Technische Universität München

Module Description
MA5709: Investment Strategies

TUM Department of Mathematics

Module Level:	Language:	Duration:	Frequency:
Master	English	one semester	irregularly

Credits:*	Total Hours:	Self-study Hours:	Contact Hours:
5	150	105	45

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:
Written test

Type of Examination:	Duration of Examination (min.):	Repeat Examination:
written	60	End of Semester

(Recommended) Prerequisites:
MA2409 Probability Theory, MA3702 Continous Time Finance

Content:
This course gives an overview on the most important static and dynamic investment strategies and presents their mathematical background. It is supplemented by an introduction to stochastic control methods and utility maximization.

Intended Learning Outcomes:
At the end of the module students are able to create new investment strategies, evaluate their present values, analyse the risk of different strategies and apply different concepts of modern finance in the given context.

Teaching and Learning Methods:
Lecture, exercise course, self-study exercises

Media:
Course reserve, slides, blackboard, exercise sheets

Reading List:

R. Zagst: Interest Rate Management, Springer Finance, 2002.
S.E. Shreve: Stochastic calculus for Finance II: Continuous-Time Models, Springer Finance, 2004.
J.C. Hull: Options, Futures, and Other Derivatives, Prentice-Hall, 2006.
K. Hinderer: Grundlagen der Wahrscheinlichkeitstheorie, Springer, 1972.
R.C. Merton: Continuous-Time Finance, Blackwell Publishers Inc., 1992.
R. Korn, E. Korn: Optionsbewertung und Portfolio- Optimierung: Moderne Methoden der Finanzmathematik, Vieweg und Teubner, 2001.
R. Korn: Optimal Portfolios: Stochastic Models for Optimal Investment and Risk Management in Continuous Time, World Scientific, 1997.
I. Karatzas, S.E. Shreve: Methods of Mathematical Finance, Springer, 2004.
R. Bellman: Dynamic Programming, Princeton University Press, 1957.
S.E. Dreyfus: Dynamic programming and the calculus of variations, Academic Press Inc., 1965.

Responsible for Module:

Rudi Zagst, zagst@tum.de

Courses (Type of course, Weekly hours per semester), Instructor:

Investment Strategies (Lecture, 2 SWS)
Hieber P [L], Zagst R

Investment Strategies (Exercise Session) (Exercise, 1 SWS)
Zagst R, Hieber P

For further information in this module, please click
www.campus.tum.de or here.