# ACTL20002 Financial Mathematics II

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| **Credit Points:** | 12.5 |
| **Level:** | 2 (Undergraduate) |
| **Dates & Locations:** | 2015, Parkville<br><br>This subject commences in the following study period/s:<br>Semester 2, Parkville - Taught on campus. |
| **Time Commitment:** | Contact Hours: Two 1-hour lectures and a 1-hour tutorial per week Total Time Commitment: Estimated total time commitment of 170 hours. |
| **Prerequisites:** | Both of: |

| Subject | Study Period Commencement: | Credit Points: |
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| ACTL20001 Financial Mathematics I | Semester 1 | 12.50 |
| MAST20004 Probability | Semester 1 | 12.50 |

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| **Corequisites:** | None |
| **Recommended Background Knowledge:** | Please refer to Prerequisites and Corequisites. |
| **Non Allowed Subjects:** | None |
| **Core Participation Requirements:** | For the purposes of considering requests for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements for this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the Disability Liaison Unit website: http://www.services.unimelb.edu.au/disability/ |
| **Coordinator:** | Prof Mark Joshi |
| **Contact:** | **mjoshi@unimelb.edu.au (mailto:mjoshi@unimelb.edu.au)** |
| **Subject Overview:** | Topics include discount valuation of bonds and other assets including forward contracts; term structure of interest rates; duration and convexity; distributions of accumulations and present values; stochastic simulation; time series models |
| **Learning Outcomes:** | # Perform compound interest calculations relating to financial assets, including the calculation of price and yield with and without allowance for default<br># Calculate rates of return on investment portfolios using methods employed by actuaries<br># Calculate duration and convexity of cash flow and demonstrate an understanding of the principles and limitations of immunisation<br># Show an understanding of spot rates, forward rates and the term structure of interest rates<br># Analyse compound interest problems at a more advanced level than in ACTL20001 Financial Mathematics I<br># Show an understanding of simple stochastic models for investment returns<br># Show an understanding of the application of simple time series models for investment returns<br># Apply pre-requisite mathematical and statistical concepts to the solution of problems on the above topics |

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| **Assessment:** | A 2-hour end-of-semester examination (70%), two assignments totalling not more than 2000 words (20%), and a 45 minute mid-semester examination (10%). Satisfactory completion of this subject requires a 50% pass in the end of semester examination. |
| **Prescribed Texts:** | You will be advised of prescribed texts by your lecturer. |
| **Recommended Texts:** | Information Not Available |
| **Breadth Options:** | This subject potentially can be taken as a breadth subject component for the following courses:<br># **Bachelor of Arts (https://handbook.unimelb.edu.au/view/2015/B-ARTS)**<br># **Bachelor of Environments (https://handbook.unimelb.edu.au/view/2015/B-ENVS)**<br># **Bachelor of Music (https://handbook.unimelb.edu.au/view/2015/B-MUS)**<br><br>You should visit **learn more about breadth subjects (http://breadth.unimelb.edu.au/ breadth/info/index.html)** and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects. |
| **Fees Information:** | Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees |
| **Generic Skills:** | # High level of development: written communication; problem solving; statistical reasoning; application of theory to practice; use of computer software. |