



Queensland, Australia

Course Code:	BUS104A
Course Name:	Mathematics
Semester:	Semester 1, 2016
Program:	Certificate IV Tertiary Preparation Program
Credit Points:	10
Course Coordinator:	Rebecca Fox
Document modified:	11 Dec 2015 12:05:03

Teaching Team

Your lecturer/tutor can be contacted via the email system on the portal.	
Name	Email
Gordon Cameron	gordon.cameron@staff.griffithcollege.edu.au
Rebecca Fox	rebecca.fox@staff.griffithcollege.edu.au

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 "myTimetable" link.

Prerequisites

There are no prerequisites for this course

Brief Course Description

This course introduces students to some basic elements of mathematics that are encountered in business. Topics relate to the knowledge required for the application and solution of basic business related problems. Within this framework, students will learn basic mathematical techniques in algebra, geometry, optimisation, growth and decay, and finance. The course provides students with the fundamental skills necessary for further studies in areas such as commerce, information technology, engineering and science.

Rationale

As a graduate professional, students are likely to encounter a variety of situations in their occupation that require some basic mathematical knowledge and skill. If students are continuing studies or employment in the fields of engineering, science, commerce and information technology, mathematical skills are a basic requirement.

Aims

The aim of this course is to strengthen students understanding of, and skill in, basic mathematical procedures. The objectives include reinforcing their knowledge of fundamental algebra, graphical techniques and solution procedures, and enhancing their skills in solving problems of an applied nature.

Learning Outcomes

On successful completion of this course, you should be able to:

1. Perform basic arithmetic calculations.
2. Perform basic algebraic operations and calculations including factorising and simplifying algebraic expressions and solving equations.

3. Perform calculations involving functions and draw their graphs.
4. Solve problems involving sequences, series, and growth and decay.
5. Solve financial problems.
6. Perform basic differentiation and solve basic differential calculus problems.
7. Perform simple calculations involving set notation and techniques.

Texts and Supporting Materials

The resource used in BUS104A is a workbook prepared specifically for the course. The workbook covers the essential content for the course and should be sufficient material for you to successfully complete the course. If you require additional material to assist you in your studies you can refer to the list of other references provided below.

Required Resources:

- Tretow-Loof, L & Wildermonth, B.R. (2014). *Workbook: BUS104A Mathematics (Rev 16 Sep)*.
- basic non-programmable scientific calculator.

Other Resources:

You may benefit from referring to and reading the following sources as required:

- Bailey, K. & Steege, R. (1997). *Intermediate Algebra, Schaum's Outlines Series*. Sydney: McGraw Hill.
- Bello, I. & Britton, J.R. (2001). *Topics in Contemporary Mathematics (7th Ed.)*. Boston: Houghton Mifflin.
- Cooper, P. (2003). *Queensland Mathematics 11/12B (2nd Ed.)*. Sydney: McGraw Hill.
- Croucher, J.S. (1998). *Introductory Mathematics and Statistics for Business (3rd Ed.)*. Sydney: McGraw Hill.
- Dobson, A. & Stokoe, J. (n.d.). *Self-Paced Introductory Mathematics*.
- Haeussler, E.F. Jnr., & Paul, R.S. (2002). *Introductory Mathematical Analysis (10th Ed.)*. New Jersey: Prentice-Hall.
- Mustoe, B. (1998). *Foundation Mathematics*. Brisbane: John Wiley & Sons.
- Shannon, J. (1995). *Mathematics for Business, Economics and Finance*. Brisbane: John Wiley & Sons.
- Waxman, P. (1998). *Business Mathematics & Statistics (4th Ed.)*. Sydney: Prentice Hall.

Organisation and Teaching Strategies

The course material may be covered through the use of lectures, texts, videos, practical exercises, self directed or peer assisted learning. Course delivery involves four (4) formal contact hours per week incorporating the presentation of theory with practical activities which are interwoven throughout classes. You are also provided with individual contact with your teacher through consultation times.

In class times you will be introduced to the essential areas of the course content. You will receive information about, and explanations of, the principal topics that are important to achieving the learning objectives of the course. This will give you the opportunity to gain knowledge of important course content. You will be encouraged to be an active listener and to interact with your teacher by asking questions and contributing your ideas.

