



## Course syllabus

School of Business and Economics

Department of Economics and Statistics

1NA004 Economics I, 30 högskolepoäng

1NA004 Economics I, 30 credits

### **Main field of study**

Economics

### **Subject Group**

Economics

### **Level of classification**

First Level

### **Progression**

G1F

### **Date of Ratification**

Approved 2011-04-03

Revised 2013-06-11 by School of Business and Economics. Revision of literature, examination and prerequisites.

The course syllabus is valid from autumn semester 2013

### **Prerequisites**

Economics 30 credits, and Statistics 15 credits

## Objectives

### **Module 1: Mathematical Economics II, 7.5 credits**

After the module students should have:

- basic knowledge of mathematical methods
- knowledge of mathematical application in economics
- the ability to use mathematical methods applied on economic problems

### **Module 2: Econometrics I, 7.5 credits**

After the module the student should be able to:

- apply statistical methods, ordinary least squares methods, on economic relationship
- apply standardized diagnostic test and make corrections to the econometric model
- use standard time series methods such ARIMA-models

### **Module 3: Environmental Economics and Resource Allocation, 7.5 credits**

After the module the student is expected to have:

- a better understanding of how to , from an economic perspective, analyse and understand environmental problems and their origins
- an enhanced knowledge about economic measures against environmental problems
- an increased ability to critically analyse and evaluate economic measures in relation to different types of environmental problems and pollution
- a better understanding about the role of property rights in the economic system and especially in relation to environmental problems
- an increased knowledge about valuation and estimation of values related to the environment
- a better understanding about economics in relation to renewable and delectable resources
- a deeper understanding about the scientific discussion about the view of environmental problems, their origins and measures against them
- an enhanced knowledge in and analysis of different views of sustainable development

### **Module 4: Labour Economics I, 7.5 credits**

After the course the student should be able to:

- understand and discuss basic theories about the functioning of the labour market
- understand and discuss individual labour supply decisions and how individuals react to public policies and regulations
- describe the institutional relationships that exist in the labour market
- understand the wage setting behaviour of firms and the consequences for the labour market
- describe and understand labour market policies and its consequences at the individual and market level

### **Module 5: International Economics, 7.5 credits**

After completing this course, the student is expected to independently be able to use the toolkit of international economics to formulate and analyze various real international trade phenomena.

### **Module 6: Portfolio Choice Theory, 7.5 credits**

After the course the student should:

- be able to analyze conditions and developments on the financial markets
- have knowledge about financial assets, the risks of investing in financial assets and how financial assets can be used in risk management
- have knowledge about the formation of prices in financial markets and about the essential theories in finance
- have knowledge about interest rate theory, portfolio theory and derivatives theory
- be able to calculate financial relationships and the price of financial assets

### **Module 7: Econometrics II, 7.5. credits**

After the course the student should be able to:

- apply statistical methods, ordinary least squares methods, on economic

- relationship
- apply standardized diagnostic test and make corrections to the econometric model
- use discrete choice models and models for categorical variables

### **Module 8: Socio-Economics, 7.5 credits**

The student is expected to have:

- a further enlargement and a deepening of their knowledge and understanding of socioeconomic theories and research methods
- a further strengthening of their ability to understand and critically assess contemporary research in socioeconomics as regards the appropriateness of methods applied and relevance and importance of the results reported
- knowledge of the main discrepancies and transformations in the architecture of the European welfare, employment and productive systems
- an enhanced understanding of the intricate relationship between the productive, employment, industrial relations and social protection systems
- knowledge of the consequences and policy responses of major challenges, such as globalization and demographic changes, on the sustainability of our welfare state systems

### **Content**

The course is divided into 8 course modules out of which the student should choose 4, preferably two during the first half of the semester and two during the second half.

#### **Course modules:**

*First half of the semester*

Module 1: Mathematical Economics II, 7.5 credits

Module 2: Econometrics I, 7.5 credits

Module 3: Environmental Economics and Resource Allocation, 7.5 credits

*Second half of the semester*

Module 4: Labour Economics I, 7.5 credits

Module 5: International Economics, 7.5 credits

Module 6: Portfolio Choice Theory, 7.5 credits

Module 7: Econometrics II, 7.5 credits

Module 8: Socio-Economics, 7.5 credits

#### ***Module 1 Mathematical Economics II 7.5 credits***

This module deals with functions of one and several variables, optimization with and without restrictions, integration, vector and matrix algebra and difference equations. The course is applied and is focused on problem solving in economics.

