The 2015-Curriculum for the Master’s Programme in Economics

February 2017 revision

1 Introduction

The 2015-Curriculum for the Master’s Programme in Economics consists of two parts: a common curriculum and a programme-specific curriculum. The Common Part applies to all Bachelor’s and Master’s Programmes at the Faculty of Social Sciences, and lays out the common rules of the all the social-science programmes.

The Programme Curriculum specific to Economics describes the academic elements of the Master’s Programme in Economics.

The Dean of the Faculty of Social Sciences approved this curriculum and the curriculum becomes effective on 1 September 2016.

Interim Provisions – Discontinuation of the 2008-Master’s Curriculum:

The 2008-master’s curriculum will be discontinued on 31 January 2017. At this point, students enrolled under the 2008-master’s curriculum will be transferred to the 2015-master’s curriculum.

Until this date, students who wish to transfer to the 2015 curriculum may request a transfer from the Board of Studies.

2 Title and Affiliation

On successful completion of the Master’s Programme in Economics, graduates are entitled to use the title cand.polit. or the optional title cand.o econ. In English: Master of Science (MSc) in Economics. By choosing particular courses – as described in this curriculum – graduates earn the right to use the title Cand.polit. (finansiering). In English: Master of Science (MSc) in Economics (Finance).

The programme is under the orders of the Board of Studies in Economics.

The Corps of External Examiners of the Economics Programme provides all external examiners for the programme.

3 Purpose and Competence Profile

3.1 Purpose

The Master’s Programme in Economics is an independent and complete research-based education. The programme is aimed at further developing the knowledge, skills and competences that students have acquired through their bachelor education. The aim of the Master’s Programme is to:
1. Provide the students with the option to qualify and specialize in economic theory and econometric methods and to learn from other social science disciplines.

2. Equip students with advanced academic knowledge, theoretical qualifications and methodological skills so that students are capable of independently identifying, formulating and solving advanced complex problems in economics and econometrics.

3. Equip students with the competences necessary to find employment in economic professions as well as qualify them for admission to PhD programme in economics.

3.2 Competence Profile

The aim of the research based Master’s Programme at University of Copenhagen is to offer students a solid and internationally recognized development of their competencies in economics, econometrics and the applications of these in economics and business problems. The education offers students a large variety of freedom of choice which allows them to specialize in advanced economics and econometrics. Moreover, there are options also to choose to combine these with studies within other social science disciplines. Students can further obtain a degree in economics with a specialization in finance.

The education has been constructed in order to further the ability of continuing, critical, and personal knowledge development. A number of advanced economic theory and methodological courses will bring students’ knowledge to a high level by international standards.

After having completed the education, a Master in Economics should possess the following knowledge, skills and competences:

Knowledge

- Deep and comprehensive knowledge about advanced aspects of economic theory
- Knowledge about how economic theory and methods can be applied on contemporary economic problems
- Knowledge of advanced statistical and econometric methods
- Critical and independent reflexion over advanced economic theory and methods

Skills

- Independent and flexibly be able to use acquired knowledge on advanced statistical and econometric techniques
- Use advanced economic theory in a long list of fields, e.g. public economics, development economics, international economics, finance etc.
- Skills in analysing a complex economic problem using advanced economic theory and methods
Independently be able to construct, conduct and interpret own analyses using statistical and econometric methods
Be able to disseminate complex economic problems in writing and orally

Competences

Independently be able to identify and acquire new research based knowledge on advanced economic theory and methods and master advanced economic theories and models
Independently be able to formulate an analytical solution to an economic problem by combining advanced economic theory, data and statistical and econometric methods
Be able to define and carry through complicated economic analyses in a competent manner and to explain and interpret the analytical results and draw own policy conclusions

3.3 Admission Requirements and Restrictions
The programmes below directly qualifies graduates to the Master’s Programme in Economics at the University of Copenhagen:

- The Bachelor’s Programme in Economics at the University of Copenhagen
- The Bachelor’s Programme in Economics – the Socioeconomic Line at the University of Southern Denmark
- The Bachelor’s Programme in Economics at Aarhus University
- The Bachelor’s Programme in Mathematics-Economics at the University of Copenhagen
- The Bachelor’s Programme in Mathematics-Economics at Aarhus University
- The Bachelor’s Programme in Agricultural Economics at the University of Copenhagen *
- The Bachelor’s Programme in Economics and Business Administration specialised in Mathematics (HA-Matematik) at CBS. *

Graduates with a Bachelor in Economics from the University of Copenhagen have a legal claim to admission to the Master’s Programme in Economics, if they apply for admission directly after completion of their bachelor’s programme.

*From the summer intake 2017 the Bachelor’s Programme in Agricultural Economics at the University of Copenhagen and the Bachelor’s Programme in Economics and Business Administration specialised in Mathematics (HA-Matematik) at the CBS or Aarhus University no longer directly qualifies graduates for admission to the master programme. Graduates holding one of these degrees must instead meet the entry requirements.
Applicants from other universities in Denmark, including applicants who have completed a Bachelor Programme in Economics and Business Administration (HA-Almen) at CBS, AU or SDU, or a Bachelor in Economics at AAU and abroad, may be admitted on the basis of a specific and individual, academic assessment, provided that their qualifications are equivalent to the Bachelor Programme in Economics at the University of Copenhagen. The assessment will consider the requirements below:

- The programme must be at the same level as the Bachelor’s Programme in Economics at the University of Copenhagen
- Estimated qualifications corresponding to microeconomics, macroeconomics, and econometrics at the highest level in the Bachelor’s Programme in Economics (i.e. Microeconomics II, Macroeconomics II, Econometrics I and Econometrics II)
- Language proficiency corresponding to English at level B in the Danish upper-secondary school. Non-Danish students enrolled at the master’s programme must document their English proficiency, if their native language is another language than English
- A professional bachelor degree is not considered sufficient

Up until 1 September 2017, admission to the Master’s Programme in Economics is not subject to restriction.

Starting from September 2018, admission to the Master’s Programme in Economics will be restricted. Information on the number of places along with the selection criteria in case of more applicants than places available is posted on the website http://studies.ku.dk/masters/economics/

3.3.1 Supplemenenting
From 1 September 2016 only the Bachelor’s degree will be included in the assessment of the admission requirements to the Master’s programme. This means that supplementary courses and the like will not be taken into account in the assessment.

4 The Content and Academic Profile of the Programme
See section 6, ‘Course catalogue’, for a full description of the content, objectives, etc. of the all courses in the programme. Additional and more elaborate information is available in the online course catalogue at http://kurser.ku.dk/.

The programme consists of constituent courses corresponding to 90 ECTS credits (including the thesis), providing students with the particular academic competences associated with the programme. All courses and seminars at the Department of Economics at the University of Copenhagen are defined as constituent. When transferring credits from other institutions, including those from stays abroad, the total of non-constituent courses (neighbouring courses) cannot exceed 30 ECTS (see section 4.3).

The programme consists of the following modules:

- 15 ECTS Compulsory Courses: ‘Microeconomics III’ (7.5 ECTS) and ‘Macroeconomics III’ (7.5 ECTS). The students must take these during their first semester. Students, who already passed these
courses as part of their admission qualifications, must take elective courses corresponding to 15 ECTS instead. Such students must take at least 10 ECTS externally assessed elective courses, and at least 35 ECTS elective courses assessed with grades.

- 15 ECTS Economics Seminars.
- 60 ECTS Elective Courses in Economics. At least 20 ECTS of these must be assessed with grades. For students, who passed Microeconomics III and Macroeconomics III as part of their admission qualifications, at least 35 ECTS elective courses must be graded.
- A thesis equal to 30 ECTS (see the University Programme Order (Uddannelsesbekendtgørelsen)). The thesis must be written during the second year.

Elective courses in economics include courses offered by the Department of Economics, as well as courses in economic theory and methodology, econometrics, and mathematics offered at other programmes (see section 4.3. on credits). As part of the elective courses, students may take a maximum of 30 ECTS neighbouring courses, i.e. courses in the social sciences in the broadest sense.

A 30 ECTS mobility window may be taken in the second or third semester.

The programme structure is outlined below. Students are free to move seminars and elective courses around. The thesis must be finished during the second year and compulsory courses are fixed to the first semester:

<table>
<thead>
<tr>
<th>4th semester</th>
<th>Thesis, 30 ECTS credits (or 30 ECTS electives/seminars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3rd semester</td>
<td>Elective courses (22.5 ECTS) (or thesis)</td>
</tr>
<tr>
<td>2nd semester</td>
<td>Elective courses (22.5 ECTS)</td>
</tr>
<tr>
<td>1st semester</td>
<td>Elective courses (15 ECTS)</td>
</tr>
</tbody>
</table>

From the group of elective courses in economics, students may choose to write up to two co-curricular written assignments, each equal to 0.5–7.5 ECTS. See section 6 on co-curricular written assignments.

A list of compulsory and elective courses in economics is found in section 6.1 (see also section 4.3 on credit transfers).

In unusual circumstances, the Board of Studies may grant exemptions from the placement of the fixed elements.

4.1 Specialisations

Students at the Master’s Programme in Economics may choose one particular line of specialisation, i.e. the Master’s in Economics (Finance).
To qualify for the title Cand.polit. (finansiering), in English: Master of Science (MSc) in Economics (Finance), students must have taken at least 45 ECTS F-marked finance courses, completed at least one F-marked economic seminar, and written their thesis within the field of financing.

Students specialising in finance must specify this on their thesis contract.

4.2 Course Registration
The University enrolls students on ‘Microeconomics III’ and ‘Macroeconomics III’ in their first semester, provided that the students have not previously passed elements corresponding to these courses. The courses must be passed before the end of the second semester. Students are personally responsible for registering for all other courses and examinations during the registration period. When registering for a course, the student will automatically be registered for the associated exam.

Registration for a course is binding when the late-registration period ends. This means that the course must be included in the student’s study programme, and that it cannot be replaced by other courses.

4.2.1 Allocation of places on oversubscribed elective courses
If a course is oversubscribed during the course registration period, the allocation of places will be by lot. Students who have not been allocated a place on a given course will be contacted by the study administration.

4.2.2 Allocation of places on seminars
Students must choose three priorities to make sure they are allocated a place. Students who only choose one seminar and are not allocated a place will not be contacted by the study administration.

4.3 Credits
For a course to be transferred to the Master’s Programme, it must deal with economic theory or methodology, econometrics or mathematics. If the course falls within the field of social sciences in the broadest sense, and/or is assessed to be relevant to the student’s individual programme, the university may approve the credit transfer as a non-constituent course (neighbouring course).

Students may transfer a maximum of 60 ECTS, of which a maximum of 30 ECTS may be neighbouring courses. No more than one seminar can be transferred. The Board of Studies may grant exemptions from these limits.
5 Exams

5.1 Assessment and Grading
The Examination Order (Eksamensbekendtgørelsen) stipulates that external examiners must evaluate at least one third of the ECTS of the master’s programme (i.e. 40 ECTS). This rule is satisfied by 100% external assessment of the thesis (30 ECTS) as well as the two seminars.

In addition, every semester 8 courses with written exams at PBV are selected to external co-examination of 20% of the exam papers. Courses with an oral exam have always an external co-examiner, if the course has only one teacher. Courses with a take-home exams have never external co-examiner, unless very special circumstances apply.

Co-curricular written assignments corresponding to 5.5 ECTS or more are subject to external assessment. Details of the evaluation method of each course are described in section 6.1, and also in the Course Catalogue at www.kurser.ku.dk/.

The Examination Order (Eksamensbekendtgørelsen) stipulates that at least two thirds of the ECTS of the master’s programme (i.e. 80) must be assessed with grades. This requirement is satisfied, when the thesis (30 ECTS), ‘Microeconomics III’ and ‘Macroeconomics III’ (15 ECTS), the seminars (15 ECTS), as well as at least another 20 ECTS are assessed with grades. Students who passed ‘Microeconomics III’ and ‘Macroeconomics III’ during their bachelor’s programme must take at least 35 ECTS graded elective courses.

The majority of courses offered by the Department of Economics are graded according to the 7-point grading scale. However, a small number of courses are assessed with Pass/Fail. When this is the case, it is noted in the course description.

5.2 Exam Language
If a course organiser teaches a course in a foreign language, the examination will be offered in this language. The exam language of all courses will appear on the master’s diploma.

Master’s students who wish to document that they have completed the English-language version of the Master’s Programme in Economics must have completed all of their examinations in English.

5.3 Formal Requirements for written papers
Reference is made to section 4.5 on formal requirements of the common curricula.

The following is a clarification of the formal requirements for written assignments and exams at Department of Economics.
A standard page is equal to **2400 keystokes** including spaces.

Included in the total number of pages is:

- the main text
- footnotes
- end notes
- equations
- formulas
- preface

Excluded from the total number of pages is:

- cover page
- table of contents
- summary/abstract
- list of references/ bibliography
- appendices
- figures
- graphs
- tables

### 6 Course Catalogue

#### 6.1 Outline of Programme Elements:

The table below lists the programme elements by name, number of ECTS, and prerequisite requirements.

*e/f/s* indicates the semester in which the courses are usually offered (*e* = autumn, *f* = spring, *s* = summer), based on the initial letters of the Danish words. *(F)* indicates that the course is part of the finance line.

**Compulsory Courses:**

<table>
<thead>
<tr>
<th>Course Name</th>
<th>ECTS Credits</th>
<th>Prerequisite Requirements</th>
<th>Exam Description</th>
<th>Assessment</th>
<th>External Assessment</th>
<th>Re-sit Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>e/f Microeconomics III</td>
<td>7.5</td>
<td>Yes</td>
<td>2-hour closed-book written examination</td>
<td>Grade</td>
<td>Random sample</td>
<td>Same but possibly oral exam</td>
</tr>
</tbody>
</table>
### Economics Elective Courses:

<table>
<thead>
<tr>
<th>Name of elective course</th>
<th>ECTS credits</th>
<th>Prerequisite requirements</th>
<th>Examination</th>
<th>Assessment</th>
<th>Extern al assess</th>
<th>Re-sit Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Development Economics (Micro Aspects)</td>
<td>7.5</td>
<td>Yes</td>
<td>24-hour open-book take-home exam</td>
<td>Grade</td>
<td>No</td>
<td>Same but possibly oral exam</td>
</tr>
<tr>
<td>Advanced Development Economics (Macro Aspects)</td>
<td>7.5</td>
<td>No</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>Random sample</td>
<td>Same but possibly oral exam</td>
</tr>
<tr>
<td>Advanced Development Economics: Applied Macroeconomic and Policy Analysis</td>
<td>7.5</td>
<td>No</td>
<td>48-hour open-book take-home exam</td>
<td>Grade</td>
<td>No</td>
<td>Same but possibly oral exam</td>
</tr>
<tr>
<td>Advanced Industrial Organisation</td>
<td>7.5</td>
<td>No</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>Random sample</td>
<td>Same but possibly oral exam</td>
</tr>
<tr>
<td>Advanced International Trade</td>
<td>7.5</td>
<td>No</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>Random sample</td>
<td>Same but possibly oral exam</td>
</tr>
</tbody>
</table>
| Advanced Macroeconometrics (F) | 7.5 | No | 48-hour open-book take-home exam | Grade | No | Same but possibly oral exam.
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Exam Type</th>
<th>Duration</th>
<th>Grade Type</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Macroeconomics</td>
<td>7.5</td>
<td>Yes</td>
<td>3-hour closed-book written exam</td>
<td>Grade Rando m sample</td>
<td>Same but possibly oral exam</td>
</tr>
<tr>
<td>Advanced Microeconometrics</td>
<td>7.5</td>
<td>No</td>
<td>Oral exam without preparation, without study aids</td>
<td>Grade Yes</td>
<td>Same, i.e. oral exam</td>
</tr>
<tr>
<td>Advanced Strategic Management</td>
<td>7.5</td>
<td>No</td>
<td>Oral exam with synopsis exam</td>
<td>Grade Yes</td>
<td>Same</td>
</tr>
<tr>
<td>Anvendte generelle ligevægtsmodeller (in Danish only)</td>
<td>7.5/12.5</td>
<td>Yes</td>
<td>Oral with preparation and open book/oral without preparation, with submission of master’s assignment</td>
<td>Grade Yes</td>
<td>Same, i.e. oral /same, i.e. oral with submission of master’s assignment</td>
</tr>
<tr>
<td>Applied Econometric Policy Evaluation</td>
<td>7.5</td>
<td>No</td>
<td>12-hours open-book take-home assignment</td>
<td>Grade No</td>
<td>Same, but possibly oral exam</td>
</tr>
<tr>
<td>Behavioural and Experimental Economics</td>
<td>7.5</td>
<td>Yes</td>
<td>2-hour closed-book written exam</td>
<td>Grade Rando m sample</td>
<td>Same but possibly oral exam</td>
</tr>
<tr>
<td>Behavioural Economics and Finance (F)</td>
<td>7.5</td>
<td>Yes</td>
<td>2-hour closed-book written exam</td>
<td>Grade Rando m sample</td>
<td>Same but possibly oral exam</td>
</tr>
<tr>
<td>Course Title</td>
<td>ECTS</td>
<td>Exam Type</td>
<td>Exam Duration</td>
<td>Exam Format</td>
<td>Grade</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Behavioral Finance (F) (tidl. Behavioral Economics and Finance)</td>
<td>7.5</td>
<td>Yes</td>
<td>2-hour closed-book written exam</td>
<td>Grade</td>
<td>Random sample</td>
</tr>
<tr>
<td>Contract Theory</td>
<td>7.5</td>
<td>Yes</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>Random sample</td>
</tr>
<tr>
<td>Corporate Finance and Incentives (F)</td>
<td>7.5</td>
<td>Yes</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>Random sample</td>
</tr>
<tr>
<td>Corporate Finance Theory (F)</td>
<td>7.5</td>
<td>Yes</td>
<td>14-days take-home assignment</td>
<td>Pass/Fail</td>
<td>No</td>
</tr>
<tr>
<td>e/f/s Datamatik I (in Danish only)</td>
<td>7.5</td>
<td>No</td>
<td>4–5 compulsory assignments and individual assignment tests; in addition, option of conversations with lecturer (continuous assessment)</td>
<td>Pass/Fail</td>
<td>No</td>
</tr>
<tr>
<td>Demography</td>
<td>7.5</td>
<td>Yes</td>
<td>Project</td>
<td>Grade</td>
<td>No</td>
</tr>
<tr>
<td>Development Economics</td>
<td>7.5</td>
<td>No</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>Random sample</td>
</tr>
<tr>
<td>Dynamiske modeller (in Danish only)</td>
<td>7.5</td>
<td>Yes</td>
<td>3-hour written exam with certain study aids</td>
<td>Grade</td>
<td>Random sample</td>
</tr>
<tr>
<td>Subject</td>
<td>Credits</td>
<td>Exam Format</td>
<td>Exam Duration</td>
<td>Grade Format</td>
<td>Exam Type</td>
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<tr>
<td>Economic Growth (F)</td>
<td>7.5</td>
<td>Yes</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>Random sample</td>
</tr>
<tr>
<td>Economic Sociology</td>
<td>7.5</td>
<td>No</td>
<td>24-hour open-book take-home exam</td>
<td>Grade</td>
<td>No</td>
</tr>
<tr>
<td>Economics of Banking (F)</td>
<td>7.5</td>
<td>No</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>Random sample</td>
</tr>
<tr>
<td>Economics of Education</td>
<td>7.5</td>
<td>Yes</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>Random sample</td>
</tr>
<tr>
<td>Economics of the Environment, Natural Resources and Climate Change</td>
<td>7.5</td>
<td>No</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>Random sample</td>
</tr>
<tr>
<td>Economics of the EU</td>
<td>7.5</td>
<td>Yes</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>The same but option of oral exam</td>
</tr>
<tr>
<td>Economics of Exchange Rates (F) (former International Finance)</td>
<td>7.5</td>
<td>Yes</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>The same but option of oral exam</td>
</tr>
<tr>
<td>Erhvervsret (F) (in Danish only)</td>
<td>7.5</td>
<td>No</td>
<td>3-hour open-book written exam</td>
<td>Grade</td>
<td>Random sample</td>
</tr>
<tr>
<td>Family Economics</td>
<td>7.5</td>
<td>Yes</td>
<td>Project</td>
<td>Grade</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Same</td>
<td></td>
</tr>
<tr>
<td>Course</td>
<td>Credits</td>
<td>Exam</td>
<td>Assessment</td>
<td>Grade</td>
<td>Random Sample</td>
</tr>
<tr>
<td>-------------------------------------------------</td>
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<tr>
<td>e Financial Econometrics A (F)</td>
<td>7.5</td>
<td>Yes</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>Rando m sample</td>
</tr>
<tr>
<td>s Financial Econometrics B (F)</td>
<td>7.5</td>
<td>Yes</td>
<td>Submission of assignments (continuous assessment)</td>
<td>Pass/Fail</td>
<td>No</td>
</tr>
<tr>
<td>e Financial Frictions, Liquidity, and the Business Cycle (F)</td>
<td>7.5</td>
<td>Yes</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>Rando m sample</td>
</tr>
<tr>
<td>f Financial Markets (F)</td>
<td>7.5</td>
<td>No</td>
<td>48-hour open-book take-home exam</td>
<td>Grade</td>
<td>No</td>
</tr>
<tr>
<td>f Foundations in Behavioural Economics</td>
<td>7.5</td>
<td>No</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>Rando m sample</td>
</tr>
<tr>
<td>e Game Theory (F)</td>
<td>7.5</td>
<td>Yes</td>
<td>Oral with preparation, without study aids</td>
<td>Grade</td>
<td>Yes</td>
</tr>
<tr>
<td>f Health Economic Evaluations (former Health Economics)</td>
<td>7.5</td>
<td>No</td>
<td>Project</td>
<td>Grade</td>
<td>No</td>
</tr>
<tr>
<td>e/f Health Economics</td>
<td>7.5</td>
<td>No</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>Rando m sample</td>
</tr>
<tr>
<td>e History of Economic Thought</td>
<td>7.5</td>
<td>Yes</td>
<td>7-days open-book take-home exam</td>
<td>Grade</td>
<td>No</td>
</tr>
<tr>
<td>Course</td>
<td>ECTS</td>
<td>Type</td>
<td>Assessment Method</td>
<td>Grade/Email</td>
<td>Sharing of Exam</td>
</tr>
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<tr>
<td>e ICT Applied</td>
<td>7.5</td>
<td>No</td>
<td>4–5 compulsory assignments and individual test (continuous assessment)</td>
<td>Pass/Fail</td>
<td>No</td>
</tr>
<tr>
<td>f Industrial Organisation</td>
<td>7.5</td>
<td>No</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>Rando m sample</td>
</tr>
<tr>
<td>f International Economics (F)</td>
<td>7.5</td>
<td>Yes</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>Rando m sample</td>
</tr>
<tr>
<td>f International Finance (F)</td>
<td>7.5</td>
<td>Yes</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>Rando m sample</td>
</tr>
<tr>
<td>e International Macroeconomics (F)</td>
<td>7.5</td>
<td>Yes</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>Rando m sample</td>
</tr>
<tr>
<td>f Labour Economics</td>
<td>7.5</td>
<td>No</td>
<td>12-hour open-book take-home exam</td>
<td>Grade</td>
<td>No</td>
</tr>
<tr>
<td>e/f Lineær modeller (in Danish only)</td>
<td>7.5</td>
<td>Yes</td>
<td>3-hour written exam with certain study aids</td>
<td>Grade</td>
<td>Rando m sample</td>
</tr>
<tr>
<td>f Managerial Accounting (F)</td>
<td>7.5</td>
<td>No</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>Rando m sample</td>
</tr>
<tr>
<td>Course</td>
<td>Credits</td>
<td>Exam Type</td>
<td>Grade Requirement</td>
<td>Sample Exam Type</td>
<td>Oral Exam Possible</td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
<td>---------</td>
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<td>-------------------</td>
<td>------------------</td>
<td>-------------------</td>
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<tr>
<td>Marketing</td>
<td>7.5</td>
<td>Yes</td>
<td>3-hour open-book</td>
<td>Random sample</td>
<td>Same but possible</td>
</tr>
<tr>
<td>Mechanism Design</td>
<td>7.5</td>
<td>Yes</td>
<td>7-day open-book</td>
<td>Grade</td>
<td>Oral exam</td>
</tr>
<tr>
<td>Monetary Policy (F) (former Monetary Economics: Macro Aspects)</td>
<td>7.5</td>
<td>No</td>
<td>3-hour closed-book</td>
<td>Grade</td>
<td>Same but possible</td>
</tr>
<tr>
<td>Multivariat analyse og kategoriserede data (in Danish)</td>
<td>7.5</td>
<td>Yes</td>
<td>14-day open-book</td>
<td>Grade</td>
<td>Oral exam</td>
</tr>
<tr>
<td>Offentlig forvaltning – jura og politik (tidl. Offentlig forvaltning og politik/Forvaltningslære) (In Danish only)</td>
<td>7.5</td>
<td>No</td>
<td>3-hour closed-book</td>
<td>Grade</td>
<td>Oral exam</td>
</tr>
<tr>
<td>Incentives and Organization</td>
<td>7.5</td>
<td>No</td>
<td>3-hour closed-book</td>
<td>Grade</td>
<td>Oral exam</td>
</tr>
<tr>
<td>Organisation Theory</td>
<td>7.5</td>
<td>Yes</td>
<td>48-hour open-book</td>
<td>Grade</td>
<td>Oral exam</td>
</tr>
<tr>
<td>Political Economics</td>
<td>7.5</td>
<td>No</td>
<td>3-hour closed-book</td>
<td>Grade</td>
<td>Oral exam</td>
</tr>
<tr>
<td>Praktisk tidsrækkeanalyse (in Danish only)</td>
<td>7.5</td>
<td>No</td>
<td>24-hour open-book</td>
<td>Grade</td>
<td>Oral exam</td>
</tr>
<tr>
<td>Title</td>
<td>Credits</td>
<td>Exam Type</td>
<td>Exam Details</td>
<td>Grade Requirement</td>
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<tr>
<td>----------------------------------------------------------------------</td>
<td>---------</td>
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<tr>
<td>Pricing Financial Assets (F)</td>
<td>7.5</td>
<td>No</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>Same but possibly oral exam</td>
</tr>
<tr>
<td>f Private Equity – From Venture Capital to Buyouts (F)</td>
<td>10</td>
<td>No</td>
<td>Project</td>
<td>Grade</td>
<td>Same</td>
</tr>
<tr>
<td>f Programmering og statistik med SAS (in Danish only)</td>
<td>7.5</td>
<td>No</td>
<td>3-hour open-book written exam</td>
<td>Grade</td>
<td>Same but possibly oral exam</td>
</tr>
<tr>
<td>f The Psychology of Choice – Experimental Theory and Methods</td>
<td>7.5</td>
<td>Yes</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>Same but possibly oral exam</td>
</tr>
<tr>
<td>f Public Finance</td>
<td>7.5</td>
<td>No</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>Same but possibly oral exam</td>
</tr>
<tr>
<td>f Regnskabsanalyse og aktievurdering (F) (in Danish only)</td>
<td>7.5</td>
<td>No</td>
<td>3-hour open-book written exam</td>
<td>Grade</td>
<td>Same but possibly oral exam</td>
</tr>
<tr>
<td>e Science of Behaviour Change</td>
<td>7.5</td>
<td>Yes</td>
<td>2-hour closed-book written exam</td>
<td>Grade</td>
<td>Same but possibly oral exam</td>
</tr>
<tr>
<td>f Skatteret (F) (in Danish only)</td>
<td>7.5</td>
<td>No</td>
<td>3-hour open-book written exam</td>
<td>Grade</td>
<td>Oral</td>
</tr>
<tr>
<td>e Social Data Science</td>
<td>7.5</td>
<td>Yes</td>
<td>Written assignment and oral exam</td>
<td>Grade</td>
<td>Same but possibly oral exam</td>
</tr>
<tr>
<td>Course Title</td>
<td>ECTS</td>
<td>Take Home Exam</td>
<td>Exam Format</td>
<td>Grade Format</td>
<td>Notes</td>
</tr>
<tr>
<td>-------------</td>
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</tr>
<tr>
<td>Stikprøveteorii (in Danish only)</td>
<td>7.5</td>
<td>No</td>
<td>7-days open-book take-home exam and oral exam without aids</td>
<td>Grade</td>
<td>No</td>
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<tr>
<td>Strategic Management</td>
<td>7.5</td>
<td>Yes</td>
<td>Oral</td>
<td>Grade</td>
<td>Yes</td>
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<tr>
<td>Tax Policy</td>
<td>7.5</td>
<td>No</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>Random sample</td>
</tr>
<tr>
<td>Telecommunication Economics</td>
<td>7.5</td>
<td>No</td>
<td>3-hour closed-book written exam</td>
<td>Grade</td>
<td>Random sample</td>
</tr>
<tr>
<td>Theoretical and Empirical Foundations of DSGE Modelling (F)</td>
<td>7.5</td>
<td>Yes</td>
<td>7-day open-book take-home exam</td>
<td>Grade</td>
<td>No</td>
</tr>
<tr>
<td>Videregående statistik (in Danish only)</td>
<td>7.5</td>
<td>Yes</td>
<td>Submission of assignments (continuous assessment)</td>
<td>Pass/Fail</td>
<td>No</td>
</tr>
<tr>
<td>Økonomiske prognoser i praksis (in Danish only)</td>
<td>7.5</td>
<td>No</td>
<td>12-hour open-book take-home exam</td>
<td>Grade</td>
<td>No</td>
</tr>
<tr>
<td>Årsregnskab og regnskabsanalyse (in Danish only)</td>
<td>7.5</td>
<td>No</td>
<td>24-hour open-book take-home exam</td>
<td>Grade</td>
<td>No</td>
</tr>
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</table>
## Economics Seminars:

