



**Strathmore**  
UNIVERSITY

STRATHMORE INSTITUTE OF MATHEMATICAL SCIENCES  
BACHELOR OF BUSINESS SCIENCE IN FINANCIAL ENGINEERING AND FINANCIAL  
ECONOMICS  
SPECIAL EXAMINATION  
**BSF 4126 FINANCIAL RISK MANAGEMENT**

**DATE: 26<sup>th</sup> March 2025**

**Time: 2 Hours**

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**Instructions**

1. This examination consists of **FIVE** questions.
2. Answer **Question ONE (COMPULSORY)** and any other **TWO** questions.

**Question 1 (30 Marks)**

1. A financial firm's employees often bypass risk protocols to meet sales targets. How does this reflect the firm's risk culture, and what impact might it have on its stability? Propose two ways to foster a stronger risk-aware culture among staff (6 Marks).
2. Imagine you're a risk analyst at a bank where a data entry error overstated loan defaults by 20%. How would poor data quality affect the bank's risk predictions? Discuss two specific consequences and suggest a practical step to ensure data reliability in financial risk models (6 Marks).
3. Suppose a risk model trained only on urban customer data is used to assess rural loan applicants. Here biases could emerge and might skew financial decisions. Explain two ways to detect and reduce such biases in risk analytics (6 Marks).
4. Contrast brainstorming sessions with data-driven risk scans as ways to spot risks. Which would work better for a fintech startup launching a new app (6 Marks).

5. Consider a trading firm where bonuses reward profit over prudence. How might this culture amplify financial risks? Propose two strategies to align employee incentives with long-term risk awareness (6 Marks).

### **Question 2 (20 Marks)**

1. Compare a classic risk identification tool (e.g., SWOT analysis) with a modern one (e.g., predictive analytics). Which would you use to assess risks in investment management, and why? (6 Marks)
2. Besides its involvement in stress testing, analyze three other ways that the risk committee is able to influence risk culture and capabilities in an organization. Provide examples of recent corporate governance scenarios where the risk committee has played a pivotal role in fostering an effective risk culture (6 Marks).
3. Discuss the benefits and criticisms of regulatory frameworks for banks and insurance companies. Use contemporary examples to illustrate your points and focus on the effects of recent changes in regulatory expectations, such as the increased focus on individual accountability and documentation (8 marks).

### **Question 3 (20 Marks)**

1. Discuss the risk management control cycle, clearly explaining each step (6 marks)
2. Explain the significance of adopting a qualitative approach within the domain of credit risk evaluation, integrating theoretical perspectives and empirical evidence to support your argument (6 Marks)
3. "Operational risk, arising from failures of systems, processes, people, or external events, has gained heightened attention in recent years due to several high-profile incidents and increasing regulatory scrutiny. Measurement of operational risk, while challenging, is vital for effective risk management and regulatory compliance." Discuss in-depth three distinct approaches to measuring operational risk, covering both traditional and contemporary methods (8 Marks).

#### **Question 4 (20 Marks)**

1. Explain the challenges in financial risk modelling (4 Marks)
2. Discuss the importance of model validation in risk analytics. What are the key challenges and considerations in validating risk prediction models, particularly those built using machine learning techniques? (6 marks).
3. Differentiate the following terms as used in financial risk management :
  - i) risk vanities vs risk culture (2 marks)
  - ii) pure vs speculative risks (2 marks)
  - iii) static vs dynamic risks (2 marks)
  - iv) risk monitoring vs risk planning (2 marks)
  - v) risk model validation vs risk model prediction (2 marks)

#### **Question 5 (20 Marks)**

1. Failure of the risk committee to perform the duties explained or their involvement in the risk function or risk management process may bring about costs. Explain these costs. (8 Marks)
2. Explain the role of derivatives in risk management (6 marks)
3. Risk identification should not be a one-time event, but a continuous process integrated into the organization's operations. Discuss how this can be achieved, considering factors such as organizational culture, information sharing, and reward systems (6 marks).