Course Syllabus BUS223E

Financial Mathematics 6 ECTS

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Course Description

Financial Mathematics is an essential tool that enhances a manager's ability to make effective economic decisions.

This course provides solid, practical, up-to-date coverage of the mathematical techniques students must master to succeed in business today. It puts a great emphasis on the analysis of business problems. The course objective is to give students a good understanding about the mathematical concepts and techniques and teach them how to use these to solve related business problems in an effective way;

The issues will be explained against the background of the fast changing global market.
Students with study a variety of exercises

Course Prerequisites (if any)

Course level is intermediate.
Students should know basic principles of accounting and show have a working knowledge of basic algebra.
Important: students should be able to use a standard spread sheet program (Calc/Excel).
Prerequisites: MTH140, BUS101
Learning Objectives

After this course, you should be able to:
* understand and apply the mathematical techniques, as described in the "Course Description", so that they can solve related business problems in an effective, structured way.
* to become competent problem-solvers.

Key procedures are:

Understand that monies cannot be added or reconciled unless they are valued at the same point in time.
Understand the relation between date arithmetic and payments, as well as other counting scenarios.
Calculate equivalent interest rates
Calculate the value of an annuity or perpetuity
Calculate the present value of a given a set of cash flows
Calculate the yield rate of a given set of cash flows
Calculate the loan payment amount and the corresponding loan amortization schedule
Calculate the price, duration and convexity of a bond
Calculate linear and nonlinear depreciation of an investment
Calculate the difference between alternative courses of action of an investment, a project, a financial instrument, … by taking into account the time value of the cash flows
Use these techniques to support decision
Calculate the present value of a payment that is not certain
Calculate the premium and present value of a life insurance contract

Course schedule

Average progress is one chapter per 2-3 hours
We include 2 review sessions, one before midterm, one before the final exam
The midterm exam covers chapters 1 - 8.
The final exam is comprehensive.

Course Materials

Textbook:

Case Studies and Additional Readings:

Course Assessment
The students will be evaluated on the basis of their performance as follows:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>10%</td>
</tr>
<tr>
<td>Attendance, in-class participation</td>
<td>10%</td>
</tr>
<tr>
<td>Project</td>
<td>20%</td>
</tr>
<tr>
<td>Midterm examination</td>
<td>25%</td>
</tr>
<tr>
<td>Final examination</td>
<td>35%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
</tr>
</tbody>
</table>

Grading Scale of Vesalius College

Vesalius College grading policy, in line with the Flemish Educational norms, is now as stated follows:

<table>
<thead>
<tr>
<th>Letter grade</th>
<th>Scale of 20</th>
<th>Scale of 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>17.0-20.0</td>
<td>85-100</td>
</tr>
<tr>
<td>A-</td>
<td>16.1-16.9</td>
<td>81-84</td>
</tr>
<tr>
<td>B+</td>
<td>15.3-16.0</td>
<td>77-80</td>
</tr>
<tr>
<td>B</td>
<td>14.5-15.2</td>
<td>73-76</td>
</tr>
<tr>
<td>B-</td>
<td>13.7-14.4</td>
<td>69-72</td>
</tr>
<tr>
<td>C+</td>
<td>13.1-13.6</td>
<td>66-68</td>
</tr>
<tr>
<td>C</td>
<td>12.3-13.0</td>
<td>62-65</td>
</tr>
<tr>
<td>C-</td>
<td>11.5-12.2</td>
<td>58-61</td>
</tr>
<tr>
<td>D+</td>
<td>10.7-11.4</td>
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<tr>
<td>D</td>
<td>10.0-10.6</td>
<td>50-53</td>
</tr>
<tr>
<td>F</td>
<td>0-9.9</td>
<td>0-49</td>
</tr>
</tbody>
</table>

Further description of assessment activities and Grading Criteria

The following criteria will be applied in assessing your written work:
Evidence of understanding of the concepts, theories and ideas developed in the course.
Ability to analyze a business problem and to present the solution in a structured way.
Critical thinking.
**Additional Course Policies**

This course is not easy. It looks simple, but it is not! Study from the beginning, and contact me at once if anything is not clear.

Students should prepare for class; please read the chapter and try to understand the principles. You are encouraged to make notes; not everything I tell is in the slides or the textbook.

**Academic Honesty Statement**

Academic dishonesty is **NOT** tolerated in this course.

Academic honesty is not only an ethical issue but also the foundation of scholarship. Cheating and plagiarism are therefore serious breaches of academic integrity.

Following the College policy, cheating and plagiarism cases will be communicated in writing to the Associate Dean for Students and submitted to the Student Conduct Committee for disciplinary action.

If you refer to someone else’s work, appropriate references and citations must be provided. Grammar, spelling and punctuation count, so use the tools necessary to correct before handing in assignments.