<table>
<thead>
<tr>
<th>Seminar Name</th>
<th>ECTS</th>
<th>Prerequisite requirements*</th>
<th>Exam</th>
<th>Assessment</th>
<th>External assessment</th>
<th>Re-sit Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>The variety changes every semester</td>
<td>7.5</td>
<td>Yes</td>
<td>Project</td>
<td>Grade</td>
<td>Yes</td>
<td>Written seminar project</td>
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</tbody>
</table>

## Seminar Re-Sit Paper:

<table>
<thead>
<tr>
<th>Name</th>
<th>ECTS</th>
<th>Prerequisite requirements*</th>
<th>Exam</th>
<th>Assessment</th>
<th>External Assessment</th>
<th>Re-sit exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seminar Re-Sit Paper</td>
<td>7,5</td>
<td>No</td>
<td>Project</td>
<td>Grade</td>
<td>Yes</td>
<td>Same</td>
</tr>
<tr>
<td>For the second and third exam attempt</td>
<td>7,5</td>
<td>No</td>
<td>Project</td>
<td>Grade</td>
<td>Yes</td>
<td>Same</td>
</tr>
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</table>

## Co-Curricular Written Assignments:

<table>
<thead>
<tr>
<th>Name</th>
<th>ECTS</th>
<th>Prerequisite requirements*</th>
<th>Exam</th>
<th>Assessment</th>
<th>External assessment</th>
<th>Re-sit Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-Curricular Written Assignment</td>
<td>0.5–7.5</td>
<td>No</td>
<td>Project</td>
<td>Pass/Fail (0.5–5 ECTS) Grade (5.5–7.5 ECTS)</td>
<td>No (0.5–5 ECTS) Yes (5.5–7.5 ECTS)</td>
<td>Same</td>
</tr>
</tbody>
</table>
### Thesis:

<table>
<thead>
<tr>
<th>Name</th>
<th>ECTS</th>
<th>Prerequisite requirements*</th>
<th>Exam</th>
<th>Assessment</th>
<th>External assessment</th>
<th>Re-sit Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thesis</td>
<td>30</td>
<td>Yes</td>
<td>Project with oral defence</td>
<td>Grade</td>
<td>Yes</td>
<td>Same</td>
</tr>
<tr>
<td>Students select title</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Students must meet the prerequisite requirements before they are allowed to take the examination of the course, e.g. compulsory assignments, attendance, active participation, presentation and/or submission of a paper or a contract. The examination of some courses may be a project. In these cases it may a requirement that students submit a project description or similar before being eligible to write the project. This may not necessarily be mentioned above.

**In courses where the exam is a take-home assignment or project and where the re-sit is changed to an oral exam the students might be required to hand in the assignment/project or a synopsis before attending the oral exam.**
6.2 The following section contains course descriptions for the:
- thesis
- seminars
- co-curricular written assignments
- elective courses
- Seminar Re-Sit Paper
6.2.1 Thesis

**Number of ECTS:** The thesis is equal to 30 ECTS.

**Purpose and Learning Outcome:** The thesis is the final major assignment. The learning outcome is to:

- formulate, outline and operationalize an economic and social-science problem in a wider sense. The thesis is produced on the basis of the courses and other educational activities (including those for which credits are transferred from other programmes), which comprise the Bachelor’s and Master’s Programmes in Economics.
- select, discuss and apply relevant economic theories and econometric approaches (at the level of the master’s programme) relevant to the specific analysis and any potential corresponding empirical material
- document and explain the conducted analysis, and account for its strengths and weaknesses
- provide a logical, clear and linguistically accurate presentation and clarification of the chosen problem

Students defend their theses orally. At the oral defence the students must demonstrate that they master the methods used in the composition of the thesis. Students must also be able to explain and clarify their problem.

**Registration:** Students must register for thesis these following the rules for thesis registration in section 4.2.4 in the Common Part of the Curriculum.

The only start dates possible are 1 September and 1 February with deadline six months later – even if a student hands in the contract later than these dates. The period of assessment is not included in the six months.

If the thesis is not handed in within the deadline, the student has used one exam attempt.

It is not possible to cancel the contract once it has been approved by the University.

**Second and Third Exam Attempts:** Students who fail to submit their theses within the deadline have used one exam attempt and must register for a second exam attempt (and, if necessary, a third attempt). Before entering a second (and third) contract, the student must make a new problem statement within the same field of study. The new contract and the new problem statement must be submitted two weeks after the deadline of the prior attempt – at the latest.

The deadline for handing in the thesis on the second (and third) attempt is three months after submitting the new problem statement.

The rules are described in the section “Registration for the Second and Third Exam Attempts on the Master’s Programme” of the Common Part of the Curriculum.
Guidelines and Contract: Students must find a supervisor among one of the full-time lecturers at the Department of Economics, or among one of the part-time lecturers affiliated with the department. In unusual circumstances, students may apply to the Board of Studies for an external supervisor employed at another Danish university. The exemption will be granted on condition that none of the supervisors at the department are capable of supervising the students.

The university (i.e. the Head of Studies) approves the topic of the thesis. The contract template is available on the study pages at KUnet.

The thesis contract must include a project description containing proper information about the topic, methodology and content of the thesis, as well as a timetable.

If students want the thesis to be a part of the MSc in Economics (Finance), this must be specified in the thesis contract.

Students, who write their theses in collaboration with a company and make use of company data, should draw up a third-party agreement clarifying how the students may use the data, and whether the thesis should be confidential. A template third-party agreement is available on the study pages at KUnet under ‘Master’s Thesis’.

Submission: Two weeks prior to the deadline, the student must submit a two to three pages preliminary summary to the study administration. The preliminary summary is used to appoint an external examiner.

Students must upload their theses electronically through the online thesis upload service (SAMF-IT’s Specialeupload Service) no later than their deadline.

From 1 September 2016 students must no longer hand in two bound copies.

Type of Examination and Other Regulations: The thesis is a project with a subsequent oral defence.

Theses may be written individually or by two students in collaboration. If written by one student, the thesis must be no longer than 80 standard pages (192.000 keystrokes in total). If co-written, the limit is 120 pages (288.000 keystrokes in total).

A standard page is defined as 2,400 keystrokes including spaces. The number of pages is based on this definition. The number of standard pages and the number of keystrokes must appear on the front page of the thesis. See section 4.5 of the Common Part of the Curriculum for a more detailed description of the standard page definition.

The summary is included in the assessment of the thesis. The summary should summarise the main points of the thesis and stipulate how the student arrived at these points. The summary must be written in another language than Danish, even if the thesis is not in Danish. The summary may be in English, German or French. Swedish and Norwegian do not count as foreign languages, cf. the Examination Order (Eksamensbekendtgørelsen).

The thesis is assessed externally, according to the 7-point grading scale.
Writing and spelling skills are part of the overall assessment of the thesis. However, the academic content will be weighed more heavily, cf. the Examination Order (Eksamensbekendtgørelsen).

If two students co-write their thesis, it must be clearly stated which student wrote which part, enabling their contributions to be assessed individually. The foreword/introduction and table of contents should clearly identify with which parts each author contributed. The introduction and conclusion, as well as any potential sub-conclusions, may be written collectively. Please note that no more than 20 % of the thesis may be co-written.

Students co-writing their thesis defend it individually, and the authors may not be present at the co-author’s oral defence.

If the thesis is not submitted in time, it will not be assessed. In such cases, the student will have used their first exam attempt, cf. the Examination Order (Eksamensbekendtgørelsen).

**Re-sit Examination:** Same as the ordinary exam, but with less time allotted to finish the thesis (see above).

**Language:** Danish or English
6.2.2 Seminars

Purpose: The purpose of seminars on the Master’s Programme in Economics is for students to identify and clarify a problem employing the theories and methodology acquired during their Bachelor and Master’s Programmes in Economics. The students make an agreement with the lecturer of the seminar concerning the topic of their individual seminar assignment. Participation in an economic seminar involves preparation of a written presentation, constructive discussion of other students’ presentations, and active participation. In the assessment of an economic seminar assignment the clarity and linguistic accuracy is takes precedence.

Description of Objectives: The purpose of participation in an economic seminar is for students to demonstrate their mastery of the following:

- Formulating, delineating and operationalizing an economic and social science problem in a wider sense. The written presentation is produced on the basis of courses and other educational activities (including those for which credits are transferred from other programmes), which comprise the Bachelor and Master’s Programmes in Economics
- Selecting, discussing and applying the relevant economic theories and econometric approaches (at the level of the master’s programme) relevant to the specific analysis and any potential corresponding empirical material
- Documenting and explaining the conducted analysis, and accounting for its strengths and weaknesses
- Providing a logical, clear and linguistically accurate presentation and clarification of the chosen problem
- Delivering their own presentations in a clear and linguistically accurate manner
- Conducting a constructive oral discussion of other students’ presentations, and participating actively in the classes of the seminar

The grade 12 is awarded when students complete an economics seminar with no or only a few minor deficiencies.

Type of instruction: During the economic seminars the participating students prepare a paper about a previously agreed topic and present it to their fellow students and the lecturer. The participating students take turns in the role of opponents of other students’ presentations. Students are only allowed to attend a specific seminar once.

Recommended Requirements: It is recommended, but not compulsory, that the students participate in the corresponding course, if such a course is available, before taking the seminar.

Language: Danish or English. Where the seminar language is English, ALL students must write their assignment in English, even if no English-speaking students are participating.
**Formal Requirements:** As a requirement for the examination (i.e. the written exercise and presentation), students must:

a) attend the agreement meeting at the beginning of the seminar (in case of such)

b) attend the classes of the seminar. By prior arrangement with the lecturer, students may miss up to two classes, but only if the presentations are distributed over the entire semester, rather than, e.g. over two days

c) submit their commitment paper

d) deliver their own presentation

e) oppose another students’ presentations

f) submit a pre-presentation (in case of such a requirement)

For economics seminars in the master’s programme, the written presentation must consist of a maximum of: 15 standard pages (2400 keystrokes per page, 360000 in total) and eight pages of appendices (2400 keystrokes per page, 19200 in total)

Please consult paragraph 4.5 in the Common Part of the Curriculum for more information on formal requirements and standard pages.

If two students co-write an assignment, it must be clearly stated which student wrote which part, enabling their contributions to be individually assessed. The foreword/introduction and table of contents should clearly identify, with which parts each author contributed. The introduction and conclusion, as well as any potential sub-conclusions, may be written collectively. Please note that no more than 20 % of the assignment may be co-written.

If two or more students co-write an assignment, the number of standard pages is increased correspondingly. E.g. if two students co-write then the written presentation must consist of a maximum of 30 standard pages (72000 keystrokes) and 16 pages of appendices (38400 keystrokes).

**Type of Examination:**

The grade for participation in a seminar is awarded solely on the basis of the written presentation.

**Re-sit Examination:**

If a student does not pass the seminar project or meet the compulsory requirements for the ordinary examination, the seminar project is replaced by a written seminar re-sit paper of 7,5 ECTS within the same subject area. The Head of Studies appoints a supervisor. The seminar re-sit paper is assessed externally, according to the 7-point grading scale.
6.2.3 Co-curricular Written Assignments

**ECTS:** 0.5–7.5 ECTS

**Purpose and Description of Objectives:** Co-curricular written assignments (formerly known as supplementary papers) are available for students who want to enhance their knowledge and competences in a particular course.

Students are allowed to write a maximum of two assignments of this kind during their master programme.

The rules for deadlines are listed on the study pages at KUnet.

**Placement in the Master’s Curriculum:** A co-curricular assignment substitutes ECTS in the group of elective courses in economics.

**Registration, Submission and Supervision:** Students register by submitting a registration form to the study administration (available on the study pages at KUnet).

Assignments prescribed to up to 5 ECTS must be submitted no later than 1 November (Autumn semesters) / 1 April (Spring Semesters). Assignments prescribed to 5.5 ECTS or more must be submitted no later than 1 January (Autumn semesters) / 1 June (Spring Semesters).

Students should enter into supervision agreements with one of the full-time lecturers at the Department of Economics or an affiliated part-time lecturer. No actual supervision is provided for co-curricular written assignments, but the supervisor is expected to assist with literature suggestions and the structuring of the assignment.

Students can only have an external supervisor when writing their co-curricular written assignments in unusual circumstances. Applications for an external supervisor must be submitted to the study administration and should include the reasons why the student is unable to use an internal supervisor.

**Type of Examination:**

The supervisor assesses assignments prescribed to up to 5 ECTS with a Pass/Fail grade. Assignments prescribed to 5.5 ECTS or more are assessed externally and graded according to the 7-point grading scale.

The length of co-curricular written assignments depends on the prescribed number of ECTS. The requirements for the number of pages for co-curricular written assignments are as follows:

- 0–5 ECTS = 1–1.5 standard pages
- 1 ECTS = 2–3 standard pages
- 2.5 ECTS = 5–7.5 standard pages
- 5 ECTS = 10–15 standard pages
- 7.5 ECTS = 20–25 standard pages
If the assignment is prescribed to another number of ECTS than those listed above, the page number is calculated based on the number of pages for a 1 ECTS assignment. For assignments written by more than one student, the number of pages is multiplied by the number of authors, i.e. x2, x3, etc.

The number of pages includes tables and graphs.
In addition to the number of pages listed above, the students may include the number of pages below in their assignment:
- One cover page
- One page for the table of contents
- Two pages of literature citations
- A maximum of five pages of various appendices. If necessary, a SAS file may be attached to the dataset used, if previously arranged with the supervisor.

The assignment may be written by up to two students.

If two students co-write the assignment, they must do so in a way that their individual contributions can be individually assessed. The foreword/introduction and table of contents must all clearly identify with which paragraphs each author contributed. The introduction and conclusion, as well as any sub-conclusions and/or summaries, may be written collectively. However, no more than 20% of the assignment may be co-written.

For assignments written by two students, the number of pages is doubled. In addition to the number of pages, the number of pages below may included in the assignment:
- One cover page
- One page for the table of contents
- Four pages of literature references
- A maximum of ten pages of various appendices. If necessary, a SAS file with the dataset used may be attached to the assignment, if previously arranged with the supervisor.

**Re-sit Examination:**
Same as for ordinary examination, i.e. the student must register for and re-submit the assignment.
6.2.4 Seminar Re-Sit Paper

ECTS: 7.5 ECTS

**Purpose and Description of Objectives:** A seminar re-sit paper is available for students who have been registered for and attended a seminar, and who have not met the compulsory requirements for the ordinary examination or failed the ordinary exam.

