NEKG11, Economics: Intermediate Course, 30 credits
Nationalekonomi: Fortsättningskurs, 30 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 2023-02-14. The revised syllabus applies from 2023-09-01, autumn semester 2023.

General Information

This is a single subject intermediate course that can be a part of all specialisations within economics. The course consists of the mandatory sub-courses "Microeconomic Analysis", "Mathematical Methods for Economics" and "Econometrics" and one elective sub-course among the alternatives "Macroeconomic Analysis", "Fixed Income Securities", "Health Economics", "Development Economics", and "Public Economics and the Welfare State". See the appropriate application catalogue for the current selection of elective sub-courses. The course is optional within a number of undergraduate programmes at Lund University. All sub-courses consist of 7.5 ECTS-credits.

Language of instruction: Swedish
The mandatory sub-courses are mainly taught in Swedish, but can in some semesters be taught in English. The elective sub-courses are mainly taught in English, but can in some semesters be taught in Swedish. (See the appropriate application catalogue.)

Main field of studies	Depth of study relative to the degree requirements
Economics	G1F, First cycle, has less than 60 credits in first-cycle course/s as entry requirements

Learning outcomes

Knowledge and understanding
a) Obligatory sub-course: Microeconomic analysis

Students shall:

- understand and be able to describe the underlying principles guiding optimal individual consumption decisions,
- understand and be able to describe the underlying principles guiding optimal individual consumption decisions under uncertainty,
- understand and be able to describe the underlying principles guiding the optimal production decisions by firms in both the short run and the long run,
- understand and be able to describe the underlying principles behind general equilibrium in an exchange economy,
- understand the basic problems faced by a monopolist in terms of pricing and price discrimination,
- understand simple instances of quantity competition (the Cournot model).

b) Obligatory sub-course: Mathematical Methods for Economics

Students shall understand:

- simple rules of algebra,
- the definition of the derivative and its geometrical interpretation,
- basic rules of differentiation,
- the general concept of a function and the elementary functions.

c) Obligatory sub-course: Econometrics

Students shall be able to:

- collect and analyse data,
- account for basic statistical concepts,
- explain how the relationship between economic variables can be analysed using statistical regression analysis,
- describe the different aspects of regression analysis
- derive and formulate testable economic hypotheses,
- give both a statistical and an economic interpretation of the results of a regression analysis,
- orientate themselves in more advanced econometrics methods,
- generalise their knowledge to econometric problems that haven't been treated during the course,
- understand relevant empirical and econometric research.

d) Elective sub-course: Macroeconomic analysis

Students shall:

- understand two-period models för medium and long range analysis of consumption, investment and the current account,
- master the derivation and interpretation of models for structural unemployment and the Phillips curve,
- understand the determinants of the real exchange rate and the current account,
- understand the IS–LM model for short-run analysis,
- understand the basic transmission mechanisms in real and new Kenyesian business cycle models using the general impulse–response model,
- understand the connection among budget deficits, public debt and seigniorage,
- adopt a critical and independent approach to macroeconomic studies of Sweden and other countries.

e) Elective sub-course: Fixed Income Securities

Students shall have demonstrated a thorough understanding of how the fixed income markets function and shall have acquired the ability to explain the basic logic behind the models and analytical tools used by actors in the this market. Particular focus lies

on Swedish fixed income markets. In addition, a special emphasis is put on the following topics:

- pricing of simple debt instruments such as bills, notes and bonds,
- the relationship between short-term and long-term interest rates,
- the relationship between forward and spot markets (fixed income),
- basic fixed income risk management,
- duration analysis,
- value-at-risk analysis,
- the link between the foreign exchange market and the fixed income market,
- forwards and futures in the currency market,
- prediction of exchange rates,
- important relationships that describe the link between fixed income and currency markets in different countries,
- advanced fixed income and credit instruments and markets,
- credit risk.

f) Elective sub-course: Health Economics

The student shall acquire a good understanding of how economic theory and methodology can be used to analyse

- individual health-related behaviour och demand for health care,
- the characteristics of the the health care market and the actors on this market (physicians, hospitals, patients etc),
- the characteristics of health insurance,
- different ways of organising and financing health care,
- the relevance of socio-economic and gender-related differences in health care consumption,
- prioritisation in health care,

and

- have a good understanding of methods of economic evaluation in health care.

g) Elective sub-course: Development Economics

Students should have an in-depth knowledge and understanding of central theories in development economics and of the economic structure and problems of development in poor countries.

h) Elective sub-course: Public Economics and the Welfare State

Students shall:

- have a good understanding of methods of normative analysis (welfare theory),
- be familiar with methods of positive analysis of public policy issues,
- be able to describe the functioning of a market economy regarding efficiency and distributional aspects,
- be able to explain the motives for and against public sector activities,
- understand the development of the Swedish welfare state politically and economically.

