

MTH360 Applied Financial Mathematics II

Level: 3

Credit Units: 5 Credit Units

Language: ENGLISH

Presentation Pattern: EVERY JULY

Synopsis:

MTH360 Applied Financial Mathematics II is designed to build onto the knowledge that learners have from MTH359 Financial Mathematics I. Motivated by the desire to allocate resources efficiently over time, the course will then introduce Portfolio Theory, which is one of the most fundamental economic theories dealing with investments.

Topics:

- Pricing of Forward & future contracts
- Comparison of forwards and futures
- Basic theory of interest
- Present and future values of streams
- Fixed-income securities
- Yield, duration and immunization
- Portfolio return and risk
- Efficient frontier
- Two fund theorem and One fund theorem
- Capital Asset Pricing Model (CAPM)
- Security market line (SML)
- CAPM Pricing Formula

Learning Outcome:

- Compare forward and future contracts.
- Discuss the efficient frontier, and explain the implications for incremental returns as an investor assumes more risk.
- Solve, using the SML, the expected return on a security.
- Infer the present and future values for different cash flow streams.
- Construct bond portfolio to immunize against interest changes.
- Interpret the market portfolio, and the role of the market portfolio in the formation of the capital market line (CML).

Assessment Strategies (Evening Class):

Components	Description	Weightage Allocation (%)
Overall Continuous Assessment	COMPUTER MARKED ASSIGNMENT 1	10
	TUTOR-MARKED ASSIGNMENT 1	20
Overall Examinable Components	Written Exam	70

Total	100
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