



**LUND**  
UNIVERSITY

School of Economics and Management

## **NEKP81, Economics: Continuous Time Finance, 7.5 credits**

*Nationalekonomi: Finansiell ekonomi i kontinuerlig tid, 7,5  
högskolepoäng*

**Second Cycle / Avancerad nivå**

---

### **Details of approval**

The syllabus was approved by The Board of the Department of Economics on 2011-06-07 to be valid from 2011-06-07, autumn semester 2011.

### **General Information**

This is a single subject master course in economics. The course is optional within a number of master programmes at Lund University.

*Language of instruction:* English

Teaching is in English. (Teaching may be in Swedish if all registered students have a good knowledge of Swedish).

*Main field of studies*

Economics

*Depth of study relative to the degree requirements*

A1N, Second cycle, has only first-cycle course/s as entry requirements

### **Learning outcomes**

#### **Knowledge and understanding**

Upon completing the course, students shall:

- have a basic knowledge of stochastic calculus,
- have a knowledge of dynamic portfolio choice and equilibrium theory,
- understand the concept of intertemporal hedging in dynamic portfolio choice,
- understand the equilibrium approach to asset pricing within a continuous-time framework,
- understand how to price assets by no arbitrage in continuous time,
- be able to describe the steps involved in the derivation of the Black-Scholes formula,

- be able to understand novel research findings within the field of continuous-time finance.

### **Competence and skills**

Upon completing the course, students shall have the ability to independently:

- discuss the application of dynamic portfolio choice models to real world problems,
- apply no-arbitrage arguments to real-world phenomena and problems,
- apply the equilibrium approach to asset pricing,
- obtain economic insights into the term structure of interest rates,
- apply novel results from research papers within the field to real world problems,
- give an account of and discuss continuous-time models.

### **Judgement and approach**

Students shall have developed the ability to pursue further studies in the subject and should be able to search for and evaluate information with a high degree of independence.

### **Course content**

This course offers an introduction to optimal portfolio choice, equilibrium asset pricing and arbitrage free pricing of derivatives in continuous time. Although the course builds on stochastic calculus, the emphasis is on the economic relevance of the models from theoretical and practical points of view.

No specific gender perspective is adopted in this course.

### **Course design**

1. Teaching: Tuition consists of lectures.

### **Assessment**

1. Examination: Written exams take place at the end of the course. There will be further opportunities for examination close to this date.
2. Limitations on the number of examination opportunities: –

The University views plagiarism very seriously, and will take disciplinary action against students for any kind of attempted malpractice in connection with examinations and assessments. Plagiarism is considered to be a very serious academic offence. The penalty that may be imposed for this, and other unfair practices in examinations or assessments, includes suspension from the University for a specified period.

*Subcourses that are part of this course can be found in an appendix at the end of this document.*

## Grades

Marking scale: Fail, E, D, C, B, A.

1. Grading: The official grading scale is A, B, C, D, E and Fail.
2. Weighting grades from different parts of the course: –
3. Grading scales for different parts of the course: –

## Entry requirements

Students who have been admitted to the Master Programme in Finance and who have taken the courses NEKN81 "Foundations of Finance" and NEKN82 "Empirical Finance" are eligible to take this course. For other students at least 90 ECTS-credits in economics are required, which must include an intermediate course in finance (e.g., NEKH81 "Portfolio Theory"), an intermediate course in microeconomics (e.g., NEKG21 "Intermediate Microeconomic Analysis"), and an intermediate course in econometrics (e.g., NEKG31 "Econometrics" or 15 ECTS-credits in statistics) or equivalent courses. The course NEKN81 "Foundations of Finance" is recommended.

## Further information

1. Transitional regulations: The course replaces NEKM50 "Continuous Time Finance"
2. Limitations in the period of validity: –
3. Limitations: The course may not be included in the same degree as NEKM50 "Continuous Time Finance".
4. Similar courses: –
5. Limitations in renewed examination: –

## Subcourses in NEKP81, Economics: Continuous Time Finance

Applies from H11

1101 Continuous Time Finance, 7,5 hp  
Grading scale: Fail, E, D, C, B, A