Students are not allowed to co-write.

**Placement in the Master's Curriculum:** A seminar re-sit paper substitutes 7.5 ECTS in the group of economic seminars.

**Registration, Submission and Supervision:**
The Head of Studies appoints a supervisor among the full-time lecturers or affiliated part-time lecturers at the Department of Economics.

No actual supervision is provided for seminar re-sit papers, but the supervisor is expected to assist with literature suggestions and the structuring of the paper.

The seminar re-sit paper must be submitted no later than four months after registration.

**Type of Examination:** Seminar re-sit papers of 7.5 ECTS are assessed externally and graded according to the 7-point grading scale.

The length of a seminar re-sit paper is 20–25 standard pages. The number of pages includes tables and graphs. In addition to the number of pages listed above, the students may include the number of pages below:

- One cover page
- One page for the table of contents
- Two pages of literature citations
- A maximum of five pages of various appendices. (a maximum of five pages. If necessary, a SAS file may be attached to the dataset used, if previously arranged with the supervisor).

**Re-sit Examination (third attempt):**
Same as above, i.e. the student must register for and re-submit the assignment.
6.3 **Mandatory courses** (All courses can be found at www.kurser.ku.dk)

6.3.1 **AØKA08006U Macroeconomics III**

**Content:**

This course aims at providing insight into the basic models, concepts, methods and results of modern macroeconomics and to be a prerequisite for the more specialized macroeconomic courses. We will study what determines savings and capital accumulation in a general equilibrium framework. How taxes and public debt affect the economy. The effects of uncertainty and expectations, in particular how stabilization policy is affected by the way expectations are formed. Political limits to fiscal and monetary policy are analyzed.

**Learning Outcome:**

After completing the course, the student should be able to:

**Knowledge:**

- Understand the basic models, concepts, methods and results of modern dynamic macroeconomic analysis.
- Use these tools to understand how shocks propagate in the economy.

**Skills:**

- Manage the topics, methods, tools and theories learned during the course.
- Analyze the role of expectations and dynamic linkages, and to be proficient in the application of the concepts and methods which can be then used in other courses or in a future job after graduation.

**Competencies:**

- Analyze a macroeconomic problem, where the above-mentioned concepts and methods are central, that is competence in solving such models and explaining in economic terms the results and implications and how they derive from the assumptions of the model.
Teaching and learning methods: The teaching will consist of lectures, as well as exercise classes during 14 weeks.

Academic qualifications: Makro I og Makro II, Sandsynlighedsteori og Statistik og Økonometri I

Exam registration requirements: As a part of the course, three written assignments should be completed and accepted.

Language: Lectures and exercise classes in English. The exam assignment is in English and must be answered in English.
Content

This course furthers the introduction of game theory, non-cooperative as well as cooperative, and its applications in economic models. The student who successfully completes the course will learn the basics of game theory and will be enabled to work further with advanced game theory. The student will also learn how economic problems involving strategic situations can be modeled using game theory, as well as how these models are solved. The course intention is that the student becomes able to work with modern economic theory, for instance within the areas of industrial organization, macroeconomics, international economics, labor economics, public economics, political economics and financial economics.

In the process of the course the student will learn about

- Static games with complete information,
- Static games with incomplete information,
- Dynamic games with complete information,
- Dynamic games with incomplete information,
- Basic cooperative game theory.

The first part of the course is devoted to static games with complete information. This part of the course extends the initial treatment of the subject from Microeconomics B (Mikroøkonomi B). The concept of a normal form game and solution concepts such as dominance and Nash Equilibrium are reintroduced in a formally rigorous way. Students will also study a variety of economic applications of the theory. Finally, they will look more deeply into the theory of static games with complete information by studying mixed strategies and mixed-strategy Nash equilibria, and discussing equilibrium existence.

The second part of the course extends the treatment of dynamic games with complete information. The students will learn this theory in a more rigorous way and discuss various economic applications. The students will then study games with imperfect information and repeated games. They will be introduced to extensive form games, and will learn about the relevant refinement of the Nash equilibrium concept:
subgame-perfect Nash equilibrium. Again, the theory will be illustrated by economic applications.

In the third part of the course the students will study simultaneous games of incomplete information. They will learn about the concept of Bayesian Nash equilibrium and apply their knowledge to different kinds of auctions, mechanism design problems, and other applications.

The fourth part of the course is devoted to dynamic games of incomplete information. The students will analyze the implications of introducing sequential moves into the games with incomplete information. They will gain knowledge of the Perfect Bayesian Equilibrium and its refinements, and will apply the theory to signaling games and other relevant economic problems. In particular, they will look into the job-market signaling model of Spence and other asymmetric information models.

Finally, the course will address cooperative games. The students will learn the basics of bargaining theory and cooperative game theory.

Learning Outcome

After completing the course, the student should be able to:

Knowledge:

- Formally state the definition of a game and explain the key differences between games of different types (static games of complete information, static games of incomplete information, dynamic games of complete information, and dynamic games of incomplete information).
- Describe in detail the equilibrium (solution) concepts that are relevant for these games (Nash Equilibrium, Subgame Perfect Nash Equilibrium, Bayes-Nash Equilibrium, Perfect Bayesian Equilibrium).
- Define a cooperative game and know the solution concepts of cooperative game theory as well as the basics of bargaining theory.
- Acquire knowledge about a number of special games and particular issues associated with them, such as repeated games (including infinitely repeated games), auctions and signaling games.

Skills:

- Explicitly solve for the equilibria of these games.
• Explain the relevant steps in the reasoning of the solution.
• Interpret the outcomes of the analysis.
• Furthermore, be able to apply equilibrium refinements and the solution concepts of cooperative game theory, such as the core.

Competencies:

• Analyze strategic situations by modeling them as formal games.
• In particular, have the ability to set up, prove, analyze and apply the theories and methods used in the course in an independent manner.
• Be able to evaluate and discuss the crucial assumptions underlying the theory.

Teaching and learning methods:

The teaching will consist of lectures, as well as exercise classes during 14 weeks. While the lectures will discuss and put perspectives on the curriculum, the exercise classes will focus on exercises and applications of the theory. Some relevant experiments will be discussed.

Academic qualifications

The course requires knowledge equivalent to that achieved in Microeconomics I (Microeconomics A) and Microeconomics II (Microeconomics B).

Exam registration requirements: As a part of the course, three written assignments should be completed and accepted.

Language: Lectures and exercise classes in English. The exam assignment is in English.
6.4 Økonomiske valgfag

6.4.1 A0KA08088U Advanced Development Economics (Micro Aspects)

Content
The World is rapidly changing and understanding the dynamics of economic development is as important as ever. This course will cover the microeconomics of development, and will focus on approaches to understanding the behavior of households and firms, and the functioning of markets and institutions in developing countries. Since development is a field with a strong empirical tradition, most of the course will be centered on discussing and evaluating the empirical strategies used in the literature. Moreover, the course will also (via exercises) provide students with an opportunity for a “hands-on” experience, as results in selected readings are replicated (and criticized) using appropriate software packages.

General textbook material and selected articles form the core of the readings. The range of topics covered include theories of development, micro-economic analysis as well as key policy issues and recommendations. Topics covered in course include: (i) Poverty and inequality, (ii) The agricultural household model (AHM), (iii) Agriculture and livelihoods, (iv) Doing business (industry and services), (v) Health and nutrition, (vi) Jobs, labor market and migration, (vii) Education and skills, (viii) Land markets and property rights, (ix) Credit and microfinance, (x) Social networks and learning, (xi) Risk and insurance, (xii) Coping with conflicts and disasters, and (xiii) a “Hot topic”.

The course will therefore:

- Provide the students with a critical overview of the recent literature and important debates within the micro aspects of economic development.
- Provide insight into methodological issues that arises when doing research on microeconomics of development. The emphasis will be on (i) How theoretical microeconomic hypothesis may be tested with data and (ii) how to identify causal relationships. One aim is to through exercises to gain insight into what makes a good empirical study.
- Provide students with a “hands-on” experience on how to replicate empirical results using relevant econometric software. This will hopefully prepare students for original independent empirical research and help identify possible interesting thesis topics.
Learning Outcome

After completing the course, the student should be able to:

Knowledge:

- Show overview of the basic concepts used in micro development economics and lay out the key elements of the more recent theories and development models.
- Critically discuss theories and empirical evidence on micro economic development.
- Present and discuss existing theory and empirical evidence related to the highlighted topics described in the “content” of the course.

Skills:

- Select relevant micro theories and empirical methods for analyses of the current economic development issues covered in the course.
- Summarize and assess theory and empirical evidence on the economic characteristics and functions of selected markets in developing countries.
- Reflect upon ongoing professional debate in areas within the topics highlighted in the “content” of the course.
- Empirical analysis of existing data relevant for development micro economics.

Competences:

- Ability to apply theoretical and empirical knowledge about economic development in a competent, coherent and original way in relation to current challenges.
- Identify relevant model setups within development and implement existing empirical models in new contexts.
- Introduce and solve new and complex empirical model setups within micro development economics in a professional and responsible manner.
- Empirical analysis of new data using relevant software.
Teaching and learning methods

The format of the course is a combination of lectures, exercises and student assignments. There will on average be 3x45 min lectures per week at which core concepts, theories, empirical measures and methods within the field of micro development are presented. In addition there will be 2x45 min exercises per week at which students work in groups to understand and discuss central papers in the syllabus. During the exercises students will learn to replicate and extent central papers in the syllabus, which will be of direct relevance for the mandatory assignment and the exam.

Academic qualifications

The course builds upon knowledge gained during the under-graduate course “Developmnet Economics”. However, although it is recommended that the students have taken this course it is not a requirement to follow ADEMiA. It is also recommended that the students familiarize themselves with the program package Stata, as exercises are carried out using this particular software. Links to relevant tutorials for Stata will be available on the course homepage.

Language: English

Exam registration requirements: The students have to show active participation in the exercises (done in groups) by handing in program files written during the exercises. In addition, a mandatory written assignment (done in groups) have to be completed satisfactory during the course. The nature of this assignment will be described in more detail during the first week of the course.
6.5.1 AØKA08087U Advanced Development Economics (Macro Aspects)

Content

The course covers three broad themes:

Theme 1. The historical origins of comparative development

It is increasingly understood that it is impossible to account for the vast income differences we see across countries without an understanding of the differential timing of the take-off to sustained growth, which occurred first some two hundred years ago in the Western world. This event is sometimes referred to as the Industrial Revolution. As all countries have not embarked in a trajectory of sustained growth at the same time, income gaps emerged, thus shaping contemporary comparative development. This part of the course will therefore discuss the forces that have kept economies in a state of stagnation for the bulk of human history and, by extension, how economies ultimately are released from stagnation.

Theme 2. Fundamental determinants of productivity

2A. Climate and geography

2B. Culture

2C. Institutions

Why haven’t all countries taken off at the same time? Put differently, why did the Industrial Revolution not diffuse rapidly across the world as a whole? At the same time, why have some countries, post take-off, not manage to catch-up? And why have some not taken off yet?

At the proximate level, the answer is suggested by existing growth models (such as the Solow-Swan model and extensions): some countries are simply not able to accumulate capital (physical and human), adopt new ideas, and ensure a high degree of macroeconomic efficiency as others. But then again, why is that? If policy is part of the story, why do some countries apparently impose growth hampering policies? If low savings are part of an answer, why do citizens of some countries display more “thriftiness” than citizens of other countries? Etc.

This part of the course discusses a recent body of literature that seeks an answer in slow-moving country
specific characteristics: Climate/Geography, Culture, and Institutions. Differences in these three broad dimensions are critical in understanding both the differential timing of the take-off and the post take-off different economic trajectories.

Our journey through the literature will also reveal important debates, which have played out an important role – and, in many cases, are still on-going – such as: Does greater longevity lead to higher income? Do cultural differences matter? Are the formal rules of the game of an economy (i.e., property rights protection) important to growth once we take into account that the informal rules of the game differ across countries (i.e., social norms and values; dimensions like trust, cultural valuation of skills and wealth and so forth)?

**Theme 3. Policy debates**

Towards the end of the course we will explore recent or relevant public debates about our main topic – for example the effectiveness of development policy tools like foreign aid, or the causes and consequences of income inequality in the developing world.

**Learning Outcome**

After completing the course, the student should be able to:

**Knowledge**

- Describe the global pattern of economic development, in a modern and a historical perspective.
- Have a broad appreciation of important papers in the literature relevant to economic development of less advanced economies.
- Understand theoretical models and arguments for topics in the contents of the course, and the empirical evidence accompanying them.

**Skills**

- Identify and explain the causes of differences in the development path that different countries have followed, and relate them to fundamental drivers of economic development.
- Provide the basic economic intuition behind central driving mechanisms in theoretical models.
- Assess the capacity of theoretical models to generate testable predictions, and evaluate the
correspondence between theoretical predictions and empirical evidence.

**Competences**

- Appreciate some of the key debates among economists, understand how they relate to contemporary policy issues, and discuss about the effectiveness of policies aimed to promote growth and economic development.
- Apply knowledge of econometrics to articles that conduct quantitative analysis in less developed countries.
- Work effectively as a trained economist analyzing problems of less developed countries in an international organization, business environment, non-governmental organization, or governmental institution.

**Teaching and learning methods**

The course consists of 2 hours of classes (lectures) every week and 2x2 hours every second week for 14 weeks.

**Academic qualifications**

Macroeconomics I equivalent to the course at the B.Sc programme in Economics.

**Exam registration requirements:** None

**Language:** English.
6.5.2 AØKK08198U Advanced Development Economics: Applied Macroeconomic and Policy Analysis

Content

The course considers a range of policy-relevant topics that applied economists face in low and middle income countries. The course focuses on short- and medium-run macroeconomic management. Topics covered include basic data and metrics for applied macroeconomists, national accounts analysis, macroeconomic consistency models, forecasting, real exchange rate valuation and fiscal sustainability.

The objective is to develop an understanding of various methods/tools, their strengths and weaknesses, and how they have been applied in practice. In doing so, the course aims to provide students with skills to critically assess a range of applied macroeconomic and economic policy issues in low and middle income country contexts.

The course complements the existing Masters-level development economics courses (“Micro aspects” and “Macro aspects”). It makes a bridge between specific microeconomic topics and the fundamental determinants of growth.

The course should be relevant for students that seek to work as applied economists, such as: emerging markets finance, international organizations, government ministries, or diplomatic missions etc..

Students are expected to be actively involved, particularly in discussion of concrete policy problems and case studies.

Learning Outcome

After completing the course, the student should be able to:

Knowledge

- Understand the role of and challenges facing economists in policy-making in developing countries
- Develop a working knowledge of basic analytical tools used to investigate macroeconomic policy challenges/developments in developing countries. These include national accounts indicators, consistency frameworks, forecasting, real exchange rate evaluations and fiscal sustainability analysis
• Understand standard international parity conditions and other modelling assumptions often applied in macroeconomic analysis for developing countries
• Demonstrate knowledge of findings in the empirical literature, including country cases studies and applications, which shed light on the range of topics covered in the course

Skills

• Be able to evaluate the quality of evidence in the empirical literature covered in the course, such as the effects of macroeconomic policy choices on development outcomes
• Be able to discuss the strengths, weaknesses and overall suitability of different model assumptions and analytical tools often used in developing country macroeconomic analysis

Competencies

• Develop familiarity with key macroeconomic data series and their quality
• Develop a broad understanding of macroeconomic challenges facing developing countries
• Be able to reflect on appropriate priorities for macroeconomic policy-making in developing countries
• Be able to apply basic macroeconomic analytical tools, such as analysis of national accounts and real exchange rate evaluations to different contexts or data
• Be able to critically discuss underlying models, empirical methods and findings that concern macroeconomic management in developing countries

Teaching and learning methods

Teaching will be based on class lectures. Active participation on an individual and group basis is expected. Students will be required to present their own work in class (see Exam registration requirements below).

Academic qualifications

A bachelor degree in economics is required, with coverage of macroeconomics. It is strongly recommended that Macro III/Macro C has been followed prior to taking "Advanced Development Economics: Applied Macroeconomic and Policy Analysis". Some previous coverage of introductory development economics is helpful but not necessary.

Exam registration requirements: None
6.5.3 AØKA08082U Advanced Industrial Organization

Content

This course advances on some topics from the undergraduate course on Industrial Organization (IO). The course covers both theoretical and empirical IO. Topics include Price Discrimination, Auctions, Regulation of Monopolies, Demand Estimation, Firm Heterogeneity, Moment Inequalities in Applied Work, Market Power, Mergers, Collusion, Entry and Exit, Single Agent Dynamics, Two-sided Markets, Vertical Relationships, and Behavioral Industrial Organization.

Learning Outcome

The aim is that the students get an advanced knowledge of modern IO theories, and how theory and data can be combined to shed light on real world problems such as competition policy (anti-trust).

The students should acquire a level of knowledge, where they understand the details of the theories and are able to analyze problems within industrial organization using the acquired theoretical and empirical tools. It is the aim that the student learns how to model economic problems in markets with few firms, using the appropriate (often game theoretic) methods, as well as how these models are solved. The students should also learn how empirical studies build on the theoretical models (structural estimation), the chief difficulties faced by such empirical work, and how these difficulties can be overcome. The students should be able to discuss the real-world relevance of the theories in an informed manner based on empirical data.

The book by Tirole is a classic text on IO theory. Although it never really goes out of date and is still a standard reference for every serious IO specialist, the book is now almost 30 years old. To bring the students to the research frontier, more recent research papers will cover various topics in theoretical IO. In addition, a number of research papers will cover empirical approaches to IO.

Within the areas covered in the course, the aim is that students should be able to:

Knowledge:

- Understand the theories at a level as found in research papers published in the major journals.
- Understand how theoretical models underpin modern empirical IO (structural estimation), and the
chief difficulties faced in empirical work, and how these difficulties are overcome in the modern literature.

Skills:

- Solve formal models using tools from mathematical optimization theory and game theory.
- Analyze questions related to industrial organization drawing upon one or more theories and to present this analysis in writing using a scientific and concise language.

Competencies:

- Analyze formal models that are variations of the models and theories covered in the course and to provide economic intuition for the results obtained.

Teaching and learning methods: Lectures

Academic qualifications

The course Industrial Organization or equivalent as well as basic game theory and econometrics is recommended.

Exam registration requirements: None

Language: English
6.5.4  AØKA08062U Advanced International Trade

Content

This is a graduate-level course in international trade. The course is research-oriented with the goal of introducing students to the latest and most important research in international trade.

The course will present and discuss recent as well as classic theories of international trade. Empirical evidence is used throughout the course to examine the validity of the presented theories. Topics covered include:

- Gains from trade and the law of comparative advantage
- Multi-product Ricardian trade theory
- Generalized Heckscher-Ohlin theory
- Monopolistic competition theory with heterogeneous firms
- Multinationals and the organization of the firm
- Theory and empirics of the Gravity equation
- Margins of international trade
- Trade, tasks, offshoring and the structure of wages
- Immigration

Learning Outcome

The objective of this graduate-level course is to equip students with an in-depth understanding of international trade and enable them to read, understand and critically reflect on the most recent theoretical and empirical research in the field.

By the end of the course, students should be able to:

Knowledge

- Understand, describe and identify the core theories of international trade
- Account for the stylized facts and direct empirical tests of the core theories of international trade
- Provide an overview of recent theoretical and empirical developments in the field
Skills

- Analyze and critically reflect on main predictions of core theories of international trade
- Select relevant theories and methods for analyzing trade-related questions
- Communicate and discuss key concepts in international trade

Competencies

- Read the most recent theoretical and empirical research in international trade
- Apply relevant theories and concepts in independent work to analyze new problems and policy proposals

Teaching and learning methods

The course consists of 3 hours of classes (lectures) every week for 14 weeks.

Academic qualifications

It is strongly recommended that students have followed the course “International Economics” (or a course equivalent to this) prior to taking “Advanced International Trade”

Exam registration requirements: None

Language: English
Content

The focus of this course is on likelihood based analysis of the cointegrated VAR model with an emphasis on applicability, particularly in the field of macroeconomics and international finance. Cointegration analysis is a means to uncover, estimate and test stationary relations among non-stationary variables. The reason why this is interesting is that such stationary relations often can be interpreted as equilibrium relations between economic variables. Within the cointegrated VAR model it is possible to investigate dynamic interaction and feedback effects, in particular how deviations from a steady-state relation affect the economic system. Furthermore, it is also possible to make inference on the common driving trends which have generated the non-stationarity of the data. The reason why this is interesting is that these common trends can be interpreted in terms of unanticipated shocks to the variables of the system. In short the cointegrated VAR model allows us to investigate the economic reality as a system of pulling forces (the equilibrium correction forces) and the pushing forces (the common stochastic trends). The course includes the topics:

(i) Introduction to central concepts: vector autoregressive processes, error-correction models, non-stationary processes and cointegration. (ii) Representation of cointegrated processes. (iii) Estimation and testing in the cointegrated VAR model. (iv) Introduction to processes integrated of order 2.

Learning Outcome

The aim of this course is to provide the students with a profound theoretical and practical knowledge of the econometric analysis of non-stationary time-series using multivariate dynamic models. At the end of the course students should be able to perform cointegration analyses based on a given set of data and critically assess empirical analyses of macroeconomic time series.

Knowledge:

- The distinction between stationary and nonstationary variables.
- The implication of unit roots in VAR models.
- The pulling and pushing forces in the cointegrated VAR model, and the Granger representation theorem.
- The role of constants, trend terms, and dummy variables in the cointegrated VAR model.
• Hypothesis testing and identification in the cointegrated VAR model.
• The asymptotic behavior of estimators and test statistics.
• The cointegration model for variables integrated of order two.

Skills:

• Specify and estimate VAR models.
• Analyze whether the VAR model is well-specified and has constant parameters.
• Formulate the hypotheses of unit roots and cointegration as restrictions on the VAR model. Test for the cointegration rank of the VAR model.
• Estimate the parameters of the cointegrated VAR model using maximum likelihood. Interpret the results in terms of equilibrium relationships and driving common trends.
• Formulate and test hypotheses on the cointegrating relationships and the equilibrium adjustments.
• Explain when a structure is exact-, under- or overidentified.
• Impose identifying restrictions on the long-run and short-run structure of the model.
• Analyze the VAR model for variables integrated of order two and perform a nominal-to-real transformation.