Competence and skills

a) Obligatory sub-course: Microeconomic analysis

Students shall have the ability to independently:

- formulate and solve the utility maximisation and expenditure minimisation problems faced by an individual,

• formulate and solve the cost minimisation and profit maximisation problems faced by a firm,
• analyse the basic problems faced by a monopolist in terms of pricing and price discrimination,
• analyse simple instances of quantity competition (the Cournot model),
• describe and explain their analyses and conclusions clearly orally as well as in writing.

b) Obligatory sub-course: Mathematical Methods for Economics

Students shall have the ability to independently:

• characterise, solve, and interpret simple unconstrained and constrained optimisation problems containing single or multiple choice variables,
• perform basic matrix and vector operations,
• solve linear systems of equations,
• present and discuss their mathematical knowledge with various target groups.

c) Obligatory sub-course: Econometrics

Students shall have the ability to independently:

• apply basic statistical methods,
• apply regression analysis to economic problems,
• test economic hypotheses,
• evaluate whether the assumptions being used in a regression analysis are reasonable,
• implement regression analysis using econometric software.

d) Elective sub-course: Macroeconomic analysis

Students shall have an ability to independently:

• be able to use two-period models för medium and long range analysis of consumption, investment and the current account,
• be able to use the IS–LM model for short-run analysis of the business cycle and stabilization policy in an open economy,
• analyse the determination of the real exchange rate and the current account in a model of traded and non-traded goods,
• analyse the determination of short-term and long-term interest rates in an open economy using the IS–LM model, the expectations hypothesis for the determination of long-term interest rates and the open interest parity condition,
• be able to summarise the background and policy options for contemporary macroeconomic issues,
• analyse fiscal policy in the long run using Ricardian equivalence and tax smoothing,
• use, but not create, dynamic macroeconomic models for structural analysis, prognoses and evaluation of policy through stochastic simulation and impulse–response analysis,
• account for and discuss macroeconomic issues. Students shall also be able to account for the results of simulations in writing.

e) Elective sub-course: Fixed Income Securities

Students shall have the ability to independently:

• structure and defend a complex theoretical argument,
• use theories and concepts to price simple fixed income instruments,
• use theories and concepts to manage the risk of simple fixed income

instruments,
- explain important events in the fixed income market,
- use simple computer tools,
- report results in written form.

f) Elective sub-course: Health Economics

Studentents shall be able to

- independently identify relevant health-economic problems, and to analyse them,
- analyse the effects of reforms in the health care sector,
- assess various sorts of economic evaluations in health care,
- explain and commuicate the results of their analyses in a concise and precise manner, orally as well as in writing

g) Elective sub-course: Development Economics

Students shall have the ability to independently:

- develop a deeper understanding of economic theory and the application of economic theory to current problems in developing countries,
- aquire information and data on economic conditions and trends, and to instil an ability to analyse these in a critical manner by using empirical conceptions and tools,
- use analytical economic tools and develop skills in policy analysis related to the development process,
- communicate and explain their analyses and conclusions clearly and concisely in both oral and written form.

h) Elective sub-course: Public Economics and the Welfare State

Students shall have the ability to independently be able to apply economic tools analysing public expenditures (public goods, publicly provided private goods, social insurance and transfers) as well as their financing (taxes, fees, debt). Students shall also be able to communicate and explain their analyses and conclusions clearly and unambiguously.

Judgement and approach
a) Obligatory sub-course: Microeconomic analysis

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

b) Obligatory sub-course: Mathematical Methods for Economics

Students shall have an ability to pursue further studies in economics. Students shall also be able to use their mathematical knowledge to assimilate economic theory and methods.

c) Obligatory sub-course: Econometrics

Students shall be able to give an account of and discuss their econometric abilities. 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.

d) Elective sub-course: Macroeconomic analysis

Students shall have the ability to independently assess fundamental macroeconomic analysis and have sufficient competence to write a theoretical or empirical macroeconomic paper. Students shall be able to find data and articles on contemporary issues through knowledge of the most important institutions and their publications and data.

e) Elective sub-course: Fixed Income Securities

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.

f) Elective sub-course: Health Economics

Students shall have the ability to conduct independent studies in health economics and have sufficient competence to write papers on health economic issues. Students shall also be able to search for and evaluate relevant information.

g) Elective sub-course: Development Economics

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 empirically oriented papers.

h) Elective sub-course: Public Economics and the Welfare State

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.

