

# Applied Risk Management

Module 6, 2024/25

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## Course description

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This course will provide you with the insides of risk management framework in financial institutions and enterprises. We will cover broad range of risk metrics that are commonly used, with the focus on market risk, credit risk and operational risk, capital allocation and three lines model as an update to previously established three lines of defense model. Several speakers from the industry are expected (ex Big-4, banks, enterprises).

## Course requirements, grading, and attendance policies

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### Prerequisites

Though there are no formal prerequisites, you will have great benefit previously attending Risk Management, Derivatives and Fixed Income Instruments.

### Participation

Mandatory and conditional to be graded is a full and timely participation in all classes. There is a strong anticipation that every student will actively participate and make a qualitative contribution to class discussion.

### Home assignments and cases

Home assignments should be prepared using Python or R as a programming tool. Cases should be prepared in groups of 3 people. The case report should be prepared in form of the presentation to an executive officer and contain problem statement (including relevant information from the case), analysis (assumptions, arguments, optimal and alternative solutions), and conclusions (summary of your logic and recommendations).

### Grading

The course grade will be based on two individual home assignments (20%), three cases (30%) and closed-book final exam (50%).

Active class participation may add up to 10% bonus points (note that quality rather than quantity of your interventions will count).

## Course contents

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Course orientation session  
Risk Culture and Why It Matters

Three lines model  
Risk-management standards and regulation framework  
High-Level Summary of Basel Accords and Reforms  
Economic Capital Frameworks  
Economic Capital Measures and Governance

Estimating Market Risk Measures: Value-At-Risk, Expected Shortfall, and Specific Metrics Non-Parametric Approaches  
VaR Mapping  
Backtesting VaR  
Credit Analysis: Tools and Methods  
Rating Assignment Methodologies and Credit Risk Models  
Portfolio Credit Risk  
IFRS 9 requirements  
Defining and Measuring Operational Risk: Standardized Measurement Approach and Loss Distribution Approach  
Risk Capital Attribution and Risk Adjusted Performance Measurement  
Stress Testing Banks  
Risk Management in Non-Financial Entities

## **Course materials**

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### **Required textbooks and materials**

Risk Management and Financial Institutions, Fifth Edition, by John C. Hull  
The Essentials of Risk Management, Second Edition, by Michel Crouhy, Dan Galai, and Robert Mark

### **Additional materials**

Measuring Market Risk, Second Edition, by Kevin Dowd  
Value at Risk: The New Benchmark for Managing Financial Risk, Third Edition, by Philippe Jorion  
Credit Risk Modeling using Excel and VBA, Second Edition, by Peter N. Posch and Gunter Löffler  
Risk Management and Value Creation in Financial Institutions, by Gerhard Schroeck

## **Academic integrity policy**

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Cheating, plagiarism, and any other violations of academic ethics at NES are not tolerated.