Competencies:

After having completed the course, the students should have competencies to apply the obtained knowledge and skills to analyses of new data sets. In particular to:

• Independently formulate and analyze VAR models for new economic problems.
• Test for unit roots and cointegration.
• Formulate hypotheses on the model inspired from economic theory.
• Apply the theoretical results to obtain an understanding of the mechanisms governing the dynamics of a certain data set.
• Use the theory and apply the model also in the case of processes integrated of order two.

Teaching and learning methods

Teaching is based on lectures and exercise classes.
**Academic qualifications**

Basic knowledge of time series econometrics, autoregressive processes, theory for likelihood estimation and hypothesis testing and unit root testing.

**Exam registration requirements**: None

**Language**: English
6.5.6  AØKA08098U Advanced Macroeconomics

Content

Being graduate, the course builds upon the macroeconomics courses in the bachelor program and presupposes corresponding qualifications. The course extends models from these courses in different directions and introduces new models. The emphasis is on complete dynamic models, taking forward-looking expectations, uncertainty, and market imperfections in the goods, labour and credit markets into account in a systematic way.

Fiscal and monetary policy questions are analysed in the light of these models. For example, how can "fiscal sustainability" of a given set of government spending and taxation rules be assessed? What is the role of monetary and fiscal policy in business cycle stabilization under alternative circumstances, including a liquidity trap?

Specific topics in the course:

- The continuous-time overlapping-generations model, budget policy and general equilibrium effects of public debt
- Tobin’s q and firms’ investment decisions
- the housing market in macroeconomics
- speculative bubbles
- macroeconomics with imperfect competition and nominal and real price rigidities
- the consumption/saving decision under uncertainty, precautionary saving
- different approaches to business cycle theory
- credit and business cycles, with an application to the Great Recession 2008

Learning Outcome

The aim of the course is to endow the student with:

Knowledge:

- Insight into the basic theoretical concepts, mathematical methods and models of modern macroeconomics.
Knowledge of the major empirical regularities in the behaviour of aggregate economic variables in the short, medium, and long run.

Knowledge of analytical tools necessary for understanding economic evolution at the aggregate level, for making macroeconomic forecasts and for policy analysis.

**Skills:**

- Ability to apply the concepts, methods, tools and theories learned during the course.
- Ability to evaluate the models from a theoretical as well as empirical point of view.
- Ability to analyze, assess, argue, organize, and put into perspective the different topics in the course.

**Competences:**

- Proficiency of bringing into play the achieved knowledge and skills in new contexts.
- Ability along these lines are essential for being qualified to work in the economic research and forecast divisions of companies, organisations and government institutions.

**Teaching and learning methods**

Lectures, class exercises, and midterm paper.

**Academic qualifications**

BSc in Economics. It is strongly recommended that Macro C/Micro III has been followed prior to taking "Advanced Macroeconomics".

It is a prerequisite to master macroeconomic models at a level corresponding to Romer: Advanced Macroeconomics, 2. ed., 2002 (chapters 1-2, 10-11), including knowledge of methods of intertemporal optimization (optimal control theory) and analyses of dynamic systems (difference and differential equations, phase diagrams etc.). The course is calculus intensive.

**Exam registration requirements:** An accepted midterm paper is mandatory for access to the final exam.

**Language:** English
Content

The overall purpose of the course is to provide a fundamental understanding of microeconometric methods and their application. These methods consist of behavioral models and statistical techniques to estimate these models.

The course will cover the following methods of estimation:

- Estimation under unconfoundedness
- Instrumental variable estimation
- Linear panel data methods
- Regression discontinuity design
- Control function approaches
- Non-linear estimation methods and numerical optimization
- High-dimensional models
- Discrete response models
- Corner solution models and censored data
- Non-parametric estimation

Learning Outcome

After completing the course, the student should be able to:

Knowledge:

- The course will introduce students to the counterfactual set-up and the key treatment parameters we seek to estimate.
- Students should understand how the estimated parameters rely on specific identifying assumptions.
- Students should understand the principles of M-estimation in terms of estimation and inference as well as key examples of M-estimators.
- Students should know how the most common numerical optimizers work.
- Students should understand which estimator to use depending on the nature of the data (discrete, corner solution, censoring, sample selection, ...).
• Students should understand how to exploit panel data both for linear models and in non-linear settings.

Skills:

• Students should be able to discuss the identifying assumptions and use regressions or descriptive data analysis to assess the assumptions.
• Students should be able to implement an empirical policy evaluation analysis.
• Students should be able to take an estimator from an academic paper or book, code it up in Matlab and estimate parameters as well as obtain standard errors.

Competences:

• Students should learn how to exploit variation induced by a policy to set-up a credible research design.
• When faced with a new dataset (whether in academia or in the real world), students should be able to
  o assess which estimator will be best suited to answer a given question,
  o code up the estimator and estimate parameters,
  o and test statistical hypotheses.
• Students should learn how to develop arguments supporting an identification strategy.
• Students should learn how to assess the identification strategies in existing research papers as well as in their own analyses.
• The acquired skills in microeconometric theory and practice provide a strong background that enable students to do empirical analyses at a high level suitable for the master thesis, but also relevant for answering empirical economic questions that could be encountered in a government agency or in the private sector.

Teaching and learning methods

The lectures cover the theory and intuition of the estimators and methods. In the exercise classes, students obtain hands-on coding experience with implementing the estimators on real datasets primarily in Matlab.

Academic qualifications

Pre-requisites are the bachelor-level econometrics courses, Econometrics I and II (formerly Econometrics B
and C). Prior knowledge about programming in Matlab is not required. Note that you will be required to do mathematical derivations for the exam.

Exam registration requirements: None

Language: English
6.5.8  AØKA08100U Advanced Strategic Management

Content

The idea of the course is to provide students with an understanding of how managers make decision and how strategy evolves in different types of companies and contexts as for instance in organizations located in a dynamic and complex environment facing genuine uncertainty. A further idea is to make the students aware of not only the economic but also the political, social, and psychological aspect of managing an organization and how these aspects affect the development of strategies in organizations both in the private and public sector.

First, we look at different perspectives on strategy, management and organization, including the different elements of an organization and its context (environment) as well as on how organizations are structured depending on the context in which they operate.

This is the starting point of a more detailed presentation and discussion of five different organizational archetypes: The entrepreneurial organization; the large mature/older production/service company; the expert organization, the innovative organization; and the divisional form. For each of these archetypes we go in depth on how the organization is structured, how it is managed, how we work with and develop strategies within it, and what specific problems and opportunities each of them contain. Finally, we will for each of the five archetypes investigate the business model (business logic) it is built upon. This part of the course concludes with an overview of how the organizational archetypes evolve over time from one archetype to another archetype as the organization grows and matures.

In the third part of the course, we look at a number of forces which determine and influence the development of strategies in organizations. Here we look at how companies can handle the uncertainty associated with the development of new technologies, the emergence of new values / norms and globalization and the management of strategic alliances, etc. In addition, we also look at how intended and emergent strategies develop over time and how we can organize and manage strategic change processes.

The course provides a comprehensive tool for diagnosing an organization, as a manager, a consultant, or as a job seekers, and up front know the kind of opportunities and challenges this organization typically is faced with concerning leadership, strategy and organizing.
Learning Outcome

In order to acquire the mark 12 within the course Advanced Strategic Management the student must demonstrate:

Knowledge:

- A deep theoretical knowledge concerning strategy, organisation and management and how they are influenced by different organizational contexts
- An understanding of different organisational archetypes and how they function
- Knowledge concerning different forces including technology, globalization, collaboration and values that affect organizations
- A deep understanding of different ways of organize strategy development processes

Skills:

- An ability to diagnose the archetype or archetypes of an organization
- An ability to diagnose the managerial challenges of an organization
- An ability to diagnose the strategic challenges of an organization

Competences:

- Competences to identify, evaluate and discuss strategic, organizational and managerial issues within case organizations by applying the diagnosing tools, terms and models from the course
- Skills to develop a specific implementation plan for how to work with and organize strategic management and other managerial topics in different organizational contexts
- A skill to evaluate what could be the strategic future development direction for an organization given its present context

The course provide the students with a competence in analysing the circumstances under which business strategies are developed and implemented as well as competences in organizing strategy development
processes and decision-making in different types of organizations and environment. The course apply to student who see themselves in a job position as a management consultant, a secretary to the board of managers, and future managers who would like to work with business strategies in private and public organizations.

**Teaching and learning methods**

The teaching is a combination of dialog lectures, small group work during classis including both discussions and presentations, and student presentations. It is a precondition that student have read the texts and cases before each class and that they are willing to present texts and cases to the class.

**Academic qualifications**

In order to follow the course students must have attended a basic course in Strategic Management or be willing to make themselves familiar with all the classical and modern concepts within this area.

**Exam registration requirements:** None

**Language:** English
Indhold: Anvendte generelle ligevægtsmodeller er et af de konkrete redskaber som økonomer har i deres værktøjskasse.


Fagets ene formål er at give en oversigt over anvendelser af AGL-modeller til sådanne analyser. Fagets andet formål er af praktisk karakter, idet de studerende sættes i stand til selv at konstruere mindre generelle ligevægtsmodeller med anvendelse af GAMS-software. Endvidere gennemføres mindre AGL-analysen på egen hånd.

Til denne version af faget er der tilknyttet en overbygningsopgave på 5 ECTS hvorved man kan opnå 12½ ECTS. Se kurusbeskrivelsen for kurset "AØKA08104U - Anvendte generelle ligevægtsmodeller 12½ ECTS"

Målbeskrivelse: Målet for undervisningen i faget Anvendte Generelle Ligevægtsmodeller er, at den studerende kan

- forklare indholdet af de vigtige begreber i faget, eksempelvis generel ligevægt, kalibrering, fællesomhedsanalyser, Armington-tilgang og finanspolitisk holdbarhed
- sammenfatte de vigtige elementer i fremgangsmåden, når man opbygger en AGL-model
- kritisk vurdere de centrale forudsætninger i typiske AGL-modeller
- forklare opbygningen af de AGL-modeller der berøres i pensum, deres resultater, hovedårsagerne til disse og konkrete eksempler på modellernes anvendelse i policy-sammenhæng
- redegøre for og sammenligne styrker og svagheder ved de forskellige modeller og modeltyper, der berøres i pensum
• ræsonnere, hvordan den generelle ligevægt medfører afledte virkninger af udefrakommende stød i makroøkonomiske modeller, så direkte effekter af stødet ét eller få steder i modellen får konsekvenser generelt i økonomien, fx på faktor- og varepriser, investerings- og arbejdsudbudsadfærd, finansielle markeder, opsparring, forsyningsbalance og feedback-effekter fra udland og den offentlige sektor selvstændigt programmere en enkel AGL-model i programmeringssproget GAMS og redegøre for modellens resultater.

For at opnå den højeste karakter i faget, skal den studerende udmærke sig indenfor alle punkterne.

**Undervisningsform**

Holdundervisningens formål er at træne de studerende i anvendelse af modellerne i praksis. Øvelserne sigter mod at sætte de studerende i stand til selv at udarbejde et GAMS-program - samt sætte sig ind i et allerede eksisterende program. I forelæsningerne gennemgås AGL-modellernes principielle opbygning. Heri indgår: Diskussion af forskellige modeltyper, f.eks. statiske over for dynamiske modeller. Opbygning af en model, valg af specifikke funktionsformer og disse behøver frihed for empiriske egenskaber. Forskellige former for kalibrering (dvs. måder til at få modellen til at repræsentere data fra en virkelig økonomi). Herudover gennemgås opbygningen af nogle eksisterende AGL-modeller som anvendes til at belyse virkninger af finanspolitik, skattepolitik og miljøpolitik.

**Anbefalede faglige forudsætninger**

Mikro- og makroøkonomi svarende til 2. år på BA og minimuml at Micro III (Micro C) og Macro III (Macro C) tages sidobehende. Det anbefales dog, at AGL tages efter disse er læst. Endvidere er det en fordel at have lyst til at arbejde med programmering, som er en væsentlig del af kurset. Det skal påregnes at fagets udviklingsopgave er ret tidskrævende.

**Formelle krav:** Version 1: 7,5 ECTS. Fire obligatoriske opgaver skal løses tilfredsstillende og inden tidsfristen for at man kan gå til eksamen.

Version 2: 12,5 ECTS. Tre obligatoriske opgaver skal løses tilfredsstillende og inden for tidsfristen for at man kan gå til eksamen.

**Sprog:** Dansk
Content: The main objective is to introduce the main tools in the field of applied economics, with applications to the economics of crime, political economy, and labor economics.

Learning Outcome: After completing the course, the student should be able to

Knowledge:

- Distinguish between associative relationships and causal relationships.
- Understand causal identification strategies, such as randomization, difference-in-differences, propensity score matching, and regression discontinuity.

Skills:

Evaluate which of the methodological tools introduced in the lectures is the adequate for the empirical research he/she is interested in.

Competencies:

- Formulate an identification strategy for the empirical research he/she is interested in.
- Apply STATA to all the theoretical methods seen in the lectures.

Teaching and learning methods: The course includes lectures on econometrics tools, lectures on applications of these econometrics tools, and exercise classes aimed at introducing the student to the use of STATA.

Academic qualifications: The participants are expected to have followed Econometrics I.

Exam registration requirements: Full participation at the summerschool is mandatory and the student must actively participate in all activities. 75% of the problemsets have to be accepted by the teacher.

Language: English
Content: The aim of the course is to develop knowledge, skills and competences that enable students to provide answers to real applied econometric problems rather than just econometric theory, and in this way prepare students to carry out their own empirical analyses.

The course is divided into four blocks. In the first block, the counter-factual setup is introduced and natural experiments and methods assuming unconfoundedness are considered. In the second block, methods based on the availability of panel data are considered. These lectures focus on the difference-in-differences estimator and event studies. Furthermore, since the usual standard errors of panel data estimates are likely to be seriously biased, one lecture will be devoted to consider how to obtain correct (clustered) standard errors. In the third block, regression discontinuity and regression kink designs are dealt with. Finally, in the fourth block methods using instrumental variables are considered. Each of the four blocks will be concluded by a workshop, where the students will get hands-on experience in how to apply the methods.

Learning Outcome: After completing the course, the student should be able to:

Knowledge:

• be introduced to the counterfactual set-up and the key treatment parameters we seek to estimate.

• Understand how the estimated treatment parameters rely on specific identifying assumptions.

• have learned a list of research designs that have been used in the literature.

• Understand how arguments in favor of a research design are developed in research articles.

Skills:

• Set-up appropriate evaluation designs matching specific empirical applications.

• Discuss the identifying assumptions and use regressions or descriptive data analysis to assess the assumptions.
• Implement an empirical policy evaluation analysis using Stata.

Competences:

• Formulate an empirical research question.
• Develop a policy evaluation research design.
• Identify how to exploit variation induced by a policy to set-up a credible research design.
• Apply the appropriate econometric techniques to the policy evaluation problems using micro data.
• Develop arguments supporting an identification strategy.
• Assess the identification strategies in existing research papers as well as in their own analyses.

Teaching and learning methods:
The course will consist of 17 regular lectures and 4 STATA workshops. Most of the necessary econometric theory being taught in the lectures will draw on the Angrist and Pischke (2009) textbook. Besides teaching the econometric theory, an important part of the lectures is devoted to considering how to apply the methods taught to real policy evaluation problems. Teaching how to develop appropriate research designs will be case-based drawing on examples from development economics, health economics, labor economics, the economics of education, tax policy, and public economics. The course will thus be complementary to many of the other course in the economics programme.

Academic qualifications
Econometrics I.

Exam registration requirements: None

Language: English
Content: This course will provide an introduction to modern Bayesian methods in econometrics.

The first part of the course will present the fundamentals of the Bayesian approach, from the derivation of Bayes' theorem to its practical application to econometric models. It will introduce basic concepts such as prior, posterior and predictive distributions, before presenting essential tools based on simulation methods: Markov chain Monte Carlo methods, including the Gibbs sampler and the Metropolis-Hastings algorithm. Common econometric models students are already familiar with will be revisited from a Bayesian perspective (e.g., linear regression model, binary/discrete variable models).

The second part of the course will dive into more specific and technical topics. It will present some selected econometric models where Bayesian methods are particularly useful, such as latent variable models and random coefficient models (relying on data augmentation methods). It will also discuss some problems that can affect standard simulation methods (e.g., slow convergence, bad mixing), and explain how these problems can be successfully overcome using recent developments in statistics.

Bayesian methods can be applied to any field of economics. The examples and exercises offered during the course will be drawn from various topics, including micro- and macroeconometrics, and finance.

The main goal of this course is to provide students with practical skills to apply Bayesian methods to a specific problem. Therefore, it should be of particular interest for students planning on writing a Master's thesis or preparing for a PhD programme.

Learning Outcome:

At the end of the summer school, students will:

Knowledge:

• Understand Bayes' theorem and how it can be applied in econometrics.
• Have a grasp of simulation methods, understand their principle and how they can be used to make inference.

Skills:

• Demonstrate an ability to select the most appropriate method for a given estimation problem.
• Be able to implement Markov chain Monte Carlo methods such as the Gibbs sampler and the Metropolis-Hastings algorithm, both theoretically (analytical derivation of the algorithm) and practically (programming).

• Demonstrate technical skills in writing code to implement Bayesian methods. Be able to develop a computer program with the R programming language or use publicly available packages to carry out their own empirical analysis.

Competencies:

Be able to conduct a full Bayesian analysis: (1) formulate an economic model, (2) organize prior knowledge and “beliefs” about the model (prior), (3) use relevant data to express the observed information in the model (likelihood), (4) use Bayes' theorem to update beliefs (posterior), (5) derive an appropriate algorithm to compute the posterior distribution, (6) write code to implement the algorithm, (7) interpret the results and criticize the model.

Teaching and learning methods: The summer school will combine formal lectures with exercise classes and computer tutorials.

Since Bayesian approaches rely on simulation methods, the course will have a computational component. Students will be trained to develop algorithms and to code them using the R programming language.

Students will be asked to prepare exercises and computer tutorials in groups. To this end, student groups (about three students each) will be formed at the beginning of the summer school.

Academic qualifications: Bsc. of Economics or equivalent. It is strongly recommended that a course in econometrics (Econometrics II or similar) has been followed prior to attending this summer school. The student should feel comfortable with basic elements of probability (marginal, conditional and joint distribution of random variables, law of large numbers, central limit theorem, likelihood principle, etc) and with standard econometric methods (maximum likelihood estimation, method of moments, etc). A reading list will be provided to prepare appropriately, should these requirements not be completely fulfilled before the start of the summer school.

The R programming language will be introduced and used in this course. This programming language is not a prerequisite, but it is required that the students have some programming experience. Students will be allowed to use a different language (like Matlab), but examples and support will only be provided in R.
**Exam registration requirements**: Full participation in all the activities of the summer school (lectures, exercises and computer tutorials, group work) is mandatory. Students are expected to attend and to participate actively in these activities to be allowed to register for the exam.

**Language**: English
6.5.13  AØKA08107U Behavioral and Experimental Economics

**Content:** Behavioral economics attempts to make economics a more relevant and powerful science of human behavior by integrating insights from psychology and the social sciences into economics. Experimental economics adapts methods developed in the natural sciences to study economic behavior. Experiments are valuable in testing to what extent the integration of insights from other disciplines into economics is necessary and fruitful. Behavioral and Experimental Economics is a vibrant field of research in economics and sheds new light on many old and important issues in economics. The field has received wide recognition in recent years, for example by the award of the Nobel Prize in Economics 2002 to Daniel Kahneman and Vernon Smith. The field is rapidly growing. This course can therefore not provide a comprehensive overview but concentrates on selected topics instead.

The course addresses the following questions: What are the advantages and limitations of experimental economics? How important are deviations from the assumptions of full rationality and strict self-interest in determining outcomes of economic interaction? It is argued that identifying individual-level “anomalies” is not sufficient to demonstrate their economic and social importance. Instead, it must be analyzed how institutions mitigate and multiply these anomalies. A broad range of institutions, including markets, bargaining and voting is discussed. Successful completion of this course earns students 7.5 ECTS credits.

**Learning Outcome:**

- Students learn how the toolbox of experimental economics can be used in research, and learn to be critical consumers of the rapidly growing behavioral and experimental economics literature. More generally, the course contributes to a deeper understanding of the basic principles of rationality and self-interest in economics.

- Students learn in what ways people systematically deviate from rational and self-interested behavior in individual decision making. This knowledge contributes to avoid pitfalls in decision-making.

- Students learn in what ways markets and other forms of economic interaction can multiply or mitigate these errors. This knowledge is most relevant in the context of institutional choice or design (e.g. from an economic policy perspective).

- Students participate in a series of demonstration experiments and therefore learn how experiments work in practice from the participants’ perspective.
- Students write short papers to analyze experimental data and to reflect on the data and the experimental design. Students therefore improve their writing and reasoning skills.

**Teaching and learning methods:** The course has three elements.

- Lectures: Discussion of selected examples of research in behavioral and experimental economics. Explaining the relevance of demonstration experiments and how the data compares to findings in the literature.

- Demonstration experiments. Students participate in demonstration experiments in our experimental laboratory.

- Assignments: Students analyze the data from the demonstration experiment (i.e. their own behavior) and reflect on possible explanations for observed behavior. Detailed knowledge of the literature is not required at this stage. Assignments are group work (groups of 2 or 3). Assignments are graded as “pass” or “fail”. A student needs to earn 1 “pass” on assignments and is free to choose among the assignments. Deadlines are strict (see handout).

**Academic qualifications:** A sound knowledge of microeconomics and game theory at an intermediate level is required (e.g. Varian: Intermediate Microeconomics, Gibbons: A Primer in Game Theory).

**Exam registration requirements:** Full participation at the summerschool is mandatory and the student must actively participate in all activities.

