

**WESTERN SYDNEY**  
UNIVERSITY



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The College

## **INTRODUCTORY BUSINESS MATHEMATICS**

**900114**

**2020**



**UNIT OUTLINE**

Last amended:	June 2020
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Western Sydney University The College  
Nirimba Education Precinct  
Eastern Road  
Quakers Hill NSW 2763

Postal address:  
PO BOX 224  
Quakers Hill NSW 2763

Phone: (02) 9852 4488  
Fax: (02) 9852 4480

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<b>Unit name</b>	Introductory Business Mathematics
<b>Unit number</b>	900114
<b>Coordinator</b>	Michael Casey
<b>Session</b>	2020.2
<b>Handbook summary</b>	<p>This unit 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.</p> <p>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.</p>
<b>Credit point value</b>	10
<b>Prerequisite/s</b>	N/A
<b>Corequisite/s</b>	N/A
<b>Unit incompatible with and not to be counted for credit with</b>	N/A
<b>Assumed knowledge</b>	Mathematics Year 10 or equivalent
<b>Unit level</b>	Level Z – Non-award unit
<b>Attendance requirements</b>	Students are expected to attend at least 80% of classes. Educational research consistently demonstrates that this attendance level is associated with a high likelihood of achieving a passing grade.
<b>Enrolment restrictions</b>	Students must be enrolled in a Foundation Studies course at The College.
<b>Learning outcomes</b>	<p>On successful completion of this unit, students should be able to:</p> <ol style="list-style-type: none"> <li>1. solve problems involving basic mathematical operations, equations and formulas</li> <li>2. model mathematical problems using appropriate graphs</li> <li>3. apply simple and compound interest concepts and annuities to real-life business problems</li> <li>4. understand how the concept of the time value of money can be applied to investments</li> <li>5. understand and apply a variety of fundamental mathematical concepts to solve familiar and unfamiliar problems, and</li> <li>6. interpret and communicate mathematical ideas in a clear and effective manner, using appropriate notation.</li> </ol>

<b>Unit content</b>	<p>In this unit students will learn about:</p> <p><b>Module 1: Basic mathematics</b></p> <ul style="list-style-type: none"> <li>• Basic mathematical operations on whole numbers, decimals and fractions</li> <li>• Percentages, ratios and rates</li> <li>• Linear equations</li> <li>• Simultaneous linear equations (elimination and the substitution method)</li> <li>• Substitution into formulas, rearranging formulas.</li> <li>• Quadratic equations</li> <li>• Index numbers</li> <li>• Logarithms</li> <li>• Functions and their graphs (linear, quadratic, exponential, logarithmic)</li> <li>• Direct and inverse variation</li> </ul> <p><b>Module 2: Financial mathematics</b></p> <ul style="list-style-type: none"> <li>• Simple interest (interest amount, length of time, interest rate, principal and maturity value, applications, time lines and equations of value)</li> <li>• 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)</li> <li>• Annuities (ordinary annuities and annuities due, accumulated value, present value, size of annuity, rate per interest period, deferred annuities, perpetuities, general annuities)</li> <li>• Applications (loans – affordability, repayment schedules, loan outstanding; investment decisions using NPV and IRR)</li> </ul>
<b>Mode of delivery</b>	<p>This unit is taught on a face-to-face basis and includes six hours of classes per week. In addition, students will be required to access vUWS regularly, in order to download additional learning material, and to check for any announcements about the unit that may be posted there.</p>
<b>Online learning requirements</b>	
<b>Essential requirements</b>	<p><b>Essential text</b></p> <p>Ibbett, N 2012, <i>Financial mathematics for decision making</i>, Cengage Learning Australia, South Melbourne.</p> <p><b>Further resources</b></p> <p>Bradley, T 2013, <i>Essential mathematics for economics and business</i>, 4th edn, Wiley, Chichester.</p> <p>Brechner, RA 2012, <i>Contemporary mathematics for business and consumers</i>, 6th edn, Cengage Learning, Mason, OH.</p> <p>Croft, A 2010, <i>Foundation maths</i>, 5th edn, Pearson Prentice Hall, New York.</p> <p>Deitz, JE 2006, <i>Contemporary business mathematics for colleges</i>, 16th edn, Cengage Learning, Mason, OH.</p> <p>Dickman, G 2000, <i>Business mathematics</i>, 2nd edn, Nelson, South Melbourne.</p> <p>Evans, S 2009, <i>Access to maths</i>, Prentice Hall, Harlow.</p> <p>Gerver, RK &amp; Sgroi, RJ 2005, <i>Financial math review</i>, South-Western, Mason, OH.</p>

**Essential equipment**

- Approved non-programmable scientific calculator
- Microsoft Excel (this is available in the Computer Labs)

**ASSESSMENT ITEMS AND WEIGHTING**

Assessment for this unit will be based on the following components:

Task	Weighting	Learning outcomes assessed	Mandatory task
1. Remote Intra-session Exam 1 (1 hour)	10%	1, 5, 6	Y
2. Remote Intra-session Exam 2 (1 hour)	25%	1-6	Y
3. Individual Report (300 words plus mathematical calculations)	25%	1-6	Y
4. Remote End of Session exam (2 hours)	40%	1-6	Y
Total	100%		

For details of assessment due dates, please refer to the learning guide for this unit.

All marks will be determined in accordance with The College [Assessment Policy](#).

All assessment tasks are mandatory unless otherwise specified. Should a student fail to attempt/submit the first formal assessment task in a unit, they will be deemed to be at risk and will need to follow an intervention plan in order not to receive a Fail Non-Submission (FNS) grade. However, failure to attempt/submit all other mandatory assessment tasks will result in an immediate FNS grade for the unit.

In order to pass this unit, students must:

- attempt/submit all mandatory assessment tasks, and
- achieve a minimum overall mark of 50%.