Course content

a) Obligatory sub-course: Microeconomic analysis (7,5 ECTS-credits)

The course deals primarily with economic decision making concerning consumption and production. The course starts with a treatment of the underlying principles that guide an individual's optimal consumption decisions under both certainty and uncertainty. This treatment leads to the utility maximisation and expenditure minimisation problems faced by an individual which, in turn, determine individual demand. Next, there is a treatment of the underlying principles guiding the optimal production decisions by firms in both the short run and the long run. This treatment leads to the cost minimisation and profit maximisation problems faced by a firm which, in turn, determine firm supply. There is also a treatment of general equilibrium in a simple exchange economy, and a treatment of the problems faced by a monopolist in terms of pricing and bundling ("price discrimination"). The course is concluded by an extension of the monopolist's problem to the Cournot model.

b) Obligatory sub-course: Mathematical Methods for Economics (7,5 ECTS-credits)

The course consists of basic mathematical methods that lay a foundation for further studies and applied work in economics. These tools are necessary for the formulation, analysis and understanding of economic models and issues.

The following will be treated in the course: Elementary algebra, sets, equations, limits, continuity, the derivative, the concept of a function, the elementary functions, the extreme-value theorem, extreme values of a function, partial derivatives, constrained optimisation, the method of Lagrange multipliers, vectors, linear systems of equations and integrals.

c) Obligatory sub-course: Econometrics (7,5 ECTS-credits)

This course starts with an introduction to descriptive statistics, probability theory and inference. Thereafter, the course treats problems connected with establishing and quantifying the relationship between different economics variables as well as basic econometric methodology. The main focus is statistical regression analysis, but more advanced methods in, for example, time series analysis are also considered. Another important part of the course is the practical applications in the form of computer exercises, using applications in microeconomics, macroeconomics and financial economics. The computer exercises are carried out using econometric software on a PC.

d) Elective sub-course: Macroeconomic analysis (7,5 ECTS-credits)

The course provides a deepened overview of macroeconomic theory. It deepens the content of the introductory course by adopting a more thorough analysis and a higher formal level of the analysis. Through exercises in Excel, the students work with applied macroeconomic problems. The content of the course mainly focuses on business cycle fluctuations, unemployment, inflation, the current account and fiscal and monetary policy. The analysis is extended to include the fact that economic agents are forward-looking, which considerably deepens the insights into the determination and development of a country's consumption, investment, current account and economic policy. In addition, the course contains the IS–LM model that is important for analysis of economic policy.

e) Elective sub-course: Fixed Income Securities (7,5 ECTS-credits)

The course is divided into three parts. The first part contains a description of the Swedish fixed income market, where the function of basic fixed income instruments and markets is explained. In the second part students study the risk management of both individual fixed income assets and of portfolios of such assets. The third part treats the international fixed income market. The foreign exchange market and its link with the national fixed income markets are also discussed.

f) Elective sub-course: Health Economics (7,5 ECTS-credits)

Health economics comprises economic analyses of health and health care. The main aim of the course is to provide a good knowledge of how economic theory and methodology can help us understand the underlying conditions and characteristics of health care. We discuss the different areas of health economics, such as the demand for health, health care and health insurance, the providers in health care, the phyisician-patient relationship, the organisation and financing of health care, economic evaluation and equity issues. Illustrations are frequently taken from the problems and reforms in Swedish health care. Gender-related aspects are taken into cnsideration. The course includes guest lectures by health economists working outside academia. Economic evaluation is a particular focus in the course.

g) Elective sub-course: Development Economics (7,5 ECTS-credits)

The course begins with development gaps, and the relationships between per capita income and other measures of development. Thereafter it reviews the theories of economic growth and the development process. It focuses on the role of physical, human and social capital, technology and population growth in economic growth. The problems of externalities, co-ordination failure and path dependence are highlighted. Specific attention is paid to the relationships between inequality, poverty and economic growth. Development strategies and policies related to, agriculture, industry, trade & services and infrastructure are discussed together with the role of the state, market and other institutions. A specific gender perspective is taken up in the discussion on population issues, human capital and poverty.

h) Elective sub-course: Public Economics and the Welfare State (7,5 ECTS-credits)

The course focuses on the relationship between the government and the market in terms of both equity and efficiency. The Nordic welfare state is analyzed both empirically and theoretically, with a special emphasis on the case of Sweden. The course gives the necessary economic tools to judge when government interventions are motivated, how these interventions can be done efficiently, and which problems can arise due to imperfect information and other deviations from a perfect market environment. The course includes a history of the development of the Swedish welfare state and considers arguments for and against the Nordic welfare state model. The course proceeds by covering a range of the many tools at the disposal of policymakers for jointly maximizing welfare and equity, keeping track of both the spending and the financing of the public sector. Topics covered include public goods, externalities, environmental policy, public insurance, income redistribution, efficient and equitable taxation, retirement policies, privatization and quasi-markets, fiscal federalism, and the constraints on fiscal policies imposed by globalization. Part of the course is also devoted to how collective decisions are made and the challenges involved in a collective decision process.

