: Academic Integrity

Academic integrity is the ethical standard of university participation. It ensures that students graduate as a result of proving they are competent in their discipline. This is integral in maintaining the value of academic qualifications. Each industry has expectations and standards of the skills and knowledge within that discipline and these are reflected in assessment.

Academic integrity means that you do not engage in any activity that is considered to be academic fraud; including plagiarism, collusion or outsourcing any part of any assessment item to any other person. You are expected to be honest and ethical by completing all work yourself and indicating in your work which ideas and information were developed by you and which were taken from others. You cannot provide your assessment work to others. You are also expected to provide evidence of wide and critical reading, usually by using appropriate academic references.

In order to minimise incidents of academic fraud, this course may require that some of its assessment tasks, when submitted to Blackboard, are electronically checked through SafeAssign. This software allows for text comparisons to be made between your submitted assessment item and all other work that SafeAssign has access to.

10.2 Assessment: Additional requirements

Eligibility for Supplementary Assessment

Your eligibility for supplementary assessment in a course is dependent of the following conditions applying:

a) The final mark is in the percentage range 47% to 49.4%
b) The course is graded using the Standard Grading scale
c) You have not failed an assessment task in the course due to academic misconduct

10.3 Assessment: Submission penalties

Late submission of assessment tasks will be penalised at the following maximum rate:

- 5% (of the assessment task's identified value) per day for the first two days from the date identified as the due date for the assessment task.
- 10% (of the assessment task's identified value) for the third day
- 20% (of the assessment task's identified value) for the fourth day and subsequent days up to and including seven days from the date identified as the due date for the assessment task.
- A result of zero is awarded for an assessment task submitted after seven days from the date identified as the due date for the assessment task.

Weekdays and weekends are included in the calculation of days late.
To request an extension, you must contact your Course Coordinator and supply the required documentation to negotiate an outcome.

10.4 Study help

In the first instance, you should contact your tutor, then the Course Coordinator. Additional assistance is provided to all students through Academic Skills Advisers. To book an appointment or find a drop-in session go to Student Hub.

Contact Student Central for further assistance: +61 7 5430 2890 or studentcentral@usc.edu.au

10.5 Links to relevant University policy and procedures

For more information on Academic Learning & Teaching categories including:

- Assessment: Courses and Coursework Programs
- Review of Assessment and Final Grades
- Supplementary Assessment
- Administration of Central Examinations
- Deferred Examinations
- Student Academic Misconduct
- Students with a Disability

Visit the USC website:
http://www.usc.edu.au/explore/policies-and-procedures#academic-learning-and-teaching

10.6 General Enquiries

In person:

- **USC Sunshine Coast** - Student Central, Ground Floor, Building C, 90 Sippy Downs Drive, Sippy Downs
- **USC South Bank** - Student Central, Building A4 (SW1), 52 Merivale Street, South Brisbane
- **USC Gympie** - Student Central, 71 Cartwright Road, Gympie
- **USC Fraser Coast -** Student Central, Student Central, Building A, 161 Old Maryborough Rd, Hervey Bay
- **USC Caboolture -** Student Central, Level 1 Building J, Cnr Manley and Tallon Street, Caboolture

Tel: +61 7 5430 2890

Email: studentcentral@usc.edu.au