

# MATH 0003 INTRODUCTORY BUSINESS MATHEMATICS (WSTC)

**Credit Points** 10

**Legacy Code** 900114

**Coordinator** Michael Casey ([https://directory.westernsydney.edu.au/search/name/Michael Casey/](https://directory.westernsydney.edu.au/search/name/Michael%20Casey/))

**Description** This subject consists of two modules. The first module has been designed to provide a revision of basic mathematical concepts and methods that apply to business situations. They include basic mathematical operations, percentages, equations, index numbers, logarithms, direct and inverse variation, and graphs. The second module has been designed to provide students with the necessary skills for making practical financial decisions. The concepts taught include simple interest, compound interest, annuities and their applications as they apply in a business environment.

**School** Western Sydney The College

**Discipline** Mathematics

**Student Contribution Band** HECS Band 1 10cp

Check your fees via the Fees ([https://www.westernsydney.edu.au/currentstudents/current\\_students/fees/](https://www.westernsydney.edu.au/currentstudents/current_students/fees/)) page.

**Level** Undergraduate Level 0 Preparatory subject

**Equivalent Subjects** MATH 0007 - Mathematics 1

**Restrictions** Students must be enrolled in a Foundation program at The College.

**Assumed Knowledge**

Mathematics Year 10 or equivalent.

## Learning Outcomes

On successful completion of this subject, students should be able to:

1. Solve problems involving basic mathematical operations, equations and formulae.
2. Model mathematical problems using appropriate graphs.
3. Apply simple and compound interest concepts and annuities to real-life business problems.
4. Demonstrate an understanding of how the concept of the time value of money can be applied to investments.
5. Demonstrate an understanding and an ability to apply a variety of fundamental mathematical concepts to solve familiar and unfamiliar problems.
6. Interpret and communicate mathematical ideas in a clear and effective manner, using appropriate notation.
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12. 6. Interpret and communicate mathematical ideas in a clear and effective manner, using appropriate notation.

## Subject Content

Module 1 - Basic mathematics

1. Basic mathematical operations on whole numbers, decimals and fractions
2. Percentages, ratios and rates
3. Linear equations
4. Simultaneous linear equations (elimination and the substitution method)
5. Substitution into formulae, rearranging formulae
6. Quadratic equations
7. Index numbers
8. Logarithms
9. Functions and their graphs (linear, quadratic, exponential, logarithmic)
10. Direct and inverse variation

Module 2 - Financial Mathematics

11. Simple interest (interest amount, length of time, interest rate, principal and maturity value, applications, time lines and equations of value)
12. Compound interest (maturity value, principal, interest amount, interest rate, length of time, effective and nominal rates, time lines and equations of value, multiple interest rates)
13. Annuities (ordinary annuities and annuities due, accumulated value, present value, size of annuity, rate per interest period, deferred annuities, perpetuities, general annuities)
14. Applications (loans- affordability, repayment schedules, loan outstanding; investment decisions using NPV and IRR)

## Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

| Type                 | Length | Percent | Threshold | Individual/ Group Task | Mandatory |
|----------------------|--------|---------|-----------|------------------------|-----------|
| Intra-session Exam 1 | 1 hr   | 10      | N         | Individual             |           |
| Intra-session Exam 2 | 1 hr   | 25      | N         | Individual             |           |
| Applied Project      |        | 25      | N         | Individual             |           |
| End of session Test  | 3 hrs  | 40      | N         | Individual             |           |

Prescribed Texts

- Ibbett, N. 2012 Financial mathematics for decision making Cengage Learning Australia