F71TT Risk Management: Techniques and Tools

**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**

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**Additional Information:**

**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 organization 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
  - Recommend risk mitigation strategies by transfer of risk
  - Develop strategies for management and mitigation of credit risk
  - Recommend risk reduction strategies without transferring risk to an external agency
  - Demonstrate an understanding of the pros and cons of the different approaches to risk mitigation
  - 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**
o Dynamic versus static hedging using financial derivatives; practical considerations

• Interest rate risk management
  o Modern approaches to immunisation of interest-rate risk
  o 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
  o Risk analysis of real and hypothetical scenarios including non-quantifiable risks; views of different stakeholders

LOCATION AND ASSESSMENT METHODS

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