Participation in experiments and analysis of experimental data is required for admission to final exam. a) Participating in all demonstration experiments is an essential element of this course. However, students are not expected to prepare these experiments. Students earn a “pass” if they are present (see schedule), are attentive and make “reasonable” choices during the experiment. b) Students must provide a rough analysis after each experimental session and answer specific questions concerning the experiment in a paper (“assignment”). Knowledge of the literature is not expected at this stage (we will talk about the experiments in the lecture). Maximum length of a paper: 4 pages text (not counting graphs, tables, see separate guidelines for more details). Students work in groups. Papers are graded as "pass" or "fail" and 1 "pass" paper are required for admission to the final exam.

**Language:** English
Content

Traditional economic theory assumes that economic agents are fully rational with unlimited cognitive abilities and willpower. However, individuals frequently and systematically make decisions in contradiction with these standard presumptions. Against the background of this finding the course addresses e.g. the following questions:

- What are the shortcomings of traditional theories in economics and finance?
- How do the new concepts / theories in behavioral finance and behavioral economics address these shortcomings?
- How do these new theories relate to the traditional theories and what are their strengths and limitations?
- How do the new behavioral presumptions in behavioral finance and economics change the predictions of classical economic theories?

Learning Outcome

After completing the course, the student should be able to:

Knowledge:

- be introduced to the field of behavioral finance.
- understand how behavioral finance and economics attempts to understand the most important systematic behavioral departures from standard economic theories.
- provide an in-depth overview of the most important seminal works in behavioral finance
- be aware of the impact and relevance of the new concepts and theories presented in these seminal works.

Skills:

- critically assess and relate the new concepts and the supporting empirical evidence put forward in the hitherto existing seminal works in behavioral finance.
- present these new and often complex concepts in a simple / clear, but not superficial way.
Competencies:

- apply the empirical and theoretical knowledge and the skills obtained in this course to understand real-world behavioral phenomena that lie beyond the scope of this course.
- use their newly obtained knowledge and skills to solve decision problems that lie outside the scope of the course.

Teaching and learning methods

In the first week of the course there will be an opening lecture during which also all organizational issues are discussed. In all the following weeks there will be 2-hour lectures on different topics in behavioral finance and economics. There will be an assignment with exercises which has to be handed in the second part of the course.

Academic qualifications: A sound knowledge of microeconomics and game theory is required

Exam registration requirements: One assignment must be approved for students to be able to sit the exam.

Language: English
Content: The course provides an introduction to contract theory. Contract theory examines the characteristics of optimal contracts when one party has certain relevant knowledge that the other party does not have.

The course consists of two parts. In the first part, some of the basic ideas in contract theory are presented. We will, in particular, look at optimal contracts when one party has hidden information (adverse selection) or can take a hidden action (moral hazard). In the second part of the course we apply the insights obtained to a number of specific economic questions, studying some original journal articles.

In the first part we will study selected sections of chapters 2-5 of the textbook by Laffont and Martimort. Chapter 2 explains the basic idea and insights of adverse selection. Chapter 3 studies some important extensions of the basic adverse selection model: for example, environments where the agent may be of more than two “types”, which may lead to “bunching” (i.e., several types being offered the same contract).

Chapter 4 explains the basic idea and insights of moral hazard, using a very stylized model with two effort levels and two possible outcomes. Chapter 5 extends this model in some interesting ways, for example: environments with a continuous effort variable, leading to a discussion of the so-called first-order approach.

The journal articles that we will study are about the political economy of industrial economics, and managerial incentives and product market competition.

Learning Outcome: The primary aim of the course is to introduce students to central results and insights in contract theory. An additional aim is to familiarize students with some selected examples of how contract theory can be used to study economic questions. A broader aim is that students who take the course will, by working extensively with theoretical models, acquire analytical skills that are transferable to other kinds of intellectual problems.

After having successfully completed the course the students will be able to formulate and solve contract theory models. The students will also be able to read professional journal articles that apply contract theory and to use this broad analytical approach when analyzing and thinking about questions where incentives play a role.
In order to pass the course, the student must demonstrate familiarity with and understanding of the approach of contract theory. Moreover, the student must show ability to solve and work with models used in contract theory and ability to understand the logic behind the results. The very good should at the end of the course be able to demonstrate full or almost full capability of using and understanding the techniques of analysis taught in the course.

**Teaching and learning methods:** Lectures

**Academic qualifications:** No graduate courses are required, but a certain proficiency in solving game-theoretic models is helpful.

**Exam registration requirements:** A number of projects must be approved in order to sit the exam, please see the course description at [www.kurser.ku.dk](http://www.kurser.ku.dk).

**Language:** English
Content

This is the Economics programme’s central course on Finance, giving a broad insight into the core matter of the field. Building on earlier relevant courses from the Bachelor’s programme in Economics, it provides the common ground for later elective Finance courses.

The course develops your understanding of the different asset classes in financial markets, including bonds, stocks, forwards, futures and options. Based on considerations of investor demand, standard asset pricing methods are introduced. The pricing methodology is used to analyse the choice of investment projects inside firms, including the management of real options. Turning to classic corporate finance issues, the course explores the optimal capital structure of the firm, its optimal dividend policy, risk management, and the incentives of the firm’s management.

The asset pricing models include the Capital Asset Pricing Model (CAPM), the Arbitrage Pricing Theory (APT), risk-neutral pricing, and the Black-Scholes formula. Excel is used to solve problems in these areas. Market efficiency and investor behaviour is discussed.

Learning Outcome

After completing the course, the student should be able to:

Knowledge:

- Understand, account for, define and identify the main methodologies, concepts and topics in Finance
- Solve standard problems in Finance, partly using Excel
- Criticize and discuss the main models in Finance, relating them to current issues in financial markets and corporate finance

Skills:

- Manage the main topics and models in Finance
- Organize material and analyze given problems, assessing standard models and results
• Argue about financial topics, putting results into perspective, drawing on the relevant knowledge of the field

**Competencies:**

• Bring into play the achieved knowledge and skills on new formal problems, and on given descriptions of situations in financial markets or corporations
• Be prepared for more advanced models and topics in Finance

**Teaching and learning methods**

The lectures introduce the material from the syllabus. Students take a first reading of the material before the lecture, in order to engage in informed discussions during lectures.

This course also offers exercise classes meeting every week. Weekly exercise sets will become available through Absalon. Students consider how to solve the exercises before the class meets – working with the exercises provides the best chance to deeply understand the course material. Problem solving helps to realize which parts of the syllabus are harder to learn.

Most exercise sets contain a mandatory exercise. The solutions to a number of such exercises must be approved as a condition for the final exam.

**Academic qualifications**

The course furthers the study of financial problems that was first introduced in the first-year 'Business Economics' course (Erhvervsøkonomi) at the BSc in Economics. It uses some knowledge of probability and statistics from the course 'Probability theory and statistics' (Econometrics A) at the BSc in Economics.

Pricing and decisions by investors and firms are analysed with the methods from our sequence of courses in Microeconomics. Some problems are analysed with the aid of Microsoft Excel.

Academic qualifications equivalent 1st and 2nd year of the Bachelor's programme in Economics

**Exam registration requirements:** 80% of weekly hand-ins must be approved in order for the student to be eligible to take the exam.

**Language:** English
Content

Some of the central issues in Finance relate to the financing decisions of firms, in particular the relative use of debt and equity financing. Key aspects of this capital-structure decision include the tax advantages of debt, costly bankruptcy, and signaling to the market. We also consider the market for corporate control, with leveraged buyouts as well as mergers and acquisitions.

When looking at financing decisions, we will pay particular attention to how conflicts of interest between managers, shareholders, and creditors can affect firm behavior. Amongst other issues, we will consider how firms may take on excessive debt so as to pass bankruptcy costs on to certain creditors; opt for leveraged buyouts to take advantage of sponsor reputation; carry out liquidity mergers to avoid credit rationing; and use equity financing to mitigate information asymmetries with investors, or to reduce agency conflicts within the firm.

Learning Outcome

Corporate Finance Theory builds on the investigation into firm capital structure from the third-year course Corporate Finance and Incentives. We take for granted that course participants have already received a full introduction to the principles of corporate finance. We now go deeper into the particular details of some of these arguments. In order to do so, we go beyond the textbook and base the course on classic and new articles from academic finance journals. The tools and knowledge obtained in this course are of immediate relevance for graduates seeking employment in the business and financial industries. To successfully complete the course, students are expected to meet the following learning outcomes related to intuition, formal mathematical modeling, and application to cases.

Knowledge:

- Identify and summarize key theoretical concepts and results from academic articles (intuition)
- Identify and evaluate key modeling assumptions in an advanced, mathematically-specified theoretical framework (formal modeling)
• Assess whether various modeling assumptions are realistic in particular real-life settings (application to case)

Skills:

• Explain the economic mechanism underlying given theoretical results and discuss their interpretation (intuition)

• Derive and analyze formal results within an advanced, mathematically-specified theoretical framework (formal modeling)

• Argue whether theoretical insights from various articles can shed light on given real-life cases (application to case)

Competencies:

• Compare and contrast theoretical concepts from different articles, and explain the key similarities and differences (intuition)

• Argue to what extent the formal theoretical results derived in various articles relate to the articles’ more informal interpretation (formal modeling)

• Identify new, relevant, real-life cases, and evaluate whether theoretical insights from various articles can shed light on these cases (application to cases)

Teaching and learning methods

The teaching activities will consist of lectures where students are expected to actively participate. This will include discussing questions in groups, submitting short answers and voting on multiple choice questions using the Socrative online system, and at times coming to the board. All lectures will be given in English.

Academic qualifications

Students will benefit from having passed the course "Corporate Finance and Incentives", or an equivalent elaborate introduction to Finance. Students should have a good understanding of the topics covered in Part 5 (Capital Structure) of the textbook “Corporate Finance” by Jonathan Berk and Peter DeMarzo, or in
another book of a similar level.

**Exam registration requirements:** One assignment must be approved for students to be able to sit the exam.

**Language:** English
Kursusindhold

Datamatik 1 er et løsningsorienteret kursus, der sigter mod at give de studerende IT-viden og færdigheder som direkte kan bruges i arbejdet som samfundsvidenskabelig kandidat eller studentemedhjælper.

Kurset sigter mod at give de studerende grundlæggende IT-viden baseret på problemstillinger knyttet til udnyttelse af administrative data. Opbygning af og udtræk fra administrative databaser kombineres med effektiv databearbejdning i regneark. På kurset indøves dels en selvstændig anvendelse af pc’en som udviklingsværktøj, og dels gives der en systemmæssig baggrund for kommunikation med IT-specialister.

Emnekredse i faget er:

- Udarbejdelse af makroer og funktioner i regneark
- Design og opbygning af grafiske brugergrænseflader (GUI)
- Programmering med grafiske kontroller
- Design og anvendelse af databaser
- Design og opbygning af web-sites med beregninger
- Systemoplæg og kravspecifikationer

I database undervisningen anvendes SQL mod Centrets SQL-Server database. Algoritmisk programmering baseres på anvendelse af VBA (Visual Basic for Applications) primært i forbindelse med udarbejdelse af makroer og funktioner i Excel.

Målbeskrivelser

Efter kursets afslutning skal den studerende kunne

Viden:

- Forklare sammenhængen mellem regneark, programsprog, applikationsgeneratorer og databaser
- Forklare principperne i relationsdatabaser
- Redegøre for SQL sproget og dets anvendelse
Forklare de grundlæggende teknologier der ligger bag World Wide Web

Færdigheder:

- Indspille og tilrette makroer til regneark som EXCEL, samt i egentligt programsprog skrive nye funktioner og procedurer til regnearket.
- Designe, oprette og teste Windows baserede applikationer
- Designe, strukturere og oprette mindre databaser
- Anvende SQL til komplekse forespørgsler som indeholder logiske udtryk og sub-queries
- Udforme mindre algoritmer

Kompetencer:

- Selvstændigt anvende en pc som udviklingsværktøj til administrative og analytiske løsninger
- Kommunikere fagligt med IT-specialister
- Indgå i en systemudviklingsgruppe

Undervisningsform

Forelæsninger, øvelsesopgaver, løsning af obligatoriske opgaver i gruppe. 2 timer hver uge og 2x2 timer hver anden uge i 14 uger.

For Efter- og Forårskurset gælder:
I brugerrummet ved Center for Anvendt Datalogi ydes vejledning i praktisk anvendelse af pc'en i forbindelse med øvelseskørsler og udarbejdelse af obligatoriske opgaver. Der lægges således vægt på, at den studerende skal formå at løse konkrete IT-opgaver.

For Sommerskolen gælder:

Anbefalede faglige forudsætninger
Elementær pc brug.

Pga. fagligt sammenfald kan kurset ikke tages af studerende, der har taget faget ICT-Applied.

**Formelle krav:** På sommerskolen er der mødepligt 9-17 og krav om aktiv deltagelse til alle dele af sommerskolen.

**Sprog:** Dansk
Content: This course will cover the following topics:

- Fertility: Measures of Fertility,
- Parity Determinants of Fertility and Birth intervals
- Marriage: Analyses of Marriage, Cohabitation and Divorce
- Mortality: Measures of mortality, Life Table
- Migration: Measures and determinants of migration
- Lexis diagram
- Survival analysis

Learning Outcome: This course is an introductory course in demography. The aim of the course is to provide an understanding of the basic methods and concepts in demography. The course focuses on the micro foundation of demography. Part of the course will be devoted to survival analysis since it is a very useful method in demography (and in other fields of economics).

The overall goal is that students after having completed the course should be able to:

- Understand the basic methods of demography
- Interpret and explain the concept of demography
- Read and understand empirical analyses of demographic transitions
- Understand the statistical methods underlying the demography measures
- Make simple calculations/estimations of basic demographic measures of fertility, mortality, migration and marriage

Teaching and Learning Methods: Lectures

Academic qualifications: Knowledge corresponding to the 1st and 2nd year on the BSc in Economics.
Exam registration requirements: The student are required to hand in write mandatory papers before they can sit the exam. The mandatory papers can be made in groups of up to four students. The papers has to been approved before the students can participate in the exam.

Language: English
6.5.19 AØKA08031U Development Economics

Content

Our understanding of economic development is constantly evolving. Economic theories and policies are adjusted, augmented and replaced as we gain new insights from observing the World. However, there is often more than one interpretation of observed outcomes. Therefore it is important to have knowledge of both the facts and economists' diverse interpretations of these facts.

The course "Development Economics" therefore gives an overview of the level and changes of socio-economic conditions, such as income, poverty, education and health in the global south. These conditions are put in perspective in presentations and discussions of the major trends in classical and contemporary thinking about economic development.

General textbook material and selected articles on the subject form the core of the readings. The range of topics covered include theories of development, micro- and macroeconomic issues and economic analysis as well as key policy issues and recommendations.

Learning Outcome

After completing the course, the student should be able to:

Knowledge:

- Show overview of both the issues addressed and the basic concepts used in development economics
- Identify, describe and assess the measurable indicators, which are used in socioeconomic surveys and analyses of the economic, social and institutional situation and characteristics of developing countries.
- Discuss theories and empirical evidence on economic inequality, poverty and growth and their internal relationships.
- Lay out the key elements of the more recent theories and development models.
- Present and discuss existing theory and empirical evidence on the importance of human resources (health, education and population).
Skills:

- Select relevant micro and macro theories and empirical methods for analyses of the current economic development issues covered in the course.
- Select relevant micro and macro theories and empirical methods for analyzing development issues that are similar to the issues covered in the course.
- Summarize and assess theory and empirical evidence on the economic characteristics and functions of selected markets (land, labour and capital/credit) in developing countries.
- Reflect upon ongoing professional debate in areas such as international trade, foreign direct investment and foreign aid.

Competences:

- Ability to apply theoretical and empirical knowledge about economic development in a competent, coherent and original way in relation to current challenges.

Teaching and learning methods

The format of the course is a combination of lectures and individual student work. Each week there will be a lecture (2x45 min.) at which core concepts, measures and theories are presented. In addition there will be a short session (45 min.) at which students work on their own (individually or in groups) with review questions of direct relevance for the syllabus and the exam.

Academic qualifications: Students should have taken Microeconomics and Macroeconomics courses corresponding to 2nd year undergraduate level at the Department of Economics.

Exam registration requirements: None

Language: English
**Content:** This course introduces students to modeling policy choices in a dynamic setting. It starts with applications of dynamic programming techniques to incentive problems, both for the design of policies, their credibility. We then characterize equilibrium when policies themselves are endogenous and equilibria are restricted to be Markov. Most examples will be on fiscal policy.

**Learning Outcome:** Students are expected to learn the logic behind dynamic programming with incentive problems and their applications to the understanding of contract design. Students will be taught the basic framework of dynamic voting models that use dynamic programming tools for economic and political decision simultaneously. At the end of the course the student is expected to understand, and be proficient in the application of the concepts and methods from the models covered in the course. The student should show competence in analyzing a macroeconomic problem, where the above-mentioned concepts and methods are central, that is competence in solving such models and explaining in economic terms the results and implications and how they derive from the assumptions of the model.

The particularly good performance, corresponding to the top mark, is characterized by a complete fulfillment of these learning objectives.

Some lectures will have time dedicated to solving problems sets that will be given in advance

**Teaching and learning methods:** Lectures and some exercise classes. At the beginning of every lecture, except for the first one, students will be given a short quiz based on the selected readings from the bibliography.

**Academic qualifications:** As a prerequisite the student must be familiarized with basic dynamic programming as covered, for example, in chapters 3, 4 and 7 in Ljungqvist L. and T. Sargent “Recursive Macroeconomic Theory” (2004) MIT Press.

PhD students may take this course and complete a research module. For this on addition of the requirements stated above, they must write a term paper that has to be handed in by October 1, 2017.
**Exam registration requirements**: Full participation at the summerschool is mandatory and the student must actively participate in all activities.

**Language**: English
6.5.21 AØKA08191U Dynamiske Modeller

Kursusindhold

Indholdet af kurset Dynamiske Modeller er avanceret matematisk analyse inden for komplekse tal og komplekse funktioner, topologi, differentialligninger og differentialligningssystemer, stabilitet, vektorfunktioner og korrespondancer samt variationsregning og optimal kontrolteori. Disse matematiske emner anvendes og skaber klarhed inden for adskillige økonomiske områder og har stor betydning for opbygning, forståelse og anvendelse af matematik i avanceret økonomisk teori.

1. Komplekse tal og deres anvendelser samt Eulers formler og komplekse eksponentialfunktioner.
2. Differentialligninger af anden og højere orden med konstante koefficienter.
4. Topologi, specielt i normerede vektorrum.
5. Kontinuitet og differentiabilitet for vektorfunktioner af flere reelle variable.
7. Konveks mængder i vilkårlige vektorrum og nogle udvalgte separationssætninger.
9. Forskellige ekstremumsproblemer, herunder betingede ekstremumsbestemmelser, for funktioner af flere reelle variable.
11. Variationsregning og optimal kontrolteori.

Målbeskrivelser

Faget ”Dynamiske Modeller” har til formål at give de studerende en dybtgående forståelse af en række
avancerede dynamiske begreber fra den moderne matematiske analyse, som de kan benytte inden for økonomisk teori både på bachelorstudiet og kandidatstudiet. Undervisningen bygger direkte på de matematiske emner, som de studerende har opnået kendskab til i kurserne “Matematik A” og ”Matematik B”.

Viden:

• Den studerende skal i løbet af kurset opnå viden om videregående og abstrakt matematiske metode og tankegang.

Færdigheder:

• I løbet af kurset skal den studerende opnå færdigheder i at gennemføre avancerede matematiske ræsonnementer, anvende definitioner og sætninger til at vise nye resultater og kunne anvende teorien til løsning af konkrete problemstillinger inden for avanceret matematisk analyse.

Kompetencer:

• Den studerende skal opnå kompetencer i løsning af avancerede og abstrakte opgaver og i at kunne sammenholde forskellige matematiske teorier mhp. anvendelser i økonomisk teori.

Undervisningsform

Forelæsninger og holdundervisning. Regneøvelserne i holdundervisningen omfatter gruppearbejde i forbindelse med opgaveregning og fremlæggelse af skriftlige opgaver.

Anbefalede forudsætninger: De studerende forventes at have faglige forudsætninger svarende til Matematik A og Matematik B.

Formelle krav:

Mindst 8 ud af 10 obligatoriske sæt skriftlige opgaver skal afleveres rettidigt og godkendes.

På sommerskolen er der mødepligt og krav om aktiv deltagelse til alle dele af sommerskolen.

Sprog: Dansk
**Content:** The course introduces topics in the field of economic growth with particular relevance to the growth process in the industrialized part of the world. In particular, we study theories of economic growth where knowledge accumulation drives technological change, as determined by factor accumulation as well as through research and development. We also discuss the role played by technology transfer; the importance of misallocation in development as well as of economic geography. Measurement issues concerning economic growth will also be discussed.

Empirical evidence will be discussed in an effort to gauge the practical importance of various theories. Moreover, we review current debates in the area of economic growth where we apply various frameworks that are introduced in the course. For example: is a growth slowdown on the horizon? What is the cause of the transatlantic productivity divergence?

There will be an emphasis on formal models; understanding them, being able to evaluate them from both a theoretical and empirical perspective, and to use them to analyse specific questions.

**Learning Outcome:** By the end of the course the student should be able to:

**Knowledge:**

- Have a broad appreciation of important papers in the literature relevant to economic growth in industrialized economies.

- Apply his/her knowledge of econometrics to articles that conduct quantitative analysis with bearing on growth within and across industrialized economies.

**Skills:**

- Understand theoretical models and arguments in the area, as well as be able to provide intuition for central mechanisms and assess the model’s empirical predictions.

- Appreciate some of the key debates among economists and how they relate to contemporary policy issues

**Competencies:**
• Have the background training needed to function as a trained economist working on the problems of less developed countries in an international organization, business environment, government or non-governmental organization

Teaching and learning methods: Lectures and exercise classes.

Academic qualifications: Working knowledge of growth models at a level corresponding to Barro, Rog X. Sala-i-Martin (2004). “Economic Growth” (2nd ed), MIT press, Ch. 1-3, which is covered in Macroeconomics II and Macroeconomics III at the department. Knowledge of basic econometrics such a cross-section and panel data analysis.