Your understanding of course content will be enhanced through the completion of activities which assist you with your learning and provide an opportunity for you to raise any questions or concerns you may have with understanding course material. When needed, your teacher will inform you of any forward preparation or requirements that you are expected to undertake for upcoming classes. It is important that you complete such tasks so that the following classes can maximise the use of the available time to enhance your learning.

During class time you will also have the opportunity to develop a range of skills that will support learning objectives and foster certain generic skills that are helpful to your professional development.

The course utilises a range of *web-based resources* that you need to access. Although the course utilises a Workbook that contains all course content, lecture notes are also available on the Griffith College portal for each week of semester. Links are provided to other resources that may help you in your learning activities. You should access the Griffith College portal regularly to stay up to date with course information.

Class Contact Summary

Attendance:

Your attendance in class will be marked twice during a four hour class. To receive full attendance, you must be present in the classroom on both occasions. Therefore, you are encouraged to attend all classes throughout the semester.

Actively Participate in Classes & Consultation Times:

You will greatly advance your chances of success in the course by fully using the contact time you have available with your teacher. The contact time provided in classes and consultation is for *your* benefit; it is your opportunity to have any questions about course content or requirements clarified.

Independent Learning:

You are expected to reinforce your learning from class time by undertaking sufficient *independent study*. For this 10 CP course, you will need to spend at least 10 hours per week in an activity that will help your learning and fulfil the course objectives. Thus, provided you have well utilised the 4 hours per week of formal contact, you would then complete at least 6 hours per week of independent study.

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].

Content Schedule

Classes are designed to progressively build your understanding of mathematical procedures. Early classes serve to establish the foundations: from them you will become familiar with fundamental principles and techniques. As you proceed through the semester, you should increasingly be able to apply foundation knowledge and develop your skills to solve more advanced problems.

Weekly Teaching Schedule

Week	Topic	Activity	Readings
1	Basics of Arithmetic	Class	Workbook Module 1
	Exercises in Basic Arithmetic	Class	
2	Basics of Algebra - Expressions, Operations, Exponents	Class	Workbook Module 2

	Exercises in Basic Algebra	Class	
	Problems Review – Basic Arithmetic	Class	Module 1 Exercises
3	Factorising, Rational Expressions and Radicals	Class	Workbook Module 3
	Exercises in Factorising, Rationals & Radicals	Class	
	Problems Review - Basic Algebra	Class	Module 2 Exercises
4	First and Second Degree Equations	Class	Workbook Module 4
	Exercises in First & Second Degree Equations	Class	
	Problems Review - Factorising, Rationals & Radicals	Class	Module 3 Exercises
5	Coordinate Geometry, Graphs of Functions, Equations of Lines and Distances of Points	Class	Workbook Module 5
	Exercises in Equations of Lines	Class	
	Problems Review – First and second Degree Equations	Class	Module 4 Exercises
6	Logarithms, Exponential Growth and Decay	Class	Workbook Module 6
	Exercises in Logs and Growth and Decay	Class	
	Problems Review - Graphing	Class	Module 5 Exercises
7	Finance - Simple & Compound Interest	Class	Workbook Module 7
	Exercises in Simple & Compound Interest	Class	
	Problems Review – Logarithm	Class	Module 6 Exercises
8	Finance - Annuities & Depreciation	Class	Workbook Module 8
	Exercises in Annuities & Depreciation	Class	
	Problems Review - Finance - Interest	Class	Module 7 Exercises
9	Calculus I – Limits, Derivatives by first principles	Class	Workbook Module 9
	Exercises in Limits	Class	
	Problems Review – Finance - Annuities & Depreciation	Class	Module 8 Exercises
10	Calculus II – Derivatives and Stationary Points	Class	Workbook Module 10
	Exercises in Derivatives	Class	
	Problems Review - Calculus I - Limits	Class	Module 9 Exercises
11	Calculus III – Applications of Calculus	Class	Workbook Module 11
	Exercises involving applications of Calculus.	Class	
	Problems Review – Calculus II - Derivatives	Class	Module 10 Exercises
	Quiz 3 Review	Class	
12	AP, GP Sequences and Sigma Notation	Class	Workbook Module 12
	Exercises in AP, GP & Sigma	Class	
	Problems Review – Calculus III – Applications of Calculus	Class	Module 11 Exercises
13	Mini - Test 2 Review	Class	
	Examination Procedures	Class	
	Exercises	Class	Workbook Module 1-12
	Course Review	Class	Workbook Module 1-12

Assessment

This section sets out the assessment requirements for this course.