#### ***Module 2 Econometrics I 7.5 credits***

The course module includes:

- ordinary least squares method
- model specification and diagnostic testing
- dynamic econometric models
- causality and the method of instrumental variable
- identification, estimation, diagnostics and forecasting of ARIMA models

### ***Module 3 Environmental Economics and Resource Allocation 7.5 credits***

This module contains economic aspects on origins to environmental problems, such as existents of public goods and external effects. In the course there are also analyses of population and the importance of property rights for environmental problems, also to what extent this could get difficulties in solving the problems. The course also contains discussions and analyses of problems with the valuing of environmental resources and the distribution of them. In relation to this there are also critical analyses and discussions about the choice of discount rates and views of handling risk.

Resource allocation and the use of resources are analysed with respect to renewable, non renewable and recyclable resources. The course also covers analyses and discussions about scarcity and different types of pollution and ways of handling them in an efficient way. The concept of sustainable development is discussed and analysed. Also there are discussions and analyses of different schools in economics and their view of environmental problems, the origins of them and ways of handling them.

### ***Module 4 Labour Economics I 7.5 credits***

This modules contains:

- analysis of demand and supply in the labour market
- human Capital Theory
- search theory
- wage setting under imperfect information
- application of theoretical models such as estimation of returns on investment in human capital and treatment effects of labour market policies. Analysis of the demand and supply side of the labour market

### ***Module 5 International Economics 7.5 credits***

The course treats theories and models of international trade and uses these theories and models to analyze current issues related to international integration. The first part treats driving forces behind, and effects from, international trade and mobility of input factors between countries. The other part treats the impact of trade barriers (trade policies) such as tariffs, import quotas and subsidies. Here it studied also the formation of trade actions (trade policies) and how they are influenced by different international trade agreements like the world trade organization.

### ***Module 6 Portfolio Choice Theory 7.5 credits***

The course includes the following topics:

- financial markets and financial assets
- risk, return, the efficient frontier for risky assets and optimal portfolio choice
- CAPM, APT and evaluation of risky investments
- interest rate calculations and analysis of the yield curve
- the determinants of the interest rate and the term structure of interest rates
- valuation of bonds, equities, forwards and options
- the law of one price, arbitrage and the efficient market hypothesis on the financial markets
- risk management with financial assets
- behavioural finance

***Module 7 Econometrics II 7.5 credits***

This course module contains:

- ordinary least squares method
- model specification and diagnostic testing
- maximum Likelihood method
- models for discrete choices
- models for categorical variables

***Module 8 Socio-Economics 7.5 credits***

This modules includes the following topics:

- welfare States Structure: an European perspective
- employment Systems and Working Time Regimes
- industrial Relations, Bargaining systems and Wage formation
- transitional Labour Market Approach
- varieties of Capitalism

**Type of Instruction**

For all modules: Obligatory parts are stated in the class Schedule.

**Module 1: Mathematical Economics, 7.5 credits**

Lectures and exercises.

**Module 2: Econometrics I, 7.5 credits**

Lectures and exercises.

**Module 3: Environmental Economics and Resource Allocation, 7.5 credits**

Lectures and seminars.

**Module 4: Labour Economics I, 7.5 credits**

Lectures and exercises.

**Module 5: International Economics, 7.5 credits**

The material will mainly be presented in lectures. There will, however, be seminars and exercises.

**Module 6: Portfolio Choice Theory, 7.5 credits**

Teaching can be in the form of lectures, group exercises and seminars. Participation in seminars is compulsory.

**Module 7: Econometrics II, 7.5 credits**

Lectures and exercises.

**Module 8: Socio-Economics, 7.5 credits**

Lectures and seminars. Seminars are compulsory.

**Examination**

The course is assessed with the grades Fail (U), Pass (G) or Pass with Distinction (VG).

**Module 1: Mathematical Economics, 7.5 credits** The examination is normally done by written examination. **Module 2: Econometrics I, 7.5 credits** The examination is

normally done by written examination.

