



LUND
UNIVERSITY

School of Economics and Management

NEKH82, Economics: Option Theory, 7.5 credits *Nationalekonomi: Optionsteori, 7,5 högskolepoäng* First Cycle / Grundnivå

Details of approval

The syllabus was approved by The Board of the Department of Economics on 2011-06-07 and was last revised on 2022-09-13. The revised syllabus applies from 2023-01-16, spring semester 2023.

General Information

This is a single subject intermediate course in economics belonging to the 'Financial Economics' specialisation. The course is optional within a number of undergraduate programmes at Lund University.

Language of instruction: Swedish

In some semesters the course can be taught in English, see the appropriate application catalogue.

Main field of studies

Economics

Depth of study relative to the degree requirements

G1F, First cycle, has less than 60 credits in first-cycle course/s as entry requirements

Learning outcomes

Knowledge and understanding

Students shall be able to:

- understand the basic functions of forward and option contracts,
- understand the theoretical pricing of forwards and options using the binomial model and the Black–Scholes model,
- understand the difference between the assumptions needed to price forward contracts and option contracts,
- explain how underlying variables affect the price of forwards and options,
- explain how Monte Carlo simulation can be used to price option contracts,
- generalise the knowledge to types of options that are not treated in the course.

Competence and skills

Students shall have demonstrated an ability to independently:

- use forward and option contracts for risk management purposes,
- apply different price setting methods,
- evaluate the assumptions of various price setting methods,
- analyse the price sensitivity of an option portfolio to the variables that determine option prices,
- carry out a Monte Carlo simulation to determine option prices,
- discuss option theory.

Judgement and approach

Students shall have 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. Students shall also have sufficient competence to individually write an empirically orientated paper.

Course content

The course deals with the theoretical valuation of European and American call and put options. Under the assumption of an arbitrage free market, the course identifies the boundaries within which option prices must be during the duration of the option. Using additional assumptions regarding the development of the underlying asset over time (its stochastic process), the exact price of the option is derived, using either the binomial model or the Black-Scholes model. The main aim of the course is to establish an understanding of standardised option contracts.

Course design

1. Teaching: Tuition consists of lectures, exercises and a computer exercise.

Assessment

1. Examination: The examination consists of a written exam and graded computer exercises. The written exam takes place at the end of the course. There will be further opportunities for examination close to this date. Points from the computer exercises can only be carried forward to examinations taken the same term.

2. Limitations on the number of examination opportunities: –

The University views plagiarism and other academic dishonesty 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.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

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. Grade (Definition), Points or percentage out of maximum points, Characteristic
A (Excellent), 85–100, A distinguished result that is excellent with regard to theoretical depth, practical relevance, analytical ability and independent thought.

B (Very good), 75–84, A very good result with regard to theoretical depth, practical relevance, analytical ability and independent thought.

C (Good), 65–74, The result is of a good standard with regard to theoretical depth, practical relevance, analytical ability and independent thought.

D (Satisfactory), 55–64, The result is of a satisfactory standard with regard to theoretical depth, practical relevance, analytical ability and independent thought.

E (Sufficient), 50–54, The result satisfies the minimum requirements with regard to theoretical depth, practical relevance, analytical ability and independent thought, but not more.

U (Fail), 0–49, The result does not meet the minimum requirements with regard to theoretical depth, practical relevance, analytical ability and independent thought.

Students have to receive a grade of E or higher in order to pass a course.

2. Weighting grades from different parts of the course: –

3. Grading scales for different parts of the course: –

Entry requirements

At least 20 ECTS-credits from the introductory course in economics, of which at least 7.5 ECTS-credits in microeconomics are needed for admission till all intermediate courses in economics. To be admitted to this particular course students must also have passed a course in econometrics or quantitative methods (e.g. NEKB23) or 15 ECTS-credits in statistics or equivalent courses.

Further information

1. Transitional regulations: This course replaces NEKK12 "Option Theory".

2. Limitations in the period of validity: –

3. Limitations: This course may not be included in the same degree as NEK624 "Option Theory" or NEKK12 "Option Theory".

4. Similar courses: –

5. Limitations in renewed examination: –

Subcourses in NEKH82, Economics: Option Theory

Applies from H11

1101 Option Theory, 7,5 hp
Grading scale: Fail, E, D, C, B, A