Linnæus University

Jnr: 2014/2841-3.1.2

Course syllabus

School of Business and Economics
Department of Economics and Statistics

1NA016 Fördjupad nationalekonomi I, 30 högskolepoäng
Intermediate Economics I, 30 credits

Main field of study
Economics

Subject Group
Economics

Level of classification
First Level

Progression
G1F

Date of Ratification
Approved by School of Business and Economics 2014-10-01
The course syllabus is valid from autumn semester 2015

Prerequisites
Economics 30 credits, including credits in basic micro- and macroeconomics, and Statistics 15 credits or course credits in time series analysis and regression analysis, and English B/English 6, or equivalent.

Objectives

Module 1: Mathematical Economics II, 7.5 credits
After finished module, the student is expected to able to:

- simplify linear and non-linear functions and interpret economic information from such relations
- solve linear and non-linear equations and to solve systems of equations
- apply the rules of derivation to analyse economic phenomena such as profit maximisation and cost minimisation
- solve optimisation problem for continuous functions in one and several dimensions with and without restrictions
- determine the degree of homogeneity of a function
- determine if, and when, a function is convex or concave
- using integral calculus to determine economic areas such as consumer and producer surplus
- give an overview of matrixes and determinants and be able to perform simpler computations

Module 2: Econometrics, 7.5 credits
After finished module, the student is expected to be able to:

- formulate a hypothesis based on economic theory and specify a testable

- formulate a hypothesis based on economic theory and specify a testable econometric model
- explain and describe regression models (simple and multiple), their properties and inference
- identify, explain and solve for problems such as heteroscedasticity, autocorrelation and multicollinearity
- explain and interpret time series models such as ARIMA and ARCH / GARCH
- explain and identify Granger-causality, (non-)stationarity and co-integration
- apply regression models to estimate and analyze economic relationships
- explain the possibilities and limitations associated with different data when using regression analysis
- explain and understand the intuition of the most common statistical methods to isolate causal effects
- interpret results in written and oral form from a regression analysis in both a scientific and a popular way
- use statistical software to perform data processing and estimation

Module 3: Intermediate Microeconomics, 7.5 credits
After finished module, the student is expected to be able to:

- verbally, graphically and mathematically determine the consumers utility maximising choice in different kind of consumer choice settings
- use demand and supply models in order to analytically and graphically derive equilibrium on different types of markets
- verbally, graphically and mathematically motivate the producers' choice
- identify and describe market failures and explain how policy can correct such failures
- apply basic game theory to explain decision making on market with imperfect competition

Module 4: Intermediate Macroeconomics, 7.5 credits
After finished module, the student is expected to be able to:

- explain and apply basic models for consumption and investment
- derive and apply models for economic growth
- explain, verbally and graphically, and apply the Mundell-Fleming model
- verbally, graphically and mathematically motivate why involuntary unemployment could exist
- derive and apply static and dynamic models for aggregate demand and aggregate supply
- verbally, graphically and mathematically draw conclusions for stabilization policies on macro economic outcomes, such as GDP and inflation
- identify and critically review limitations of and assumptions made in macro economic models
- apply economic models on current issues in the macro economy

Content
The course includes the following modules:

Module 1: Mathematical Economics II, 7.5 credits
The module contains:

- linear and non-linear equations
- algebra
- equation solving
- power functions
- exponential- and logarithmic functions
- economic functions
- rules of derivation

- elasticities
- one variable optimization
- homogeneity
- convexity and concavity
- several variable optimisation
- optimisation with restrictions
- the lagrange multiplier and its economic interpretation
- compute economic areas with integrals
- solving integrals with partial integration
- matrixes
- matrix algebra
- solving systems of equations with matrix algebra
- solving systems of equations with the use of Cramers rule

Module 2: Econometrics, 7.5 credits
The purpose of the module is to go through fundamental regression analysis which is frequently used in economics.