Course design

1. Teaching: Tuition consists of lectures. In addition, one or more of the following activities can occur: exercises, seminars and computer exercises.

Assessment

1. Examination: Examination takes place for each sub-course separately. Written exams take place at the end of each sub-course. There will be further opportunities for examination close to this date. The sub-course "Microeconomic Analysis" also consists of voluntary home assignments. Points from home assignments are counted for the regular exam and re-exam during the same term. The sub-course "Mathematical Methods for Economics" also consists of voluntary home assignments. Points from home assignments are counted for the regular exam and re-exam during the same term. The sub-course "Econometrics" also consists of computer labs. Points from home assignments are counted for the regular exam and re-exam during the same term. The sub-course "Macroeconomic Analysis" also consists of mandatory or other home assignments. Points from home assignements can only be carried forward to examinations in the same term. The sub-course "Fixed Income Securities" also consists of a computer lab report which give points that can be counted at the regular exam and re-exam. The sub-course "Health Economics" also consists of home assignments. The sub-course "Development Economics" also consists of mandatory home assignments that must be completed the same term as the other parts of the

examination. The sub-course "Public Economics and the Welfare State" also consists of mandatory and/or voluntary home assignments. Other forms of examination may be used in all sub-courses to a limited extent.

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.

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: The grade for the course is calculated as a weighted average. For each sub-course, a score is awarded according to the following table.

Grade	Points for the sub-course
A	5
B	4
C	3
D	2
E	1

The points for each sub-course are summed and the grade for the entire course is determined according to the following table. For all passing grades, at least the grade E is reauired for each sub-course.

Grade for the entire course					

Points	Second highest sub-course grade: A	Second highest sub-course grade: B	Second highest sub-course grade: C	Second highest sub-course grade: D	Second highest sub-course grade: E
18–20	A	-	-	-	-
14–17	B	B	C	-	-
10–13	C	C	C	D	-
6–9	D	D	D	D	E
4–5	E	E	E	E	E

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 to all intermediate courses in economics. To be able to choose the elective sub-course "Macroeconomic Analysis", students must also have at least 7.5 ECTS-credits in macroeconomics. To be able to choose the elective sub-course "Fixed Income Securities", students must also have an introductory course in financial economics. To choose the elective sub-course "Development Economics", students are recommended to have an introductory course in international economics.

Further information

1. Transitional regulations: This course replaces NEKA21 "Economics: Level 2".

2. Limitations in the period of validity: –

3. Limitations: This course may not be included in the same degree as NEKA21 "Economics: Level 2".

4. Similar courses: The obligatory sub-course "Microeconomic Analysis" has the same content as NEKG21 "Microeconomic Analysis". The obligatory sub-course "Mathematical Methods for Economics" has the same content as NEKG33 "Mathematiucal Methods for Economics". The obligatory sub-course "Econometrics" has the same content as NEKG31 "Econometrics". The elective sub-course "Macroeconomic Analysis" has the same content as NEKG41 "Macroeconomic Analysis". The elective sub-course "Fixed Income Securities" has the same content as NEKG81 "Fixed Income Securities". The elective sub-course "Health Economics" has the same content as NEKG61 "Health Economics". The elective sub-course "Development Economics" has the same content as NEKG81 "Development Economics". The elective sub-course "Public Economics and the Welfare State" has the same content as NEKG52 "Public Economics and the Welfare State".

5. Limitations in renewed examination: –

Subcourses in NEKG11, Economics: Intermediate Course

Applies from V23

2308 Public Economics and the Welfare State, 7,5 hp
      Grading scale: Fail, E, D, C, B, A

Applies from H12

1101 Microeconomic Analysis, 7,5 hp
      Grading scale: Fail, E, D, C, B, A
1102 Mathematical Methods, 7,5 hp
      Grading scale: Fail, E, D, C, B, A
1104 Econometrics, 7,5 hp
      Grading scale: Fail, E, D, C, B, A
1105 Macroeconomic Analysis, 7,5 hp
      Grading scale: Fail, E, D, C, B, A
1106 Fixed Income Securities, 7,5 hp
      Grading scale: Fail, E, D, C, B, A
1107 Health economics, 7,5 hp
      Grading scale: Fail, E, D, C, B, A
1108 Development Economics, 7,5 hp
      Grading scale: Fail, E, D, C, B, A
1109 Public Economics, 7,5 hp
      Grading scale: Fail, E, D, C, B, A
1301 Law and Economics, 7,5 hp
      Grading scale: Fail, E, D, C, B, A