



School of Economics and Management

## NEKN31, Economics: Advanced Econometrics, 7.5 credits

*Nationalekonomi: Avancerad Ekonometri, 7,5 högskolepoäng*

Second Cycle / Avancerad nivå

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### Details of approval

The syllabus was approved by The Board of the Department of Economics on 2011-06-07 and was last revised on 2023-10-17. The revised syllabus comes into effect 2023-10-17 and is valid from the spring semester 2024.

### General information

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

*Language of instruction:* English

Teaching may be in Swedish if all registered students have a good knowledge of Swedish.

*Main field of study*

Economics

*Specialisation*

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

### Learning outcomes

#### Knowledge and understanding

Students shall:

- have a deeper understanding of linear regression models, including the representation using matrix algebra,
- be able to estimate linear and nonlinear models using least squares, generalised least squares, maximum likelihood and instrumental variables, and have an understanding of when these methods should be used,
- be able to formulate and test linear and nonlinear hypotheses,
- be able to analyse cross-sectional models with limited dependent variables,
- be able to analyse stationary and non-stationary time series models,

- be able to analyse panel data models,
- be able to generalise their knowledge to econometric problems that haven't been treated during the course,
- be able to understand relevant empirical and econometric research.

### **Competence and skills**

Students shall have the ability to independently:

- apply advanced econometric tools to economic problems,
- evaluate whether the assumptions made by the chosen model are reasonable,
- apply rational modelling strategies even when basic assumptions must be rejected,
- implement econometric analyses using econometric software,
- give an account of and discuss their econometric abilities.

### **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 at the master level.

### **Course content**

This course gives the basis that is needed to enable students to empirically analyse economic data without making unrealistic assumptions. Modern econometric techniques are treated, and at the same time considerable emphasis is placed on fundamental econometric thinking. Theoretical studies are interwoven with practical applications in the form of computer exercises, which are carried out using econometric software on a PC.

### **Course design**

1. Teaching: Tuition consists of lectures and exercises.

### **Assessment**

1. Examination: The examination consists of a written exam and 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 exercises can only be carried forward to examinations taken the same term. Other forms of examination may be used 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.

## Grades

Grading scale includes the grades: Fail, E, D, C, B, A

1. Grading: 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

Students admitted to the Master programme in Economics are qualified for this course. For other students at least 90 ECTS-credits in economics at the undergraduate level are needed for admission to all master courses in economics. To be admitted to this particular course these credits must include a course in intermediate microeconomic analysis (e.g. NEKG21) and a course in intermediate econometrics (e.g. NEKG31) or equivalent courses.

## Further information

1. Transitional regulations: This course replaces NEKM23 "Advanced Econometrics".

2. Limitations in the period of validity: –

3. Limitations: This course may not be included in the same degree as NEK711 "Econometrics D" or NEKM23 "Advanced Econometrics".

4. Similar courses: –

5. Limitations in renewed examination: –