

UNIT OUTLINE

Year: 12, 2021

Accreditation: Tertiary

Timetable Period: Semester 1, 2021

Classroom Teachers: Roisin Boadle, Ross Burdon and Aruna Williams

Executive Teacher: Debbie O'Brien

Course Title	Mathematical Applications Integrating Australian Curriculum	Course Code	1404
Unit Title	Unit 3: Mathematical Applications	Unit Code	14610
Semester Unit	Unit 3: Mathematical Applications	Unit Value	1.0
Term 1 Unit	Unit3a: Mathematical Applications	Unit Value	0.5
Term 2 Unit:	Unit3b: Mathematical Applications	Unit Value	0.5

Specific Unit Goals:

The specific goals of this unit are for students to:

- understand the concepts and techniques in bivariate data analysis, growth and decay in sequences, and graphs and networks
- apply reasoning skills and solve practical problems in bivariate data analysis, growth and decay in sequences, and graphs and networks
- implement the statistical investigation process in contexts requiring the analysis of bivariate data
- communicate their arguments and strategies, when solving mathematical and statistical problems, using appropriate mathematical or statistical language
- interpret mathematical and statistical information, and ascertain the reasonableness of their solutions to problems and their answers to statistical questions
- choose and use technology appropriately and efficiently.

Content Summary:

Further elaboration on the content of this unit is available at:

http://www.bsss.act.edu.au/_data/assets/word_doc/0004/471127/AC_Mathematical_Applications_14-22_Updated.docx

Topic 1: Bivariate data analysis	Topic 2: Growth and decay in sequences	Topic 3: Graphs and Networks
Statistical investigation process	Arithmetic Sequence	Definition of a graph and associate terminology
Identifying and describing associations between two categorical /numerical variables	Geometric Sequence	Planar graphs
Association and causation	Sequences generated by first order linear recurrence relations	Paths and cycles
Data investigation process		

Cost of Materials: A graphic calculator is required for this course. These are available for hire from the school for a cost of \$100 consisting of a \$50 hire fee and a \$50 refundable deposit on return of the calculator at the end of the year. If students wish to purchase their own calculator, we recommend the CASIO fxCG20AU (or the newer model CASIO fxCG50AU) as this is the calculator our teachers are familiar with.

Assessment:

TASK	DUE DATE	WEIGHTING
Exam 1	Exam Week Term 1	30%
Assignment 1	Week 6	20%
Exam 2	Exam Week Term 2	30%
Assignment 2	Week 15	20%

SPECIFIC ENTRY & EXIT REQUIREMENTS FOR TERM UNITS:

This is a Semester Unit; students wishing to enter or exit after the end of term must have the change approved by the Academy Executive Leader and need to complete 50% of the assessment.

ASSESSMENT CRITERIA FOR ASSESSMENT AND REPORTING OF STUDENT ACHIEVEMENT

Students will be assessed on the degree to which they demonstrate:

- an ability to respond critically to texts and logically justify viewpoint
- an ability to evaluate and synthesise material to make meaning
- imagination and originality
- competent and effective use of language for a range of purposes and audiences
- control of appropriate medium.

Attendance and Participation

It is expected that students will attend and participate in all scheduled classes/contact time/structured learning activities for the units in which they are enrolled unless there is due cause and adequate documentary evidence is provided. Any student whose attendance falls below 90% of the scheduled classes/contact time or 90% participation in structured learning activities in a unit, without having due cause with adequate documentary evidence will be deemed to have voided the unit. However, the principal has the right to exercise discretion in special circumstances if satisfactory documentation is supplied.

Completion of Assessment Items

Students are expected to substantially complete and submit all assessment items. Exemption from an item and/or alternative assessment without penalty is available to students providing adequate documentary evidence. To meet the minimum assessment requirements of a unit, a student must substantially complete and submit at least 70% of the total assessment. However, the principal has the right to exercise discretion in the award of a grade or score in special circumstances where satisfactory documentation is supplied.

Late Submission of Assessment Items

Students are encouraged to submit work on time as this is a valuable organisational skill. Students are also encouraged to complete work even if it is late as there are educational benefits in so doing. The following policy is to ensure equity for all students:

- All assessment tasks are expected to be submitted by the specified due date
- Where marks are awarded for assessment tasks, a late penalty will apply unless an extension is granted. The penalty for late submission is 5% of possible marks per calendar day late, including weekends and public holidays, until a notional zero is reached. If an item is more than 7 days late, it receives the notional zero. Submission on weekends or public holidays is not acceptable. Calculation of a notional zero is based on items submitted on time or with an approved extension (Refer to Notional Zeros)
- Where marks are not awarded, and a grade only is given for an assessment task, teachers will take into account the extent to which students have demonstrated their ability to complete and submit the task by the due date (taking into account any extensions granted) in awarding the grade

- Unless there are exceptional circumstances, students must apply for an extension to the specified due date in advance, providing due cause and adequate documentary evidence for late submission
- It may not be possible to grade or score work submitted late after marked work in a unit has been returned to other students
- The principal has the right to exercise discretion in the application of the late penalty in special circumstances where satisfactory documentation has been provided.

Notional Zeros

Where students fail to hand in assessment items for which marks are awarded, they will be awarded a notional zero for that assessment item. The notional zero will be a score, which lies between 0.1 of a standard deviation below the lowest genuine score for that item and zero. Note: if the lowest genuine score is zero, the notional zero is zero.

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. Plagiarism is the copying, paraphrasing or summarising of work, in any form, without acknowledgement of sources, and presenting this as a student's own work. Examples of plagiarism could include, but are not limited to:

- submitting all or part of another person's work with/without that person's knowledge
- submitting all or part of a paper from a source text without proper acknowledgement
- copying part of another person's work from a source text, supplying proper documentation, but leaving out quotation marks
- submitting materials which paraphrase or summarise another person's work or ideas without appropriate documentation
- submitting a digital image, sound, design, photograph, or animation, altered or unaltered, without proper acknowledgement of the source.

Right to Appeal

The ACT system operates a hierarchy of reviews and appeals:

- Student seeks review from teacher regarding assessment task mark/grade, unit score, unit grade, course score
- Student seeks review from head of department, if required following review by teacher
- Student appeals to her/his college principal for a review of college assessment relating to assessment task grade/mark, unit grade, unit score, course score, penalty imposed for breach of discipline in relation to assessment
- Student, who has been through the college appeal process, may appeal to the Board against the college procedures by which the appeal decision was reached.

Further information on relevant BSSS policies can be found here:

http://www.bsss.act.edu.au/The Board/policy_and_procedures_manual