Module Code: EF 909  |  Module Title: Financial Engineering

Module Registrar: Dr Girma Zawdie

Credit Weighting: 10  |  Semester: 2

Compulsory/optional/elective class: Academic Level: 5

Prerequisites: None

Module Format and Delivery (hours):

<table>
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<tr>
<th>Lecture</th>
<th>Tutorial</th>
<th>Assignments</th>
<th>Laboratories</th>
<th>Private Study</th>
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General Aims

The module aims to introduce elements of financial engineering that are applied to reduce risk of business insolvency and enhance the financial robustness of business enterprises. To this end, the module covers the essentials of Financial Engineering both as an academic discipline and as a strategy of financial and business risk management in the light of contemporary circumstances. Recent trends in corporate business behaviour in major industrialized countries have heightened concern with issues of corporate governance, corporate ethics, financial strategies and the role of the financial engineer. Central to this concern is the aim of managing risk to ensure the solvency and sustainability of business ventures. In exploring the way forward, business enterprises often consider organisational and management options that would enable them to enhance their position of competitiveness and solvency under uncertain and risky market conditions. Why do businesses go bust? What is the best strategy for survival and growth? What are the options for financing investment projects both in the private and public sectors of an economy? How would the financial engineer propose to combine loan capital and equity capital to raise funds for an investment initiative; and how would he/she advise his/her company/organization to build its investment portfolio to ensure financial security in volatile market conditions? These are some of the major issues the financial engineering module takes on board.

Specific Learning Outcomes

Upon successful completion of this module, the student will be able to:

- Identify and analyse issues arising from the financial accounts and reports of companies
- Evaluate investment decisions in the light of financial market circumstances
- Identify and evaluate sources and methods of raising finance
- Analyse the principles underlying operation of financial/capital markets
- Identify and evaluate financial strategies and instruments for corporate risk management
- Identify the various risks involved in the construction business and evaluate the implications for financial strategies
- Evaluate the financial viability of risk transfer options available to PFI and PPP projects in terms of cost-benefit analysis.
Syllabus

Introduction to the credit
✓ Elements of Financial Accounting
✓ Financial Reports: Balance sheets, income statements, Financial Ratios
✓ Financial assets and asset valuation
✓ Sources of project finance
✓ Capital structure and gearing
✓ Financial engineering of capital projects
✓ Influence of the stock market on Engineering firms
✓ Cases in business failures
✓ The PFI Debate
✓ Investment decisions, financial instruments and portfolio risk management
✓ Restructuring strategies - acquisitions and mergers

Assessment Method(s) Including Percentage Breakdown and Duration of Exams

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<thead>
<tr>
<th></th>
<th>Examination Duration</th>
<th>Coursework No. of Assignments</th>
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<td><strong>Examination</strong></td>
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Resit Assessment Procedures:

Recommended Reading

(Template updated December 2004)