Useful reading before the course is taken includes the mentioned book by Barro and Sala-i-Martin Ch. 1-3.

Exam registration requirements: None

Language: English
6.5.23 AØKB08030U Economic Sociology

Content

Economic sociology gives you a new perspective on economic behavior and knowledge of the sociological theories most relevant for the understanding of economic behavior. This goes for individual economic behavior, behavior of individuals as part of a group with common interests as well as firm behavior.

Economic sociology increases your ability to reflect critically on the core mechanisms and institutions influencing economic behavior and your ability to challenge conventional thoughts in economic theory.

Economic sociology increases your perspective on social theory and on the society and interlinks theoretical reasoning with real life economic phenomenons.

The field can be broadly divided into a classical period and a contemporary one.

The classical period was concerned particularly with modernity and its constituent aspects which are rationalisation, secularisation, urbanisation, social stratification, and so on. The specific term "economic sociology" was first coined by William Stanley Jevons in 1879, later to be used in the works of Émile Durkheim, Max Weber and Georg Simmel between 1890 and 1920. Weber's work regarding the relationship between economics and religion and the cultural "disenchantment" of the modern West is perhaps most iconic of the approach set forth in the classic period of economic sociology.

Contemporary economic sociology includes studies of all modern social aspects of economic phenomena; economic sociology is thus a field in the intersection of economics and sociology. Frequent areas of inquiry in contemporary economic sociology include the social consequences of economic exchanges, the social meanings they involve and the social interactions they facilitate or obstruct.

The economic sociological studies of markets are crucial in the study of exchange.

The Course gives the student thorough knowledge of the classical economic sociological analysis on the development of the modern society.

It gives an introduction to classical economic sociology with an emphasis on Weber, Marx, Durkheim and Simmel in order for the student to be familiar with classical theories in order better to understand
contemporary economic sociological theories by Bourdieu, Giddens and Habermas.

The main part of the course is on contemporary economic sociology.

**Learning Outcome**

After completing the course, the student should be able to:

**Knowledge:**

- The student gets knowledge of the contents and developments of economic sociology since Granovetters reintroduction of the concept of embeddedness in the mid 1980s and the development of economic sociology with contributions from among others Gary Becker and Bourdieu.

- The course contains texts that contribute to the understanding of markets, the role of the state and the impact of social structures in relation to how modern society works and how it should be studied. Knowledge on economic sociology, sociological theory and economic sociology analysis on societal developments gives the student a comprehensive knowledge of the manifold and creative economic sociological analysis of modern society and the societal frames and background for individual action.

- This gives the student knowledge in ways of analysing modern society and individual actions that in many ways challenges economic theory.

**Skills:**

- The student gets skills that will enable him/her to asses societal developments in general and specific political interventions in relation to their potential outcome taking the core argument of embeddedness from economic sociology into consideration.

**Competencies:**

- The student gets competencies that makes it possible for him/her to have a critical view on conventional economic theory and and question in an organised way recommendations that are
based on neoclassic economic theory.

**Teaching and learning methods**

Teaching will be lectures based on active participation from students based on lectures notes and discussion themes distributed to the students in advance.

**Academic qualifications**

Students must have a basic knowledge of economic theory including knowledge of the basic assumptions on human behaviour in neoclassic economics. A good knowledge of economic history and the major developments of the capitalist economy from the industrial revolution and forward is an advantage.

**Exam registration requirements:** None

**Language:** English
Content: The course covers two aspects of the topic, microeconomics of banking and risk management. In the microeconomics part, teaching starts with discussing key competences of banks, proceeds to fundamental aspects of banking such as the loan contract and credit rationing, discusses liquidity problems and bank runs, and ends up with a treatment of bank regulation involving the roles of central banks, deposit insurance and financial supervision authorities. In the risk management part, the course covers the basics of risk management in banks, measurement of risk, and then discusses the different types of risk occurring in banking, namely liquidity risk, interest rate risk, market risk, credit risk, and operational risk. For each of the risk types, the course covers the measurement of risk as well as methods for reducing risk.

Course Outline:

Introduction: Key competencies of banks

Types of financial intermediation; basics of risk management

The loan contract; interest rate risk

Rationing in the credit market; market risk

Securitization and shadow banking

Credit risk

Payments and its impact on banking

Competition and risk taking

Irregularities in banking

Liquidity crises and bank runs; operational risk

Deposit insurance

Lenders of last resort
Reorganizing and closing banks

The Basel regulations

**Learning Outcome:**

After completing the course, the student should be able to:

**Knowledge:**

- Identify and assess the roles of banks in the financial sector, related to the basic problems of asymmetric information in its different forms,
- Know the basic principles of risk management and of risk measures, as well as the basic organisation of risk management in a bank,
- Understand the causes of bank runs and bank panics, knowledge of different institutional setups designed for coping with bank runs,

**Skill:**

- Select relevant theories and analyze problems related to financial intermediation,
- Evaluate alternative methods for managing risk in banks,
- Give suggestions for suitable regulation in the financial sector,

**Competences:**

- Assess properties of credit markets, designing improvements of the contract structure,
- Give advice for the regulation of financial intermediation and for the prevention of financial crises.

**Teaching and learning methods:** Lectures

**Academic qualifications:** None

**Language:** English
Content: This course explores why individuals and society invest in education. Education has many private benefits (earnings, employment, health and longevity, consumption value), as well as social benefits (GDP growth, tax income, positive externalities). Education also affects inequality within a generation and across generations. Throughout this course, current policy issues concerning education will be discussed. Economic models will be connected to data that can be used to test the models’ implications, and students will learn how models and data can serve to inform education policy. Applications will address primary and secondary education, university education, and vocational or on-the-job training, and place the Danish and European experience in an international context.

First, we will introduce human capital theory to study individual decision-making. It will be used to analyze investments in education and how they are affected by ability, comparative advantage, family background, and macroeconomic conditions. We will encounter the empirical problem of disentangling the return to education from the return to innate ability, and investigate how the association between education and individual earnings has changed over time.

At the societal level, we will study the social return to education and the financing of publicly provided schooling. Looking at the production of education, we will ask how educational outcomes are produced by schools, whether more money produces higher student achievement, and which school inputs are more or less effective in producing desired educational outcomes (such as PISA test scores). We will consider the potential of early childhood education in the context of skill-formation over the life cycle. We will also reflect on possible conflicts between societal goals - efficiency, equity, and liberty - that influence decisions about the allocation of education resources.

From a macro perspective, education matters for national economic growth as well as for individual mobility. We will investigate whether there is a risk of over-education, or whether individuals under-invest in light of a rapidly changing economic reality and international competition. We will also study the intergenerational transmission of economic status through parental investments, credit constraints and achievement inequality, and the resulting income distribution.

Learning Outcome

This course will teach students how to apply economic thinking to education-related questions. In doing so, the class will draw on a wide range of economic principles and apply previously learned material. The
variety of models and perspectives will range from macro to micro, including labor economics, macroeconomic growth, and public finance. Students will be equipped with an economic toolbox to evaluate education policy issues methodically, and should eventually be able to use these tools to inform education policy. While the course will be based on theory, it is nevertheless of an empirical nature: recent data will be used to evaluate current issues, and students will learn how to read empirical articles that form the state-of-the art in economics of education.

After taking this course, students should be able to apply economic theories to address education question as a well-trained economist and should be able to:

Knowledge:

- **Understand** economic models in the education context,
- confidently **identify** determinants of equilibrium/optimality and **describe** the role they play relative to each other.
- **Recall** the frameworks and their assumptions, as well as their economic predictions.
- Know the empirical state-of-the-discipline where they need to be able to **read** selected articles in economic journals and **extract** the appropriate conclusions. Additionally, they need to **examine** whether the presented empirical evidence convincingly identifies causal relationships. Later, evidence needs to be **recalled** to address topics.

Skills:

- **Identify key questions** in a brief non-specific text, presented as a policy issue rather than an economic model. Then, **link** the key questions to economics of education.
- Need to **select** the theories and pieces of empirical evidence which are **relevant** for the question or debate. Students need to learn how to choose the correct theory or framework that helps them **organize** an argument around a given education issue (manage the topics).
- **Evaluate** the real-life relevance of possible economic explanations or scenarios, to give an **assessment** of which explanation or hypothetical outcome is more or less likely. This means they have to **navigate** the sometimes contradicting models or papers that we have studied and present their trade-offs.

**Competencies:**
• Present arguments orally and in written form, which are based on their reading of theory as well as state-of-the-art empirical findings.
• Construct concise cases where they show their well-rounded appraisal of a situation that connects economic theory to the real world.
• Equipped to evaluate policy proposals critically and scientifically, and present arguments in favor or against them.

**Teaching and learning methods**

Lectures are not only frontal teaching, but involve discussions between students and the instructor.

Active participation is expected during the lectures, as well as the exercise classes which include peer-feedback on assignments.

With some topics, we will practice the argumentation skills in a panel-discussion, where prepared content is debated and the strengths of different arguments evaluated.

Mandatory individual assignments prepare technical material and practice the exam form (written evaluation of policy-relevant education issues, demonstrating ability to draw on appropriate economic theories).

**Academic qualifications**

The course material has two components: Economic theory as it relates to education, and the application of this theory to real-life issues, using empirical methods.

In the first couple of weeks of the course, therefore, we study human capital theory and students are expected to be able to follow the derivations of these models themselves. This requires knowledge of constrained optimization techniques. They will be practiced in the exercise classes.

Then, building on this foundation, we study empirical papers and discuss the benefits/disadvantages of different approaches to using available data to evaluate questions such as the returns to education. While students will not be working with data themselves in this course, a basis in econometrics is needed to a) understand issues such as causality, and b) interpret the estimation results presented in the scientific papers.
Ideally, students should have taken the courses Microeconomics I, Microeconomics II, "Probability theory and statistics" (Econometrics A) and Econometrics II corresponding to the 2nd year undergraduate sequence in the Department of Economics at KU.

**Exam registration requirements:** There will be about 8 Assignments, which are graded 0 (fail), 1 (pass), 2 (outstanding). In order to qualify to participate in the final exam, students need to obtain a total score in their assignments that is at least 75% of the total possible points on the basis of passes. At 8 assignments, students need to pass at least 6 with a grade of "1".

**Language:** English
Content
The course introduces the basic economic concepts relevant for analyzing problems and policies relating to the environment, natural resources and climate change, using theories and analytical tools from microeconomics and macroeconomics.

Learning Outcome
After completing the course, the student should be able to:

Knowledge: account for
The central economic services provided by the environment
The basic theory of optimal management of natural resources
The economic definitions and applicability of the concepts of “Green Growth” and “Sustainable development”
The distinction between “weak” and “strong” sustainability
The key issues in the debate on the choice of discount rate in the evaluation of environmental and climate policies
The principles for valuation of environmental goods and services
The theory of the environment as a public good
The basic theory of optimal environmental policy and regulation, including the distinction between first-best and second-best policy
The advantages and disadvantages of alternative instruments of environmental policy
The theory of optimal environmental taxation and the debate on the “double dividend” from a “green” tax reform
The assumptions underlying standard Integrated Assessment Models of climate change
The issues involved in the debate on the valuation of damages from climate change
The concepts of the Social Cost of Carbon and the Strategic Social Cost of Carbon
The basic theory of optimal climate policy, including guidelines for a rational climate policy under
fundamental uncertainty

The basic economic issues and incentives relating to international negotiations on climate policy

The theory of the “Green Paradox” in climate policy and the critique of this theory

Skills:
Apply the standard mathematical method for static optimization subject to constraints to analyze environmental policy problems such as the determination of the optimal level of pollution abatement and the optimal environmental tax rates

Apply optimal control theory to solve dynamic optimization problems subject to constraints such as the determination of the optimal extraction of natural resources and the optimal pace of reduction of greenhouse gas emissions

Competencies:
Explain and present central parts of economic theories and models of the environment, natural resources and climate change in a clear and correct language

Undertake a critical evaluation of the strengths and weaknesses of the theories and models presented in the course

Present and evaluate key parts of the theory of environmental regulation and discuss the role of the state and the market in the implementation of environmental policy goals

Apply the theoretical and empirical insights from the course in a critical analysis and discussion of important real-world problems of environmental and climate policy.

Teaching and learning methods
As a complement to the ordinary lectures, the course includes guest lectures by Danish experts who will present examples of practical applications of the theories presented in the course. The course also includes a half-day seminar on Environmental Economics where leading representatives of the Danish Environmental Economic Council and the Danish Council on Climate Change will present their most recent analyses and policy recommendations for discussion by invited expert commentators.

Before the end of the first month of teaching students must hand in a mandatory exercise involving the application of optimal control theory to the solution of an environmental policy problem. During the course students will be invited to solve additional exam-relevant exercises on a voluntary basis.

Academic qualifications
Knowledge of microeconomic and macroeconomic theory corresponding to the requirements in the first two years of the Bachelor programme in the Department of Economics.

Language: English
Content

This is an introductory course on the economics of the European Union focusing on main economic and legal aspects of European integration as well as its policies. The course covers the historical development of the EU; regional cohesion, and competition policies; labor mobility and migration; the Common Agricultural Policy (CAP); monetary unification and the impact of the single currency; the common monetary policy in the euro area; and fiscal policy within a monetary union. In addition to these topics, the course also covers recent developments in the EU including the euro crisis and the policy response to the crisis.

The course is divided into three parts. The first part will cover the historical, political and institutional foundations of European economic integration including the role of the European Commission, the European Parliament and the Councils of Ministers.

The second part focuses on current issues including the euro crisis. First, we consider the micro and macroeconomic aspects of monetary integration. Starting with the theory of optimum currency areas, we analyze the economic and institutional aspects of the European Monetary Union, including the Stability and Growth Pact, Fiscal Compact and Banking Union. Then we turn to the current financial crisis in Europe focusing on the banking crises in Ireland and Spain and the Greek debt crisis. The policy responses to these crises are also discussed including the question whether these policies can resolve the crises and prevent future crises.

The third part analyzes European integration from a microeconomic perspective focusing on the effects of integration on economic growth, both at a national and a regional level. Key topics include the Common Agricultural Policy and the Rural Development and Regional Policy funded by the European Union. In addition, to these topics, we also discuss labor market policies, the European social model and flexicurity, and labor migration.

Learning Outcome

After completion of the course, students should be able to:

Knowledge
- Describe the history of economic integration in Europe since 1973.

- Explain and describe the main political and institutional characteristics of EU and the European Monetary Union.

- Explain and describe the main problems in economic integration and with the main policies adopted by the EU.

- Understand and explain theoretical and applied issues of the process of Economic and Monetary Union in the EU.

- Understand and explain the role and distinctive features of labor markets in the EU.

- Understand and explain the role and evolution of the common agricultural policy in EU.

- Understand and explain the consequences of EU policy for the rest of the world.

- Explain the role and institutional characteristics of the common monetary policy and of the national fiscal policies in the European Monetary Union.

- Explain and describe the causes of and policies designed to resolve the euro crisis.

**Skills**

- Be able to apply relevant macroeconomic models to the analysis of European integration and monetary union.

- Be able to apply the theory of optimum currency area and apply this theory to the analysis of the European Monetary Union.

- Be able to explain and apply economic growth theory and its relevance for the European Union.

**Competences**

- Process relevant information for the analysis of European integration.

- Carry out economic analysis related to current issues in Europe.

**Teaching and learning methods**

The course consists of 2 hours of classes (lectures) every week and 2x2 lectures every second week for 14 weeks.

**Academic qualifications**

Intermediate microeconomics and macroeconomics corresponding to Micro II (Micro B) and Macro II (Macro B) or the equivalent are strongly recommended. There is no formal prerequisite in
mathematics/statistics, but some of the readings will involve empirical studies and prior knowledge of empirical analysis corresponding to 'Probability theory and statistics' (Econometrics A) and Econometrics II (Econometrics B) would therefore be an advantage.

Exam registration requirements:

Two homework assignments have to be completed and approved.

Language: English
Content

The course is a replacement of International Finance.

This course focuses on issues in international money and finance using both a macroeconomic approach where exchange rates are explained by macroeconomic relationships and a microeconomic approach where exchange rates are determined by the interaction between market participants, for example dealers, corporations and central banks. Key topics include foreign exchange markets, how trades take place in the interbank and the retail segments of the market, exchange rate risk, carry trade, exchange rate determination, central bank interventions, order flows as a determinant of exchange rates, and the effects of news.

The main theme of this course is to combine theoretical models with empirical testing. Throughout the course, we first present a particular theoretical model and then we turn to the data and test whether the predictions (or assumptions underlying the theory) are consistent with actual behavior.

The course is divided into two modules. In the first module we apply a macroeconomic perspective on exchange rate determination focusing on flexible price and sticky price models as well as portfolio balance models. The empirical support for these models is discussed and we evaluate the models using their forecast performances. Central bank interventions are discussed from both theoretical and empirical perspectives.

The second module focuses on the microeconomic approach where we study the interaction of market participants and how the trading process determines the price of foreign exchange, the microstructure of the foreign exchange market. We will study how and why order flows determine exchange rates. The module also bridges the gap between microstructure and macroeconomic perspectives by analyzing the effects of releases of macroeconomic news on the exchange rate.

Learning Outcome

After completion of the course, students should be able to:

Knowledge:

- Describe how the foreign exchange market is organized and how trades take place in the market.
• Describe the institutional features of the foreign exchange market products (spot and forward contracts) and be able to distinguish between speculation and arbitrage.

• Describe the types of risks that foreign exchange traders face and how these can be managed.

• Describe and explain Covered Interest Rate Parity (CIP), Uncovered Interest Rate Parity (UIP), and Purchasing Power Parity (PPP) and be able to summarize the empirical evidence on international interest these parity conditions.

• Describe and explain how macro data releases affect exchange rates and summarize the empirical evidence.

**Skills:**

• Describe the main models of exchange rate determination (the Monetary approach to the exchange rate, Dornbusch overshooting model, the portfolio balance model and Lucas asset pricing model) and apply these models to analyze the effects of monetary and fiscal policy on the exchange rate, and summarize the empirical evidence on these models.

• Describe and apply Mundell-Fleming models to analyze the effects of economic policy under both flexible and fixed exchange rates.

• Describe and apply microstructure based models to analyze price determination on the foreign exchange market and summarize the empirical evidence on these models.

• Describe the channels by which central bank intervention can affect the exchange rate and summarize the empirical evidence on these channels.

• Describe, explain and apply investment strategies based on international parity conditions.

**Competences:**

• Process relevant information for the analysis of the foreign exchange market.

• Carry out economic analysis related to exchange rate determination, forecasting and international financial management.

**Teaching and learning methods:** Lectures

**Academic qualifications**

Prior to enrolling in this course, students should have taken at least second year microeconomics and macroeconomics. It is recommended to have followed Corporate Finance and Incentives and Econometrics II. The course requires a good grasp of econometrics and mathematics.
Exam registration requirements: Two compulsive homework assignments has to be completed and approved.

Language: English
6.5.29 AØKA08017U Erhvervsret (F)

Kursusindhold
Deltagerne vil blive introduceret til den juridiske metode, retskilderne, deres udvikling og anvendelse, retssystemets opbygning og funktion samt en række retsområder, der har væsentlig betydning i erhvervssammenhæng, herunder Aftale- og kontraktsret, køberet, kreditkøb, internationale køb, køb og salg af fast ejendom og tjenesteydelser. Reglerne om erstatning uden for kontrakt og forsikring samt reglerne om produktansvar. Regler vedrørende lån, kreditgivning og sikkerhedsstillelse for samme i form af pant og kaution. Ansættelseretsretlige regler, herunder funktionærretten, Regler vedrørende virksomheders juridiske organisering i form af anparts- eller aktieselskaber, interessentskabet, kommanditselskaber m.m. Reglerne for markedsføring og konkurrenceret samt immaterielretten i form af ophavsret, patenteret, varemærkeret m.m., og endelig insolvensret (konkursret).

De enkelte områder belyses med udgangspunkt i pensum, ved gennemgang af domme og med konkrete eksempler fra dagligdagen.

Faget sigter ikke på at gøre økonomer til jurister, men på at give de studerende kompetencer til at samarbejde med revisorer, jurister og andre, der arbejder med erhvervsmæssige problemstillinger.

Målbeskrivelser
Efter kursets afslutning skal den studerende kunne:

Viden:

- Forstå lovtekster og lovenes anvendelse
- Redegøre for lovgivningens funktion og formål
- Identificere juridiske problemstillinger

Færdigheder:

- Kunne vurdere i hvilket omfang en problemstilling indeholder juridiske elementer
- Kunne analysere enkle juridiske problemstillinger
- Kunne argumentere for valg af løsning på et juridisk problem
• Kunne præsentere et kvalificeret bud på en juridisk problemløsning.

**Kompetencer:**

• Kunne tage ansvar for håndtering af juridiske problemstillinger – enten på egen hånd eller ved at kunne vælge rådgivere med rette specialkompetencer til at medvirke.
• Kunne igangsætte erhvervsinitiativer med basal juridisk afklaring

**Undervisningsform:** Forelæsninger af 3 timer pr. uge i 14 uger.

**Anbefalede faglige forudsætninger**

Faget forudsætter ikke nogen specifikke kompetencer hos de studerende ud over interessen for at sætte sig ind i et fagområde, der ligger uden for studiets kerne.

**Sprog:** Dansk
Content: The course will cover the following topics:

- Household production models, time use
- Marriage: Gains from marriage and cohabitation, matching in the marriage market, divorce
- Fertility: Models of fertility, empirical trends in fertility, the cost of children, quantity-quality trade-off in fertility
- Intra-household allocation: Division of labor; Unitary and collective models of family decision making and allocation within the family
- Labour supply in the family: The gender wage gap and the family gap
- Child development: Child development production function, parental investments, daycare and schooling
- Altruism in the family – intergenerational transfers

Learning Outcome: The aim of the course is to provide an understanding of the theoretical foundations for Family Economics, empirical applications of the theory, and recent trends in family patterns. The course focuses on the micro foundation of Family Economics.