Summary of Assessment

Item	Assessment Task	Weighting	Relevant Learning Outcomes	Due Date
1	PQ1	2%	1	2
2	PQ2	2%	2	3
3	PQ3	2%	2.	4

4	PQ4	2%	2	5
5	PQ5	2%	3	6
6	MT1	20%	1,2,3,7	7
7	MT2	15%	4,5,6	12
8	Assign 1	5%	3,4	8
9	Assign 2	10%	5	11
10	Final Exam	40%	1,2,3,4,5,6,7	14

Assessment Details

The **pop quizzes** (PQ1 - 5) are designed to assess your progress in understanding the fundamentals of mathematics and provide you with feedback on your capabilities. (Outcomes 1,2, and 4). The pop quizzes will be consist of questions from the previous week, requiring only 5 minutes to complete.

The **two mini tests** (MT1 - 2) assess your foundation knowledge and skills in algebraic and graphical techniques and application. It also acts as a focal point for you to plan and monitor your learning progress.

The **assignments** (Assign 1 and 2) assess your ability to apply the material taught in class in a practical application. You will be expected to apply the material taught in class to solve a practical problem. You will be expected to reflect and defend the approach taken and justify your outcomes. Both assignments are individual assignments.

The **end-of-semester final examination** (Final) assesses your knowledge and applied skills in all of the topic areas covered in this course, including algebra, simultaneous linear equations, optimisation, logarithms, finance and calculus. It provides you with a culmination point to encourage you to plan your effort and apply yourself consistently and requires you to review and apply material covered in the semester.

Note: Students who are continuing studies in Advanced Mathematics (MTH001) must achieve a Pass (P) grade or higher in order to satisfy the pre-requisite requirement.

Submission and Return of Assessment Items

Normally you will be able to access your results within fourteen [14] days of the due date for submission of the assignment. ALL assessment submitted in this course must be retained by Griffith College as directed by the Australian Skills Quality Authority (ASQA) made under section 28 (1) of the National Vocational Education and Training Regulator Act 2011.

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.

Extensions

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 Medical Certificate]. Please refer to the Griffith College website - Policy Library - for guidelines regarding extensions and deferred assessment.

Assessment Feedback

Marks awarded for assessment items will also be available on the on-line grades system on the Student Website within fourteen [14] days of the due date.

Generic Skills

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:

Generic Skills	Taught	Practised	Assessed

Written Communication		Yes	
Oral Communication		Yes	
Information Literacy			
Secondary Research			
Critical and Innovative Thinking			
Academic Integrity	Yes	Yes	
Self Directed Learning			
Team Work		Yes	
Cultural Intelligence			
English Language Proficiency			

Additional Course Generic Skills

Additional Course Information

Additional mathematical assistance, other than your normal scheduled classes, is usually provided for you should you feel in need of extra help. You will be provided with information about this service at the beginning of the semester.

In addition to formal contact hours, you are provided with extra support through individual consultation with teaching staff, tutorials in English language, and self-access computer laboratories.

Teacher and Course Evaluations

Most students say they are very satisfied with the course and the teaching. Students have also highlighted the value and importance of the course for their future studies.

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 on the Griffith College portal whenever these are available.

Students indicated that they are satisfied with the teaching in the course. Students also reported that they appreciate the quality of the teaching in the course as they need to be confident with maths concepts for their future studies.

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.

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 Academic Integrity Policy on the Griffith College website – Policy Library.

Risk Assessment Statement

There are no out of the ordinary risks associated with this course.

Copyright © - Griffith College

Note: For all Diploma level programs, Griffith College acknowledges content derived from Griffith University.