Erindale College

UNIT OUTLINE

MATHEMATICS, SCIENCE AND IT ACADEMY

SEMESTER 1 2019

Course Title	Contemporary Mathematics	Course Code	1034
Unit Title	Unit 3: Contemporary Mathematics	Unit Code	10313
Semester Unit	Unit 3: Contemporary Mathematics	Unit Value	1.0
Term 1 Unit	Unit 3a: Contemporary Mathematics 10318	Unit Value	0.5
Term 2 Unit	Unit 3b: Contemporary Mathematics 10314	Unit Value	0.5

Unit Description

Students with study numeracy skills for living (for example, budgeting and tenancy, mathematics of transport, and travel).

Unit Goals

By the end of this unit, students:

- demonstrate the basics of personal financial management and budgets
- develop knowledge of a variety of accommodation types including associated costs
- develop a knowledge of the issues and costs with maintaining and using a motor vehicle

Content Descriptions

- interprets and comprehends a range of everyday mathematical information that is embedded in familiar and routine texts
- interprets and comprehends:
    - whole numbers and familiar or routine fractions, decimals and percentages (CMA03)
    - familiar and routine measurement (for example, dates and time, including 24 hour times, 2D and 3D shapes, including pyramids and cylinders, length, mass, volume/capacity, temperature and simple area measures, maps and plans
- draws on a combination of hands-on, in-context materials, personal experience, mathematical and other prior knowledge to:
    - select appropriate methods of solution from a limited range of mathematical processes (CMA06)
    - use developing estimation, and other assessment skills, to check and reflect on the outcome and its appropriateness to the context and task
- uses a blend of personal 'in-the-head' methods and formal pen and paper methods to calculate and uses calculator/technological processes and tools to undertake the problem solving process
- selects and uses appropriate tools, hand-held devices, computers and technological processes, e.g. uses a tape measure to measure the dimensions of a window in mm or creates a personal weekly budget in a spreadsheet
- calculates with whole numbers and everyday or routine fractions, decimals and percentages, and where appropriate converting between equivalent forms (includes dividing by small whole numbers only, with division by decimal values and long division worked out on a calculator; calculations with simple fractions to be multiplication of whole number values only, e.g. 20% or 1/5 of $250 (CMA10)

- uses and applies order of arithmetical operations to solve multi-step calculations
- uses and applies rates in familiar or routine situations, e.g. km/hr, $/kg or $/m
- perform measurements, estimates and calculations using for example, 2D and 3D shapes, constructing common 3D shapes, length, perimeter, mass, capacity/volume, time, temperature and simple area (for rectangular areas only, using A = L x W, or estimates area of a non-rectangular shape by counting squares), distance, direction, coordinates, simple scales, labels, symbols and keys to read and use everyday maps and plans
- converts between routine metric units by applying understanding of common prefixes, e.g. milli, centi or kilo
- collects and organises familiar data and constructs tables, graphs and charts, manually or with spreadsheets, using simple and familiar or routine scales and axes
- uses a combination of both informal and formal written mathematical language and symbols and general language to document and report on the mathematical and problem solving process and results
- uses a combination of both informal and formal oral mathematical and general language to present and discuss the mathematical and problem solving process and result
- uses a combination of both formal and informal symbolism, diagrams, graphs and conventions relevant to the mathematical knowledge of the level, e.g.
    - 1/100, 12.5%
    - km/hr, $/kg
    - 1.25 m = 1250 mm

Elective 1: Mathematics of Transport

Topics may include:

- cost of purchasing a car and motorbike
- cost of maintaining a car and motorbike
- documenting use of work vehicle, public transport
- motion, including accelerating, speed, braking distances
- blood alcohol level calculations
- transport statistics e.g. road accidents, drink driving etc.

Elective 2: Mathematics of Travel

Topics may include:

- holiday planning – domestic and international
- costing travel
- itineraries
- modes of travel e.g. boat, plane, hire car
- reading timetables for public transport
- finances associated with travel (transport, taxes, accommodation)
- distances
- scale and legends
- maps and charts
- 24h time, time zones and money conversions

MATERIALS REQUIRED: Work book, pens, pencils, eraser, ruler and calculator are **compulsory requirements** of this course.

ASSESSMENT

TASK	DUE DATE	WEIGHTING
Test 1	Exam Week Term 1	25%
Assignment 1	Week 10	25%
Test 2	Exam Week Term 2	25%
Assignment 2	Week 17	25%

Specific Entry & Exit Requirements for Term Units

It is possible to enter this course at Term 2. Entry into this course for Term 2 is by negotiation with the Executive teacher.

To exit at Term 1 you must complete Test 1 and Assignment 1.

ASSESSMENT CRITERIA FOR ASSESSMENT AND REPORTING OF STUDENT ACHIEVEMENT

Technology, its selection and appropriate use, is an integral part of all the following criteria. Students will be assessed on the degree to which they demonstrate:

- Knowledge – knowledge of mathematical facts, techniques and formulae presented in the unit
- Application – appropriate selection and application of mathematical skills in mathematical modelling and problem solving
- Communication – interpretation and communication of mathematical ideas in a form appropriate for a given use or audience.