Students having completed the course should be able to:

1. Understand the basic theory behind Family Economics
2. Understand empirical analyses of issues related to Family Economics
3. Perform simple statistical/microeconometric analyses of empirical problems related to Family Economics

Teaching and learning methods: Lectures. The lectures will cover theoretical aspects of Family economics, but also open up to empirical applications. The empirical applications will be discussed in a class-like structure, with student preparation and some student presentations.

The last 4 weeks of the semester will be devoted to the students writing a term paper. The term paper should consist of an empirical analysis of a problem within Family Economics. The students choose a topic
and find suitable data, and the outline for the term paper has to be approved by the lecturer. The students should write individually. The final grade in the class is purely on the basis of the graded term paper.

**Academic qualifications:** Knowledge of basic microeconomics and basic microeconometrics (at an equivalent level to Micro B and Econometrics B) is required.

**Exam registration requirements:** Outline for the term paper has to be approved by the lecturer.

**Language:** English
Content
The course gives an introduction to the properties and stylized facts of univariate asset returns and their variability with emphasis on modeling of (conditional) volatility. We consider three different modeling approaches to volatility: (1) GARCH-type models, (2) stochastic volatility models (SV), and (3) realized volatility (RV).

The stochastic properties of the processes are analyzed and discussed in detail using mathematical statistical methods. A key tool for the analysis of GARCH-type and SV models is the so-called drift criterion for Markov chains.

Estimation of volatility and volatility models will be based primarily on (quasi) maximum likelihood. This includes applications of the EM-algorithm as well as the Kalman filter.

The theoretical properties of the estimators are analyzed and sufficient conditions for asymptotic normality are stated and verified.

All estimation is carried out in OxMetrics 7.0 and the students are expected to do some amount of coding using the Ox programming language.

The goodness of fit of the models are discussed based on analysis of the model residuals.

Learning Outcome
After completing the course, the student should be able to:

Knowledge

- Account for properties of stochastic processes used for volatility modelling. This includes strict stationarity, mixing, and geometric ergodicity.
- Account for properties of maximum likelihood estimators in volatility modelling.
- Account for properties of Realized Volatility (RV) processes, including continuous-time processes.
- Account for applications of volatility models, including Value-at-Risk (VaR), option pricing, and
forecasting.

Skills

- Analyze stochastic properties (e.g. weak mixing and finite moments) time series processes, such as AR and ARCH. This includes verifying a drift criterion.
- Show (under suitable conditions) that the likelihood-based estimators are asymptotically normal.
- Implement the estimation of volatility models using the Ox language.
- Implement the estimation of volatility in relation to for example VaR analysis, forecasting, and option pricing.
- Analyze the properties of continuous time processes and show how to estimate their quadratic variation consistently.
- Discuss the suitability of a given (G)ARCH, SV, or continuous time process given well-known stylized facts about financial returns.

Competencies

- Apply the acquired knowledge and skills in new contexts. For example the student should be able to analyze richer classes of models (such as multidimensional) and carry out estimation of these. Another example is to apply the acquired knowledge when considering linear regression models with financial time series data.
- Ideally read leading and novel journal articles within financial econometrics.

Teaching and learning methods: Lectures and classes

Academic qualifications

The knowledge obtained from Econometrics II (former Econometrics C) before or at the same time the Financial Econometrics A is taken or an equivalent course on introductory time series analysis.

In particular, the student should be familiar with:
1. Linear time series models, such as AR and ARMA.
2. Likelihood-based estimation of linear time series models, including the basic properties of the estimators.
3. Basic misspecification tests in time series models (tests for no-autocorrelation, no-ARCH, and normality).
**Exam registration requirements**: The students must pass 3 of the 3 mandatory assignments in order to register for the exam.

**Language**: English
Content: This course introduces topics from research in financial time series econometrics. For each topic, the econometric methods are discussed and illustrated by empirical applications. Topics are selected from within: Econometric Modeling of Asset Returns: - Multivariate GARCH models with application to portfolio selection and value at risk (VaR). - Test of market efficiency: Asset return predictability.

Static and Dynamic Asset Pricing Models: - The capital asset pricing model (CAPM) and the asset pricing theory (APT) model. - Term structure models, including co-integration.

High-Frequency Modeling: - Continuous time methods - Autoregressive conditional duration (ACD), and integer valued financial time series models.

Learning Outcome: This course introduces topics from research in financial time series econometrics. For each topic, econometric methods are discussed and illustrated by empirical applications. After completion of the course the student will have obtained a fundamental knowledge of central econometric modeling as applied in research within financial econometrics. For each topic treated this will include: - The ability to analyze the financial econometric models such that their properties are well-understood from a methodological point of view. This will include theory for estimation and testing, dynamic properties and linkage with applied literature. - The ability to implement the econometric models in applied work and interpret the results empirically and theoretically.

The topics covered, e.g. multivariate volatility modeling, asset pricing models and term structure models, will vary from year to year.

Teaching and learning methods: Lectures

Academic qualifications: A background in econometric methods as presented in e.g. "Financial Econometrics A". In particular, this includes likelihood-based analysis of univariate GARCH models.

Exam registration requirements: Full participation at the summerschool is mandatory and the student must actively participate in all activities.

Language: English
Content: This course examines the basic channels through which financial frictions affect macroeconomic outcomes. Emphasis will be given to the transmission mechanisms that lead to amplification and persistence of shocks, including the role played by liquidity. Using several general equilibrium models we will learn more thoroughly the functioning of financial markets, why they are prone to crises, and the rationale for financial regulation.

Learning Outcome
After completing the course, the student should be able to:

Knowledge:
- Understand the basic imperfect information models of moral hazard and asymmetric information and their applications to the understanding of financial intermediation.
- Use these tools to understand how frictions lead to the amplification and persistence of shocks.

Skills
- Manage the topics, methods, tools and theories learned during the course.
- Analyze the role of different financial frictions
- Be proficient in the application of the concepts and methods which can be then used in other courses or in a future job after graduation.

Competencies:
- Analyze a macroeconomic problem, where the above-mentioned concepts and methods are central, that is competence in solving such models and explaining in economic terms the results and implications and how they derive from the assumptions of the model.

Teaching and learning methods
Lectures and a few classes.

**Academic qualifications**

BSc in Economics. It is strongly recommended that Micro C/Micro III and Macro C/Macro III has been followed prior to taking the summerschool 2016.

**Exam registration requirements:** To be able to sit for the exam:

- Full participation at the summerschool is mandatory and the student must actively participate in all activities.
- Students must have passed three written assignments during the summerschool.

**Language:** English
Content: This course examines the financial markets from a Micro perspective. When traders operate in the financial market, how do they arrive at the transactions prices? How is the traders’dispersed information incorporated into these prices? What determines the liquidity and depth of an asset market? What is the optimal behaviour for traders in financial markets? Why do bubbles and crashes arise? Do the institutional details of the exchange influence this price formation process? If so, how should exchanges and regulators ideally design the rules of trading? Is there a role for market making, should the market be fully transparent, should insider trading be permitted, should transactions be taxed, and is high-frequency trading good or bad for the market?

Financial economics addresses these and related questions in the field of financial markets’ microstructure. This course seeks to give a broad introduction to the field through a textbook covering theory, evidence and policy. It also provides deeper insight on topics of current interest on the basis of selected current research papers. The lectures will often draw on recent media clippings of relevance for the topic.

Learning Outcome: A strong analytical framework now provides a good understanding of Financial Market issues. Nevertheless, research in this area still leaves many questions open for further investigations. This course partly gives participants a review the facts on financial markets, partly presents the key theoretical models, and partly addresses how the models are applied to the important issues.

The final exam tests the students’ specific and general knowledge of the aforementioned aspects of Financial Market theory, emphasizing three abilities:

1. The ability to readily explain and discuss key theoretical concepts and results from academic articles, as well as their interpretation,

2. The ability to carefully derive and analyze results within an advanced, mathematically specified theoretical model,

3. The ability to apply the most relevant theoretical apparatus to analyze a given, new case-based problem.

In order to achieve the maximal grade for the course, the student must excel in all three areas.
Teaching and learning methods: Mostly lectures covering the syllabus with a view towards accomplishing the course goals. Supplemented by problem sets.

Academic qualifications: The course builds mainly on basic Finance, such as may be acquired in the third year course on Corporate Finance and Incentives. We also employ the modelling skills from the bachelor’s courses in Micro.

Language: English

6.5.35
Content: Why do people volunteer and donate to charitable causes? Why do they engage in costly punishment of unfair and anti-social behavior? Why do we often eat unhealthy food, exercise too little, and struggle with completing important tasks in a timely manner? Why do most people think that they are better-than-average drivers, entrepreneurs, lovers, ...? From the perspective of conventional economic theory, these questions are difficult to explain. Behavioral Economics is an attempt to shed light on these and other puzzling phenomena. By enriching the traditional economic model with an empirically more accurate foundation of human behavior, Behavioral Economics aims at improving the predictive power of economic models and the resulting policy recommendations.

In this course, we will discuss the psychological foundations of human behavior and their economic implications. We will present the empirical regularities that have inspired the development of Behavioral Economics, analyze the key theoretical models that have been brought forward, and discuss a number of applications where insights from Behavioral Economics have contributed to a better understanding of individual behavior and market outcomes.

In the course, we will present the empirical regularities that have inspired the development of Behavioral Economics, analyze the key theoretical models that have been brought forward, and discuss a number of applications where insights from Behavioral Economics have contributed to a better understanding of individual behavior and market outcomes.

The course will focus on the following topics:

- Reference-Dependent Preferences and Loss Aversion
- Present-Biased Preferences and Limited Self Control
- Limited Cognitive Resources and Attention
- Fairness and Social Preferences
- Behavioral Economics, Market Interactions, and Economic Policy
Learning Outcome

After having successfully completed the course, students should be able to

Knowledge:

- understand central theoretical insights and empirical research results in behavioral economics.
- understand how economic theory, lab and field experiments, and other complementary empirical methods can be used to address research questions in behavioral economics.

Skills:

- interpret and critically assess theoretical and empirical studies at the intersection of economics and psychology.
- put the results of these studies into perspective and identify limitations of the existing body of knowledge.

Competencies:

- apply behavioral economic insights to theoretical problems and practical empirical questions.
- The course also equips the students with the necessary tools and skills to continue working on behavioral economic topics in seminars or Master’s theses.

Teaching and learning methods:

Lectures will supplemented with a number of guided practice sessions. In the practice sessions, we will discuss problem sets and homework assignments. Assignments will consist of theoretical exercises and empirical case studies through which the students can deepen and apply the knowledge acquired in the lecture.

Student participation and an active discussion will be expected and encouraged.

Academic qualifications: A thorough knowledge of microeconomic theory and econometric techniques are required. In particular, it is required that students have successfully completed the courses in Microeconomics I - III and Econometrics I - III. Ideally, students should also have attended the interdisciplinary course on “The Psychology of Choice”.
Exam registration requirements: None

Language: English
6.5.37 AØKA08076U Game Theory (F)

Content

This is a mathematically oriented course of game theory.

The course covers the standard parts of game theory, focusing mainly on non-cooperative games. The course starts with the expected utility theorem. For non-cooperative games, the teaching covers the most important solution concepts for strategic and extensive form games. The Aumann model of knowledge is presented. Also, the theory of games under uncertainty is discussed, leading to the extension of the solution concepts previously encountered. Furthermore, we study specific classes of games (e.g. supermodular games and global games) that are often used in economic theory. Finally, we illustrate a more axiomatic approach by discussing the basics of social choice theory. If there is time and interest, the implementation problem as well as matching algorithms might be covered.

We will formally show under which assumptions the covered solution concepts exist and derive certain properties. We will then illustrate and apply the solution concepts in examples and exercises. A detailed lecture schedule will be published online at the start of the term.

Learning Outcome

The course aims at giving the students the abilities and competences needed to understand and assess the fundamental aspects of strategic decision making by rational individuals where the framework for decision making specifies the actions open to the individuals as well as their objectives and the information available. The methodological goal of the course is to get students more accustomed to formal notation, proofs and logical reasoning. Students should have:

Knowledge:

• of all the covered concepts and be able to determine which of the covered concepts is relevant in a given strategic situation (e.g. a fully specified game).

Skill:
• to apply the appropriate (solution) concept in this situation.

• be able to explain the concepts covered in the course using appropriate definitions and examples.

**Competence:**

• to point out strengths and weaknesses of the concepts and

• being able to relate different concepts.

**Superpower:**

• applying Brouwer’s fixed point theorem.

**Teaching and learning methods**

The course consists of 3 hours of classes (lectures) every week for 14 weeks.

**Academic qualifications**

It is strongly recommended that Micro C/Micro III has been followed prior to taking Game Theory. Mastering the material from the Mathematic courses in the Bachelor program is very helpful.

**Exam registration requirements:** Midterm (1 week take-home assignment that can be done in groups) must be passed in order to be admitted to the final exam (oral exam).
Content
The course will give students an introduction to the principles of economic evaluations in health care.

Topics include:

- Foundations for economic evaluation
- Critical assessment of clinical trials
- Cost measurement
- Budget impact and cost-of-illness
- Cost-benefit, cost-effectiveness and cost-utility
- Outcome and preference measurement
- Trial-based economic evaluations and decision-analytic modeling
- How to present results and how to handle uncertainty
- Value of information analysis
- Systematic reviews and meta-analyses
- Introduction to modeling methods in MS Excel
- Prioritization in the Danish health care sector

Learning Outcome
After completing the course, the student should be able to:

Knowledge:

- Explain the difference between welfarist and extra-welfarist approaches to health economic evaluations
- Explain differences between cost-benefit, cost-effectiveness and cost-utility analyses
- Understand and identify biases in clinical trial design and reporting
- Explain the methods and value of meta-analyses
- Describe the differences between alternative decision-analytic models including decision trees and
Markov models and the difference between trial-based evaluations and decision-analytic models

- Explain the concepts of deterministic and probabilistic sensitivity analysis and their ability to assess robustness of results
- Explain concepts related to preference measurement (including time trade-off and standard gamble) as well as common instruments (including EQ-5D)
- Explain the concepts of budget impact analysis and value of information analysis and their usefulness in healthcare decision-making

Skills:

- Critically assess health economic evaluations as published in the scientific literature
- Assess the documented efficacy of a healthcare intervention

Competencies:

- Using the published literature, determine if a particular healthcare intervention can be said to be cost effective or not
- Analyze cost-effectiveness analyses to determine the drivers of conclusions and assess their validity
- Identify proper methods for analyzing cost-effectiveness of a new healthcare intervention and structure the analysis

Teaching and learning methods: Lectures

Academic qualifications

Understanding of economic concepts including opportunity costs and statistical methods.

Exam registration requirements: None

Sprog: English
6.5.39 AØKA08079U Health Economics

Content

Health economics falls within the umbrella of Public Economics, i.e., the course studies the interaction between health care providers, patients, governments and insurers. It evolves around the demand for health and health care, supply of health care, (asymmetric) information economics, economics of health innovation, health policy and public health economics. Hence, the course in Health Economics provides the student with solid knowledge about a wide range of health economic models and applications.

As an applied micro course, the student sees how fundamental issues in often complex health economic problems and dilemmas can be analyzed using the toolbox of the undergraduate level micro courses.

The scope of the course is both theoretical and empirical, and closely related to practical problems in health care production, administration and social insurance. The course therefore provides the student with a good foundation for administrative and analytical positions in various organizations in the health care sector.

In short, the course provides a thorough overview of health care systems and peculiarities of the Danish Health Care sector, understanding “health” and aging as economic concepts combined with empirical insights, fetal origins hypotheses, issues of asymmetric information in health insurance markets combined with heterogeneity in risk and preferences for insurance, medical insurance and health care use, health care providers and their incentives, and pharmaceutical markets.

Moreover, the course presents and discusses ideas of how state-of-the-art research handles identification issues in empirical health economic work.

Learning Outcome

After completing the course, the student should be able to:

Knowledge

- Explain, discuss and criticize central health economic concepts and theories related to health behaviors of patients and professionals
• Being able to account for traits of Beveridge, Bismarkian and US health care systems, identify determinants of variation in health care expenditure and relate them to outcomes
• Reflect on the identification issues in health econometric applications
• Identify health economic trade-offs in the health care sector in Denmark and internationally
• Discuss health economic issues in a fairly clear and organized way and relate it to empirical findings

Skills

• being able to understand and extract relevant information from scientific papers in applied health economics
• being able to analyze specific health economic issues, from the perspective of an economic model

Competencies

• Launch economic concepts into policy recommendation in the health care sector
• Develop research designs in health economic applications
• Connect, combine or adapt general ideas and concepts to specific health economic problems under consideration

At the end of the course, the student will be able to analyze specific health economic issues, from the perspective of an economic model. For successful completion of the course, the student demonstrates a reasonable (textbook) insight into the underlying economic issues in the health care sector, is able to draw on basic modeling frameworks in analyzing such problems, and presents a discussion of these issues in a fairly clear and organized way and relate it to empirical findings and identification. The very good student demonstrates a deep understanding of the theoretical and empirical models presented in the research articles of the course, and is able to connect, combine or adapt general ideas and concepts to specific health economic problems under consideration.

Teaching and learning methods

The lectures take an “active learning” approach in which students engage in activities during the lectures. The purpose is to let the students reflect actively on the issues under consideration at the given lecture.
Therefore, the lectures not only consist of classic lecturing, but also a lot of the time at lectures are
dedicated to short student presentations and discussions, quizzes, padlet exercises, short written assignments and small group work that force the students to actively engage in the lectures. Many of these activities are based on online tools provided by padlet.com, socrative.com and absalon. Many activities result in written work that aligns with the final assessment (three hour closed book written exam).

**Academic qualifications**

BA in Economics or similar.

**Language:** English
Content

The course work aims to give the students basic IT-knowledge on the background of tasks related to both public and business organizations where ICT play a strategic role. Cornerstones are efficient database handling and efficient data processing in spreadsheets.

In the course we practice development of various software applications on the computer as well as providing a general system understanding that will facilitate communication with IT-specialists. E.g. the student should be capable of developing smaller applications for spreadsheets, and also for instance be able to provide a clear specification for an IT-specialist to develop a database based web application.

Among the course subjects are:

- Creating macros and functions in spreadsheets and in this way improving efficiency and reducing errors (for example programming macros for Excel).
- Design and use of Graphical User Interfaces (GUI). GUI permeates most personal computer and web applications today and knowledge about the idea and approaches to designing and using is essential in present-day IT.
- Use and solution integration of databases (for example extracting stock data to aggregate statistics)
- Client and server based web technologies (example: through the web providing the customer with database information such as it is done by web banking and public sector tax information)
- Communication technologies
- Definition of business scopes and specification of system requirements
- Algorithmic solutions are based on VBA (Visual Basic for Applications), primarily connected to enhancing and customizing Excel with macros and functions. Database queries are defined using SQL. Various tools, such as HTML, Scripts, c#, XML for web-site design are studied. Hands-on guidance will be provided as needed during the course.

The selected tools can be used on the student’s own computer, or on computers in the student user rooms.

Learning Outcome
The objective of the ICT-Applied course is to provide students with a broad knowledge of Information and Communications Technology, as it relates to working as an economist, and to an understanding of today’s business processes and strategy. This will enhance the student’s job opportunities in both the public and the private sector.

The specific objectives, i.e. the learning outcomes, are as follows.

Knowledge:

- Explain the correlation between spreadsheets, programming languages, application generators and databases
- Explain the principles of relational databases
- Explain the basic technologies behind the World Wide Web
- Explain the SQL language and its applications
- Explain the principles behind Object Oriented Programming
- Explain where the studied technologies are positioned in the general system development process

Skills:

- Record and edit macros in spreadsheets like Excel
- Write tailored software for spreadsheets in a proper programming language
- Design, develop and test Windows applications based on simple algorithms
- Use SQL for complex database queries with logical expressions and subqueries
- Assist in planning, designing, creating and implementing the algorithmic part of a Web site

Competencies:

- Use pc as development tool for administrative and analytical solutions
- Communicate with IT-specialists
- Contribute as member of IT project group

Teaching and learning methods

The teaching comprises lectures, hands-on guidance, assignments and tasks. Normally assignments and tasks can be solved using the student’s own pc, provided Windows and Office are installed. The utilized web-development software is provided for installation on the student’s computer. Group work
recommended.

Academic qualifications

None, or elementary knowledge of information technology and computer use. Because of content overlap students who have taken any of the courses Datamatik 1 or Datamatik 2 cannot participate in the course.

Exam registration requirements: Running approval of mandatory papers.

Language: English
6.5.41 AØKA08020U Industrial Organization

Content

This course is an introduction to modern industrial organization based on game-theoretic analysis. Industrial organization is the study of how (product) markets work and how firms compete, in particular when there are a limited number of firms in the market. It addresses questions such as how firms acquire and use market power, and how firms interact strategically. Insights from industrial organization has implications for competition policy. For example, should competition authorities try to block mergers? Should they try to prevent firms from colluding? If so, how can they best do that?

The course covers the basic theory of industrial organization (with only a quick look at empirical methods). In particular, the following areas are discussed (but, due to time constraints, possibly not all of these in any given year):

- Monopoly
- Static oligopoly theory with a homogeneous good (Bertrand, Cournot, Edgeworth, Kreps-Scheinkman).
- Repeated oligopoly interaction and tacit collusion (including, inter alia, the Rotemberg-Saloner and Green-Porter models). Factors that hinder and facilitate collusion.
- Price discrimination (behavior-based price discrimination, static 3rd degree price discrimination, welfare effects).
- Vertical control (double marginalization).
- Empirical tests of oligopoly (Bresnahan-Lau).
- Product differentiation (Hotelling).
- Limit pricing and predation (Milgrom-Roberts).
- Markets with network goods.
- Advertising
- Strategic incentives.

Learning Outcome

After completing the course, the student should be able to:
Knowledge:

- Describe and explain main methodologies, concepts and issues used in the theory of industrial organization.
- Understand the logic behind the results of the formal models studied in the course.

Skills:

- Select relevant theories and methods for analyzing questions related to industrial organization.
- Solve formal models using tools from mathematical optimization theory and game theory.
- Analyze formal models that are variations of the models and theories covered in the course and to provide economic intuition for the results obtained.

