

## FNCE40003 Numerical Techniques in Finance

| <b>Credit Points:</b>                    | 12.50  |                |                            |                |                       |                        |       |
|--|--|----------------|----------------------------|----------------|-----------------------|------------------------|-------|
| <b>Level:</b>                            | 4 (Undergraduate)  |                |                            |                |                       |                        |       |
| <b>Dates &amp; Locations:</b>            | This subject is not offered in 2014.   |                |                            |                |                       |                        |       |
| <b>Time Commitment:</b>                  | Contact Hours: Three hours of lectures and workshops per week Total Time Commitment: Not available   |                |                            |                |                       |                        |       |
| <b>Prerequisites:</b>                    | Admission into BH-COM and <table border="1" data-bbox="389 488 1485 636"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>FNCE30001 Investments</td> <td>Semester 1, Semester 2</td> <td>12.50</td> </tr> </tbody> </table>  | Subject        | Study Period Commencement: | Credit Points: | FNCE30001 Investments | Semester 1, Semester 2 | 12.50 |
| Subject                                  | Study Period Commencement:   | Credit Points: |                            |                |                       |                        |       |
| FNCE30001 Investments                    | Semester 1, Semester 2   | 12.50          |                            |                |                       |                        |       |
| <b>Corequisites:</b>                     | None   |                |                            |                |                       |                        |       |
| <b>Recommended Background Knowledge:</b> | Please refer to Prerequisites and Corequisites.  |                |                            |                |                       |                        |       |
| <b>Non Allowed Subjects:</b>             | None   |                |                            |                |                       |                        |       |
| <b>Core Participation Requirements:</b>  | 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: <a href="http://www.services.unimelb.edu.au/disability/">http://www.services.unimelb.edu.au/disability/</a> |                |                            |                |                       |                        |       |
| <b>Contact:</b>                          | <a href="mailto:jdark@unimelb.edu.au">jdark@unimelb.edu.au</a> ( <a href="mailto:jdark@unimelb.edu.au">mailto:jdark@unimelb.edu.au</a> )   |                |                            |                |                       |                        |       |
| <b>Subject Overview:</b>                 | Numerical techniques focuses on the theory and application of numerical methods for solving financial problems. The applications may include option valuation, value at risk, term structure modelling, portfolio simulation and optimisation and capital budgeting. These applications motivate the study of matrix methods, the solutions of linear and nonlinear equations, interpolation and approximation methods, numerical integration and Monte Carlo methods. No prior programming experience is required as the principles of programming are covered.   |                |                            |                |                       |                        |       |
| <b>Learning Outcomes:</b>                | <ul style="list-style-type: none"> <li># Explain the principles of object-orientated programming.</li> <li># Design computer programs that implement solutions in an efficient and effective manner.</li> <li># Analyse the effects of numerical errors on computer-based finance models.</li> <li># Use a variety of numerical procedures to solve quantitative finance problems.</li> <li># Identify and analyse the assumptions, limitations and implementations of computer-based financial models.</li> <li># Evaluate the applicability of various mathematical techniques to classes of finance problems</li> </ul>                                   |                |                            |                |                       |                        |       |
| <b>Assessment:</b>                       | A two-hour end-of-semester examination (30%) and assignments totalling 4000 words, or equivalent, due in weeks 10 to 12 (70%)  |                |                            |                |                       |                        |       |
| <b>Prescribed Texts:</b>                 | You will be advised of prescribed texts by your lecturer.  |                |                            |                |                       |                        |       |
| <b>Breadth Options:</b>                  | This subject is not available as a breadth subject.  |                |                            |                |                       |                        |       |
| <b>Fees Information:</b>                 | Subject EFTSL, Level, Discipline & Census Date, <a href="http://enrolment.unimelb.edu.au/fees">http://enrolment.unimelb.edu.au/fees</a>  |                |                            |                |                       |                        |       |

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| <b>Generic Skills:</b>    | <ul style="list-style-type: none"><li># High level of development: problem solving; application of theory to practice; use of computer software; accessing data and other information from a range of sources.</li><li># Moderate level of development: team work; interpretation and analysis.</li><li># Some level of development: written communication; statistical reasoning; critical thinking; synthesis of data and other information; evaluation of data and other information.</li></ul> |
| <b>Related Course(s):</b> | Master of Commerce (Actuarial Science)   |