COURSE DETAILS
Course Code: F71TT
Full Course Title: Risk Management: Techniques and Tools
SCQF Level: 11
SCAF Credits: 15
Available as Elective: No

DELIVERY LEVEL
Undergraduate: Yes
Postgraduate Taught: Yes
Postgraduate Research: No

COURSE AIMS
The aims of this course are:
• To equip students with a variety of tools to tackle problems involving univariate financial time series
• To provide a good grounding in the best practice of risk management within an organisation
• To understand economic measures of capital and capital allocation
• To have a thorough understanding of operational risk in its various forms
• To identify and measure risks and then to take actions to mitigate risks and exploit risky opportunities through good risk management strategies.

LEARNING OUTCOMES – SUBJECT MASTERY
On completion of this course the student should be able to:
• Analyse a variety of financial time series
• Demonstrate a good understanding of the different types of operational risks that might arise in an organisation, and be able to identify potential operational risks in a given scenario
• Use quantitative and qualitative methods for identifying and analysing operational risk
• Demonstrate an understanding of the main international guidelines on good risk management practice and good governance
• Understand how a ratings agency assess risk management practice and use this to improve risk management practice in an organisation
• Show how to measure the economic value of a risky venture and how this can be used to influence decision making
• Understand the different methods for how to allocate capital within an organisation and apply these methods in a variety of situations
• Demonstrate how to establish at Board level an organisation's risk appetite, risk objectives and risk tolerances
• Show to optimize risk and opportunities given Board-level constraints on risk appetite and risk tolerances
• Determine an organisation's overall risk exposure
• Show an understanding of the importance of asset-liability modeling for a financial institution
• Analyse real and hypothetical case studies of good and bad risk management practice
• Analyse real and hypothetical scenarios from the perspective of different stakeholders

• Develop and recommend strategies for active management of risks using a variety of methods
  o Recommend risk mitigation strategies by transfer of risk
  o Develop strategies for management and mitigation of credit risk
  o Recommend risk reduction strategies without transferring risk to an external agency
  o Demonstrate an understanding of the pros and cons of the different approaches to risk mitigation
  o Show an understanding of modern methods for management of interest-rate risk
### LEARNING OUTCOMES – PERSONAL ABILITIES

- Show an appreciation of the interface between academic theory and industrial practice
- Demonstrate the ability to learn independently and as part of a group
- Manage time, work to deadlines and prioritise workloads
- Present results in a way that demonstrates that they have understood the technical and broader issues of financial risk management
- Show an appreciation of the societal role of risk management in protecting the consumer and other stakeholder

### SYLLABUS

- **Operational risk management**
  - Non-quantitative and quantitative methods and tools for managing operational risk
  - Different ways of quantifying operational risk under Basel II

- **Banking and insurance regulatory systems**

- **Risk management governance and culture**
  - Risk management governance structures and the risk management culture
  - Governance issues including agency, audit and legal risk
  - Rating agency assessments of an organisation's risk management operation

- **ERM frameworks and assessment**

- **Risk appetite and risk tolerance**

- **Economic capital and capital allocation**

- **Credit risk management**

- **Modelling and assessment of market risk**
  - Models for volatility clustering
  - Non-normality, fat tails and skewness
  - Assessment of value at risk
  - Backtesting VaR models

- **Market risk management**
F71TT Risk Management: Techniques and Tools

- Dynamic versus static hedging using financial derivatives; practical considerations

- **Interest rate risk management**
  - Modern approaches to immunisation of interest-rate risk
  - Asset-liability modelling

- **How risks and risky opportunities affect the selection of strategy**

- **Advantages and disadvantages of different approaches to risk reduction; e.g. costs and benefits; information asymmetry; transparency; liquidity; basis risk; moral hazard**

- **Optimising risks and opportunities relative to the Board's declared risk appetite and risk tolerances**

- **Case studies: examples of past disasters and examples of good practice**
  - Risk analysis of real and hypothetical scenarios including non-quantifiable risks; views of different stakeholders

### COURSE RELATIONSHIPS

| N/A |

### LOCATION AND ASSESSMENT METHODS

<table>
<thead>
<tr>
<th>Method</th>
<th>Weight</th>
<th>Exam Mins</th>
<th>Type</th>
<th>Diet</th>
<th>Synoptic Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examination</td>
<td>80</td>
<td>120</td>
<td>Assessment</td>
<td>Semester 2</td>
<td></td>
</tr>
<tr>
<td>Coursework</td>
<td>20</td>
<td></td>
<td>Assessment</td>
<td>Semester 2</td>
<td></td>
</tr>
<tr>
<td>Examination</td>
<td>100</td>
<td>120</td>
<td>Reassessment</td>
<td>Semester 2</td>
<td></td>
</tr>
</tbody>
</table>