Unit Grades for A Courses

Achievement Standards for A Courses

Technology, its selection and appropriate use, is an integral part of all the following descriptors.

	Knowledge	Application	Communication
A student who achieves the grade **A**	Demonstrates a very high level of proficiency in the use of facts, techniques and formulae.	Selects and applies appropriate techniques to solve practical problems.	Is consistently accurate and appropriate in presentation of mathematical ideas.
A student who achieves the grade **B**	Demonstrates a high level of proficiency in the use of facts, techniques and formulae.	Selects and generally applies appropriate techniques to solve practical problems.	Is generally accurate and appropriate in presentation of mathematical ideas.
A student who achieves the grade **C**	Demonstrates some proficiency in the use of facts, techniques and formulae.	With direction, selects and applies techniques to solve practical problems.	Presents some mathematical ideas.
A student who achieves the grade **D**	Demonstrates limited use of facts, techniques and formulae.	Solves some practical problems.	Presents some mathematical ideas with guidance.
A student who achieves the grade **E**	Demonstrates very limited use of facts, techniques and formulae.	With guidance, solves some practical problems.	Presents some mathematical ideas with guidance.

Teachers will consider, when allocating grades, the degree to which students demonstrate their ability to complete and submit tasks within a specified time frame.

ATTENDANCE AND PARTICIPATION

Students are expected to submit all assessment items and attend all classes, participate in a positive manner and seek support whenever it is required. Excursions, simulations and presentations by visitors (including lunchtime) may form part of classwork. It is your responsibility to catch up on missed work when absent from class.

Any student whose attendance falls below the 90% of the scheduled classes/contact time and has not provided substantial documentary evidence to cover the absence will be awarded a V grade. This means that 4 unexplained absences in a term or 8 unexplained absences in a semester could mean that a V grade may be awarded. However, the Principal has the right to exercise discretion in special circumstances if satisfactory documentation is supplied.

LATE SUBMISSION OF WORK

Students are encouraged to submit work on time, as it is a valuable organisational skill. Students are also encouraged to complete work even if it is late, as there are educational benefits in doing so.

Late work will receive a penalty of 5% (of possible marks) per calendar day late, unless an extension is granted by the class teacher prior to the deadline. This means that 5% is taken off the possible marks that could have been achieved eg. If a student achieved a score of 75/100, and the item is one day late, then five marks (5% of 100) would be taken from 75, which leaves the score as 70/100. 'Per calendar day late' means each day late whether it be a weekend or public holiday. Items due on any date must be submitted to the class teacher, faculty staff room, or front office at the college by 3.30pm on that day. After 3.30pm, the item will attract the late penalty. Submission of work on a weekend or public holiday is not acceptable. If you do not submit your work to your class teacher, make sure that it is signed and dated by either another member of staff in the faculty staffroom, or a member of the front office staff.

Achievement in Accredited Courses is reported to the Board of Senior Secondary Studies and students with a Grade A-E. Late work submitted without approval will have an impact on the grade awarded to a student.

No work will be accepted after marked work has been returned, or accepted after the unit has completed. Computer and/or printer failure will not be accepted as a valid reason for late work. Make sure you backup, keep hard copies and rough notes.

Unless prior approval is granted, any student who fails to submit assessment tasks worth in total 70% or more of the assessment for the unit, will be considered to be unassessable and will receive a V grade. The Principal has the right to exercise discretion in the application of the late penalty in special circumstances where satisfactory documentation is supplied.

CHEATING AND DISHONEST PRACTICE

The integrity of the College's assessment system relies upon all involved acting in accordance with the highest standards of honesty and fairness. Any departure from such standards will be viewed very seriously."

Accordingly:

- Plagiarism - claiming authorship of someone else's work (intentionally or otherwise) - is a serious misdemeanour, and attracts severe penalties.
- Students are required to acknowledge the source of all material that is incorporated into their own work.
- Students may not submit the same item for assessment in more than one unit, unless specific agreement has been reached with the class teacher.

MODERATION
Throughout the semester, moderation in the form of common marking schemes, cross marking and joint marking occurs across all units in the Moderation Group to ensure comparability of standards. Moderation is a process whereby student's work is compared so that student performance can be graded fairly and consistently. Moderation takes some time, and so students may not receive their work back until ACT wide moderation of grades across all colleges has occurred. Small Group Moderation is carried out in courses with small class sizes.

RIGHT TO APPEAL
You can appeal against your assessment if you feel that the result you obtained is not fair. You should first talk to your class teacher, and if you are not satisfied with the explanation you must discuss the situation with the Executive Teacher of the faculty concerned. If you still do not feel that your result is fair you should talk to the Deputy Principal Programs for further advice on the 'appeal process'.

Executive Teacher: Ruth Edge **Teacher: Terry Brady**

Date: 1 March 2019