**Module 3: Environmental Economics and Resource Allocation, 7.5 credits** The examination of the students is done through a written exam at the end of the course and through active participation in the seminars, including a written paper and an oral presentation at the seminar. To get the grade Pass, the student should understand and have a good command of the parts of the course. To get Pass with distinction it is required that the student also can master the parts in the course and relate them to each other in a critical way. To get the grade Pass or Pass with distinction it is required that the student writes a paper, which is presented at the seminar. For the paper and the participation in the seminar, the student can get Pass or Fail.

**Module 4: Labour Economics I, 7.5 credits** Written examination at the end of the course. The examination can also be done through accounts of prescribed working projects and/or oral examination. A combination of the aforementioned forms of examination is also possible.

**Module 5: International Economics, 7.5 credits** The course will be examined with a written exam.

**Module 6: Portfolio Choice Theory, 7.5 credits** Examination can be done through oral examination or written test during or after the course. Examination can also be done through accounts of prescribed working projects. A combination of aforementioned forms of examination can also be possible.

**Module 7: Econometrics II, 7.5 credits** Written examination at the end of the course and fulfilment of prescribed exercises.

**Module 8: Socio-Economics, 7.5 credits** The examination can be done through oral examination and/or written tests. The examination can also be done through accounts of prescribed working projects.

#### **For the full-semester course in general:**

Results are graded using one of the terms Passed with distinction, Pass or Fail, and A-F according to the ECTS scale. For the grade pass, the objectives have to be reached; the grade is based upon the degree to which the objectives are met. The weighing of the grades to the course grade is following the principles in the document "Principer för betygsrapportering dnr ELNU 2011/160".

Students who do not achieve a satisfactory result in the examinations are permitted to make a second attempt approximately 5-8 weeks after the normal examination date. The student will have a minimum of five occasions for written exams in relation to the syllabus to which the student was accepted. Usually 3 occasions per academic year.

#### **Course Evaluation**

A written course evaluation is carried out and compiled in a report, which is archived at the faculty. The results and possible measures taken are communicated by the course coordinator and presented to the students the next time the course is given, or in another way deemed suitable by the course coordinator. Other types of course evaluations, for example regular evaluations throughout the course or discussions with students, will be included and encouraged with the aim of ensuring continuous quality development.

#### **Required Reading and Additional Study Material**

##### ***List of references Module 1 - Mathematical Economics II 7.5 credits***

Sydsaeter, K., & Hammond, P.,  
*Essential Mathematics for Economic Analysis*.  
Prentice Hall. Latest edition. About 500 pages.

##### ***List of references Module 2 - Econometrics I 7.5 credits***

Stock, J.H. & Watson, M.W., *Introduction to Econometrics*. Pearson. Latest Edition. 840 pages.

Scientific articles and statistics provided by the teacher. About 100 pages.

***List of references Module 3 - Environmental Economics and Resource Allocation 7.5 credits***

Teitenberg, T., & Lewis, L., *Environmental and Natural Resource Economics*. Addison Wesley. Latest edition. 595 pages.

Söderbaum, P., *Ecological Economics*. Earthscan Publications Ltd. Latest edition. 134 pages.

Articles

***List of references Module 4 - Labour Economics I 7.5 credits***

Borjas, G. J., *Labour Economics*. McGraw-Hill International Editions. Latest edition. 500 pages.

Articles, 150 pages.

***List of references Module 5 - International Economics 7.5 credits***

Robert C. Feenstra and Alan M. Taylor, *International Trade*, Worth Publishers, latest edition (2008)

***List of references Module 6 - Portfolio Choice Theory 7.5 credits***

Elton, E., Grube, M., Brown, S. & Goetzmann, W. *Modern Portfolio Theory and Investment Analysis* (2007). 7th edition. John Wiley & sons inc. 700 pages.

Scientific articles within Financial Economics. 150 pages.

***List of references Module 7 - Econometrics II 7.5 credits***

Gujarati, Damodar N, *Basic econometric*. McGraw-Hill. Senaste upplagan. 979 sidor.

***List of references Module 8 - Socio-Economics 7.5 credits***

Esping-Anderssen, G., & Amable, B., (1990.) *The Three Worlds of Welfare Capitalism*. Polity Press. 248 pages.

The Diversity of Modern Capitalism, Oxford University Press. 2003. 310 pages.

Articles, 200 pages.