The module covers the following topics:

- Ordinary Least Squares
- model specification and diagnostics testing
- dynamic econometrics models
- causality and instrumental variables
- identification, estimation, diagnostic testing and prediction of ARIMA models

Module 3: Intermediate Microeconomics, 7.5 credits
The module is a continuation of basic micro economics. The following parts are included in the module:

- consumer theory
- market equilibrium
- producer theory
- analysis of different market forms
- game theory
- impact of externalities and taxation of markets and regulation on markets
- uncertainty, asymmetric information and moral hazard

Module 4: Intermediate Macroeconomics, 7.5 credits
The module aims to provide enhanced knowledge in macroeconomic theory. The module covers the following topics:

- production, interest rates and consumption
- capital accumulation and growth
- wage and price setting
- unemployment
- monetary and fiscal policy
- the open economy
- business cycles and policymaking

Type of Instruction

Module 1: Mathematical Economics II, 7.5 credits
Lectures and group exercises.

Module 2: Econometrics, 7.5 credits
Lectures, laboratory sessions and obligatory seminars.

Module 3: Intermediate Microeconomics, 7.5 credits

Module 3: Intermediate Microeconomics, 7.5 credits
Lectures and exercises.

Module 4: Intermediate Macroeconomics, 7.5 credits
Lectures and exercises.

Concerning all modules:
Obligatory parts are stated in the schedule.

Examination

The course is assessed with the grades A, B, C, D, E, Fx or F.

Module 1: Mathematical Economics II, 7.5 credits
The assessment of the performance of the students is based on written examination and hand-ins.

Module 2: Econometrics, 7.5 credits
The assessment of the performance of the students is based on the laboratory session, oral and written presentations and written examination.

Module 3: Intermediate Microeconomics, 7.5 credits
The assessment of the performance of the students is based on a written assignment and a written examination.

Module 4: Intermediate Macroeconomics, 7.5 credits
The assessment of the performance of the students is based on written assignment and written examination.

Concerning all modules:
The grade A constitutes the highest grade on the scale and the remaining grades follow in descending order where the grade E is the lowest grade on the scale that will result in a pass. The grade F means that the student's performance is assessed as fail.

After each regular examination there will be at least one new examination in close proximity to the date the results of the regular exam were posted. A minimum of five occasions for written exams will be offered in relation to the syllabus to which the student was accepted. Usually three occasions per academic year are offered. Students that fail reports can complement after instructions from the examiner to obtain a pass grade.

Grading criteria for the A–F scale are communicated in writing to the student by the start of the course/module at the latest, as well as how grades on separate elements of examination are weighed to a final course grade.

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.

Credit Overlap

The course cannot be included in a degree along with the following course/courses of which the content fully, or partly, corresponds to the content of this course:The course overlaps 1NA005 with 100 %. Each module has these overlapping courses:

1NA016:1 overlaps 1NA005:1, 1NA010, 1NA002, 1NA004:1 and 1NA070 with 7.5 credits each
1NA016:2 overlaps 1NA005:2, 2NA001, 2FE045:2, 1NA004:2, 1NA011 and 1NA071 with 7.5 credits each
1NA016:3 overlaps 1NA005:3, 1NA012, 2NA003 and 1NA072 with 7.5 credits each
1NA016:4 overlaps 1NA005:4, 1NA013, 2NA006 and 1NA073 with 7.5 credits each

Required Reading and Additional Study Material

Required reading

Module 1: Mathematical Economics II, 7.5 credits

Sydsaeter, K. & Hammond, P. *Essential Mathematics for Economic Analysis* Prentice Hall. Latest edition. 508 pages.

Module 2: Econometrics, 7.5 credits

Gujarati, D.N. *Basic Econometrics.* McGraw-Hill. Latest edition. 900 pages.

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

Module 3: Intermediate Microeconomics, 7.5 credits

Varian, H.R., *Intermediate Microeconomics.* Norton. Latest edition. 700 pages.

Scientific articles. About 100 pages.

Module 4: Intermediate Macroeconomics, 7.5 credits

Gottfries, N. *Macroeconomics*. Palgrave MacMillan. Latest edition. 539 pages.

Scientific articles. About 200 pages.