Competences:

- Critically think about and discuss competition policy questions, in light of the theories learned in the course.

Teaching and learning methods: Lectures and exercise classes

Academic qualifications: The students must have passed Micro I and Micro II or equivalent. Moreover, a large part of the course consists of analyses of formal economic models. Therefore, a proficiency in solving game-theoretic models, at the level of the Micro III (C) course, is required. It is acceptable to acquire that proficiency in parallel with following the Industrial Organization course (e.g., by also following Micro III (C)). But knowing and understanding game theory is essential.

Exam registration requirements: None

Sprog: English
6.5.42 AØKA08021U International Economics

Content
The course studies causes and consequences of international trade. We seek to answer questions such as: Why do countries trade? What do they trade? Who gains and who loses from trade? What is the impact of trade policy on welfare? The course also considers aspects of the globalization debate: Is wage inequality affected? What are the implications of multinationals and outsourcing? Within the topic of international monetary economics the course covers theories of optimum currency areas.

Learning Outcome
The purpose of the course is to give an introduction to traditional and new trade theories and selected topics in international monetary economics. The aim is that the students, after participating in the course International Economics, will be able to:

Knowledge:

- understand and describe why international trade arise
- understand and describe trade patterns under perfect and imperfect competition
- understand and describe the extent to which there are welfare gains from trade
- understand and describe the theory of optimum currency areas

Skills:

- analyze and calculate how trade affects behavior of firms and consumers and how trade affects welfare
- analyze and calculate how trade policy affects firm behavior and analyze and calculate welfare implications of trade policy

Competences:

- understand and describe aspects of the globalization debate such as the impact of globalization on
wage inequality, the role of multinational corporations, and labor market consequences of outsourcing

- describe and analyze in a clear and correct written language

**Teaching and learning methods**

Lectures. The students will write one term paper.

**Academic qualifications**

Basic micro- and macro theory of the first two years. Knowledge of basic Ordinary Least Squares (OLS) regressions.

**Exam registration requirements:** Students have to write a short term paper to sign up for the exam.

**Sprog:** English
6.5.43  AØKA08065U Labour Economics

Content

The course in labor economics is supposed to enable students to read and understand current and previous research in labor economics, discuss policy proposals from the perspective labor economics and reflect critically on new theories and empirical evidence.

The course covers the following topics:

- Labor supply and demand
- Education and human capital
- Wage formation
- Job search, unemployment and job reallocation
- Bargaining and minimum wages
- Active labor market policies
- Flexicurity and employment protection

Learning Outcome

After completing the course, the student should be able to:

Knowledge:

Describe the following theories and concepts:

- The neoclassical theory of labor supply both in a static and dynamic setting
- The neoclassical theory of labor demand
- General and specific human capital
- Different types of wage determination, including bargaining, compensating differentials and contract theory
- Local labor markets
- Search and matching models of the labor market
**Skills:**

Evaluate differences and similarities between the theories and concepts listed above

**Competences:**

Apply the concepts and theories listed above in the analysis of concrete empirical phenomena and policy proposals:

- Apply and extend theoretical labor market models with the view to understanding real world issues.
- Construct and defend arguments on issues related to labor economics.
- Assess an empirical research design and how to develop arguments supporting or criticizing the empirical strategy.

**Teaching and learning methods**

Lectures and in-class discussion

**Academic qualifications**

Pre-requisites are the bachelor-level micro, macro and econometrics courses.

**Exam registration requirements:** None

**Sprog:** English
6.5.44 AØKA08189U Lineære modeller

Kursusindhold

Faget Lineær Modeller har til formål at give de studerende en dybtgående forståelse af en række avancerede begreber fra den klassiske lineære algebra og den moderne funktionalanalyse, som de kan benytte inden for økonomisk teori både på bachelorstudiet og på kandidatstudiet. Undervisningen bygger direkte på de matematiske emner, som de studerende har opnået kendskab til i kurserne Matematik A og Matematik B.

Det forventes, at de studerende opnår et sikkert kendskab til faget og dets metode, og at de kan gennemføre en sikker og stringent fremstilling i form af løsning af både konkrete og abstrakte skriftlige opgaver, der også fordrer et klart, stort og tværdisciplinært overblik, inden for fagets centrale emner.

Målbeskrivelser

Den studerende har ved afsluttet kursusforløb opnået viden om

- Lineær uafhængighed, basis og dimension af underrum.
- Lineære afbildninger.
- Komplekse tal.
- Komplekse matricer.
- Diagonalisering af matricer.
- Abstrakte vektorrum.
- Funktionskalkulen.
- Metriske rum.
- Konvergens af funktionsfølger.
- Banachrum og Hilbertrum.
- Svag og stærk konvergens.
- De to sidste emner er eksempler på videregående valgfri forløb
færdigheder i at løse problemer inden for emnerne:

- Lineær uafhængighed, basis og dimension af underrum.
- Lineære afbildninger.
- Komplekse tal.
- Komplekse matricer.
- Diagonalisering af matricer.
- Abstrakte vektorrum.
- Funktionskalkulen.
- Metriske rum.
- Konvergens af funktionsfølger.
- Banachrum og Hilbertrum (Eksempelvis)
- Svag og stærk konvergens. (Eksempelvis)

kompetencer til at anvende nedstående emnerne relevante sammenhænge med andre fag på økonomistudiet:

- Lineær uafhængighed, basis og dimension af underrum.
- Lineære afbildninger.
- Komplekse tal.
- Komplekse matricer.
- Diagonalisering af matricer.
- Abstrakte vektorrum.
- Funktionskalkulen.
- Metriske rum.
- Konvergens af funktionsfølger.
- Banachrum og Hilbertrum (Eksempelvis)
- Svag og stærk konvergens. (Eksempelvis)

Undervisningsform: Forelæsninger og holdundervisning. Regneøvelserne på holdet omfatter gruppearbejde i forbindelse med opgaver og fremlæggelse af skriftlige opgaver
Anbefalede forudsætninger: De studerende forventes at have faglige forudsætninger svarende til Matematik A og Matematik B.

Formelle krav: Den studerende skal have godkendt 4 obligatoriske opgavesæt for at kunne blive indstillet til eksamen.

På sommerskolen er der mødepligt og krav om aktiv deltagelse til alle dele af sommerskolen.

Sprog: Dansk
Content

Financial and non-financial data are a very important basis for evaluation of profits of different segments as well as evaluating and managing the efficiency of departments, people and processes in the organization. But it is also important as a basis for pricing decisions and planning purposes. The course put focus on how to capture financial and non-financial data as well as organize and use them for decision making, planning and control.

The course contains the following core elements:

- Job costing systems & process-costing systems
- Revenue and Cost terms and behaviour
- Profitability analysis on products, customers and other segments
- Pricing decisions and target costing
- Budgetary systems
- Standard Cost Control
- Performance measurement and management systems
- Control systems and transfer pricing

Learning Outcome

After completing the course, the student should be able to:

Knowledge:

- Develop a fundamental knowledge of financial management of a company.
- Understand the purpose and content of different cost and management accounting models, techniques and systems.

Skills:

- Design, implement and use different conventional as well as modern cost and management accounting models, techniques and systems for analysis, decision making and control purposes.
Competencies:

- Analyse and evaluate the strengths and weaknesses of each model, technique and system used for different tasks and apply the different models and tools in different companies.

Teaching and learning methods

Research and theory based dialog lectures are mixed with exercises and cases. The lectures provide the students with the necessary understanding of purpose and content of the techniques and what type of theory they are based on. Through the use of examples and cases from practice the students learn to apply theory and techniques for analysis, decision making and control purposes in practice.

Academic qualifications

The course requires knowledge of micro economics as included in Micro I and Micro II.

Exam registration requirements: None

Language: English
Content

Making the students familiar with the modern marketing “mind set” and basic marketing concepts, mechanisms and instruments based on a Marketing audit including Porters value Chain, The BCG matrix, customer and competitor analysis, Porters Five Forces, PESTEL analysis and SWOT.

Strategies for growth, generic value strategies, the STP model and the DAGMAR model for selecting and setting up marketing objectives will be introduced and discussed in combination with the SMART model for useful objectives, that can be monitored and evaluated.

The marketing mix, the 7 P’s (product, price, place, promotion, people, physical evidence and processes) will be defined, analyzed and exemplified with special focus on 1) the product parameter, generating value for customers better than competitors and 2) the promotion parameter and planning for integrated marketing communication activities off- and online.

Learning Outcome

After completing the course, the student should be able to:

Knowledge:

- understand and discuss the general marketing concept of being able to deliver value to the predefined customers/targetgroups
- define and discuss the micro, meso and macro environments around a brand/company
- identify and discuss relevant future marketing activities and objectives following the tools and structure in the marketing mix model

Skills:

- manage the topics, methods, tools and theories learned during the course.
- analyze and assess external market opportunities and threats,
internal company strengths and weaknesses

- set up and argue for objectives and a structured plan for strategic and
tactic marketing activities, including estimates of ROI

**Competencies:**

- bring into play the achieved knowledge and skills in new contexts,
- take responsibility of and organize the process of marketing
  audit and marketing planning
- analyze, interpret and discuss markets, trends, target groups and marketing activities in general

**Teaching and learning methods**

Lectures covering theories, concepts and related examples from real life and with inspiring
contributions/examples from the students in every lecture.

**Academic qualifications**

General analytical skills and understanding of potential cause and effects in a rapid changing world where
nothing is equal.

**Exam registration requirements:** Compulsory report on max. 8 pages (to be passed) covering 1) a
Marketing audit and 2) recommendation for a marketing strategy for an individual selected
brand/service/event

**Language:** English
6.5.47  AØKK08201U Mechanism design

Content

This is a mathematically oriented course.

Mechanism design deals with institutions in environments with asymmetric information. While most of economics deals with the question how players act within a given environment, mechanism design asks: What kind of environment should a "designer" create if he wants to achieve a certain goal and which goals can realistically be achieved? For example: How should a government that is concerned about its citizens welfare design the tax schedule? How should a welfare maximizing planner organize a market? How to organize a revenue maximizing auction?

Mechanism design is, therefore, an approach that can be used and has been used in many subfields of economics.

You can find a more thorough description of mechanism design on:

http://www.tseconomist.com/1/post/2013/01/-mechanism-design-theory-takuro-yamashita.html

Depending on time and interest the course will have 2 or 3 parts.

The first part (based on chapter 23 in MasColell/Whinston/Greene) introduces the students to the classic results and methods of mechanism design: dominant strategy mechanism design (revelation mechanism, Gibbard-Satterthwaite theorem and the Groves-Clarke mechanism). We show that the designer can only achieve his objectives with the Groves-Clarke mechanism if he is willing to waste money. As this is not efficient, we turn from dominant strategy to Bayesian mechanism design and cover the expected externality mechanism, Bayesian incentive compatibility and establish the famous Myerson-Satterthwaite theorem which implies that fully efficient mechanisms do not exist in many economically relevant settings. This naturally leads to the question which mechanism is most efficient. We study this question of optimal Bayesian mechanisms in several settings including bargaining, pricing, regulation and auctions.

The second part applies and extends the concepts of the first part. The material is based mainly on published papers and small excerpts from other textbooks. We analyze how optimal mechanisms are affected if the setup differs from the classical mechanism design setup, e.g. agents exert externalities on
each other (e.g. if Pakistan sells nuclear weapons to North Korea, US security is affected), agents’ information is correlated (e.g. if a government sells drilling rights either all companies will value the right highly if there is a lot of oil and not so highly if there is none) and discuss “robust mechanism design” (what can we achieve if we cannot predict the beliefs of players?) and its applications.

If time permits, the course will have a third part. There are two possible topics for this part: Either using the mechanism design approach to analyze the question of efficient property rights and ownership. Alternatively, we go through recent, applied work of economists on so called matching markets (Gale-Shapley algorithm and top trading cycle algorithm) which deals with questions like matching students to schools/universities.

The content is subject to minor changes.

**Learning Outcome**

At the end of this course, students can apply the classical tools of mechanism design and should be able to:

**Knowledge:**

- know the material covered in the course; in particular knowledge of the logic behind the revelation principle, the Clarke-Groves mechanism, the expected externality mechanism, the monotonicity condition, the Myerson-Satterthwaite theorem, the Cremer-McLean mechanism and the agenda of robust mechanism design.

**Skill:**

- analyze a given mechanism, find and illustrate its weaknesses and suggest alternatives based on the material treated in the course;
- read, summarize, compare and comment on research papers that use the techniques covered in the course.

**Competence:**

- explain the advantages and disadvantages of dominant vs. Bayesian mechanism design and the limitations to both approaches;
• relate the different concepts and ideas covered in the course;
• analyze new economic problems with mechanism design tools.

Mathematical superpower:

• apply the envelope theorem and the skill to derive optimal Bayesian mechanisms in well behaved settings and apply matching algorithms to fully specified problems.

Teaching and learning outcomes: Lectures

Academic qualifications: It is strongly recommended that Micro III has been followed prior to taking Mechanism Design. Mastering the material from the mathematics courses in the Bachelor program is very helpful.

Exam registration requirements: In order to be allowed to take the exam, students have to pass a midterm assignment which is also a one week take home assignment.

Language: English
Content

The aim of this macroeconomic course is to offer an understanding of several aspects of money and the macroeconomy, thereby providing insights into how and why monetary phenomena and monetary policy affect important macroeconomic aggregates such as output, consumption, inflation and unemployment. Moreover, focus will be on the characteristics of “good” monetary policymaking in the sense of assessing the advantages and disadvantages of various monetary policy strategies.

To secure a firm foundation for the aspects covered, emphasis will be on rigorously formulated theoretical models. Economic intuition, however, is just as important as mathematical formalism. The curriculum will be mainly theoretical, but the empirical relevance of the material will not be underplayed.

Learning Outcome

The student should have attained learning outcomes in the following three dimensions after having completed the course:

Knowledge:

- The student should understand the theories covered in the course both mathematically and intuitively.

Skills:

- The knowledge should be applied independently such that the student can analyze real-life occurrences pertaining to monetary policy issues in later employment in either public or private institutions.

Competencies:

- Through the acquired knowledge and skills, students will be equipped with abilities that enables them to approach more advanced material within monetary policy and related disciplines.

Teaching and learning methods: Some lectures will be substituted with a run through of relevant exercises
**Academic qualifications:** As some of the material requires a thorough understanding of macroeconomic general equilibrium models, it is a prerequisite to master economic theory at a level corresponding to David Romer: Advanced Macroeconomics, McGraw-Hill (4th edition currently used in Macroeconomics III). In particular, the chapter on the Ramsey model should be well known. One should therefore be familiar with basic intertemporal optimization, and analyses of static and dynamic systems with rational expectations. Most importantly, one should not be afraid of mathematical rigor. At the end of the day, this is what serves to foster conclusions and policy implications that are internally consistent, and not merely based on “common sense” and/or personal judgements and opinions. Mathematics is just a tool, but a very helpful one for structuring your thoughts and discussions. But never forget: Economics is the central matter.

Since registration for courses is now binding, it is important to know what you sign up for. In that respect, you are lucky with this course. Websites from previous versions of the course (with full access to slides, exercises, notes, etc.) are public.

The 2016 version is here:


The pages have links to earlier versions of the course dating back to 2002. So you will be able to see hands on what you sign up for.

**Exam registration requirements:** None

**Language:** English
Kursusindhold
Kursets første halvdel omhandler faktoranalysemodeller og lisrelmodeller i flerdimensionale datamaterialer, hvor afhængigheden mellem kontinuerte variable beskrives ved deres kovarians/korrelation. Det teoretiske grundlag for kursets anden halvdel er de log-lineære modeller, ved hjælp af hvilke man kan gennemføre en samlet beskrivelse af samvariationen eller afhængighederne mellem flere diskrete variable. Teorien for de log-lineære modeller for tabeller af højere dimension gennemgås med hovedvægten lagt på modeludvælgelse og fortolkning af den model, der udvælges til beskrivelse af materialet.

Som en introduktion gives en kort repetition af de vigtigste matrixoperationer, herunder dekomponering i egenværdier og egenvektorer, herunder også brug af SAS. Herefter gennemgås i første halvdel af kurset de grundlæggende modeller for multivariat analyse: Faktoranalyse, herunder principalkomponentmetoden, og LISREL-modeller (Structural Equation Modelling). I disse modeller indgår de variable på lige fod og ikke i form af responsvariable og forklarende variable som i regressionsmodeller.

For diskrete variable analyseres i kursets anden halvdel større datasæt med flere kategoriserede variable, der ligeledes indgår simultant på lige fod i modellen. Det skal ses som en modsætning til fx logistiske regressionsmodeller, hvori visse variable er responsvariable (altså specielt interessante), mens andre er forklarende variable.

Som en introduktion til modellerne for sådanne kategoriserede variable tales om likelihoodteori og eksponentielle familier, der anvendes for de log-lineære modeller, der anvendes i analyserne. Alle de praktiske analyser i kurset afvikles ved brug af SAS.

Målbeskrivelser
Efter kursets afslutning skal den studerende

Viden:

- have kendskab til teorien for faktoranalysemodeller og lisrelmodeller for korrelationsstrukturer og
log-lineære modeller for kategoriserede data

- have kendskab til formålet med analyser med disse modeller
- have kendskab til SAS-procedurerne til estimation af for disse modeller

Færdigheder:

- evne til at læse videnskabelig litteratur om teorien for disse emner
- evne til at læse videnskabelig litteratur, der anvender modeller for disse datatyper
- have erhvervet et tilstrækkeligt kendskab til den praktiske analyse ved hjælp af modellerne, så den studerende efter kurset kan samarbejde med andre faggrupper, herunder statistikere, om udarbejdelsen modeller for data
- evne til selv at analysere data ved hjælp af modellerne og at relatere resultaterne til den virkelighed data stammer fra.

Kompetencer:

- kunne udføre analyser på korrelationsdata og kategoriserede data, så mest muligt informationen i data bringes frem i lyset og fortolke disse resultater i forhold til emnefeltet

Undervisningsform

Forelæsningerne gennemføres ved tavlegennemgang af teorien samt hyppig brug af online gennemgang af SAS-programmer. Desuden regnes opgaver, herunder også praktisk dataanalyse med SAS, som en del af forelæsningerne. Der er to obligatoriske hjemmeopgaver, der rettes, for at sikre feedback.

Anbefalede faglige forudsætninger

Kurset forudsætter viden svarende til faget 'Sandsynlighedsregning og Statistik' og, som minimum
sideløbende, faget Økonometri I. For udefra kommende forudsættes et matematisk orienteret statistikkursus. Forhåndskendskab til programpakken SAS er ikke nødvendigt.

**Formelle krav:** For at den studerende kan indstilles til eksamen skal to obligatoriske opgaver være afleveret og godkendt.

**Sprog:** Dansk
**Indhold:** Formålet med faget er at indføre de studerende i både de retlige rammer om den danske offentlige forvaltning (statsret/forvaltningsret) og i, hvorledes forvaltningen fungerer i praksis (forvaltningslære/forvaltningspolitik). Fokus er såvel på de formelle og normative strukturer som på forvaltningens faktiske opbygning (organisation) og arbejdsformer (funktion). En gennemgående interesse knytter sig til samspil og sammenhænge mellem politik og forvaltning. Faget har grænseflader til en række fag som b.l.a. politologi, jura, organisationsteori, økonomi, sociologi, historie.

I lyset af den tiltagen integration mellem national og international forvaltning og politik inddrages komparative forvaltningsaspekter, herunder relationer til EU og EU-forvaltning samt glimt af kontrasterende forhold i andre lande.

De retlige rammer omfatter de forfatningsretlige institutioners organisation, funktion og især deres indbyrdes relationer, herunder vælgerne, politiske partier, Folketinget, regeringen, regenten, forvaltningen, domstolene samt internationale organisationer som EU. Gennemgangen af samspillet mellem statsorganer (Folketing, domstole, regering) omfatter bl.a. magtfordelings-/magtbalancelæren, lovgivningsprocessen etc.

Forvaltningsretten gælder både den statslige og den kommunale forvaltning. Reglerne for forvaltningsens aktivitet (Sagsbehandling, serviceudøvelse, forberedelse af politisk beslutningstagen) gennemgås herunder regler om kompetence, hjemmel, habilitet, offentlighed, høring og begrundelse, konsekvenser af fejl i sagsbehandling samt forskellige former for kontrol med forvaltningen. Eksempler på forholdet til EU-ret berøres.

Forvaltningens praksis omfatter empirisk kundskab om offentlig forvaltning, men samtidig et kendskab til de videnskabelige discipliner, som over tid har præget forvaltningsudviklingen (forvaltningslære/administrative science). Med det udgangspunkt gennemgås teoretiske hovedtræk omkring politisk-administrative beslutningsprocesser; rationalitet og effektivitet; magt og styring; arbejdsselv og koordination; skiftende paradigmer (systemteori, public choice, ny-institutionalisme, diskursteori etc.).

Empirisk fokuseres på de politiske relationer mellem de øverste statsorganer, den offentlige forvaltnings organisatoriske struktur, dekoncentration - decentralisering, styringsmidler, planlægning, bevillings- og budgetsystem, offentlig virksomhedsdrift; kontrollen med den offentlige forvaltning, den administrative
beslutningsproces, informations- og kommunikationssystemer; det administrative personale; forvaltningskultur; forholdet mellem embedsmænd og politikere. - Tilsvarende berøres den regionale og kommunale forvaltnings særlige træk og funktionsformer, herunder kommunalreformer samt grænseflader og nye udviklingstendenser i forholdet mellem politikere, embedsmænd og borgerne.

Målbeskrivelse:

Efter kursets afslutning skal den studerende have:

Viden

- Have indgående empirisk kendskab til den offentlige forvaltnings rammer, strukturer og funktioner samt rolle i samfundet
- Have forståelse for samspillet mellem de retlige hhv. politiske krav, som den offentlige forvaltning er underlagt
- Have indsigt i de grundlæggende teoretiske/principielle forudsætninger, som danner udgangspunkt for de statsbærende institutioner og offentlig forvaltning i bred betydning og for deres virkemåde

Færdigheder

- Beskrive hovedelementerne i gældende dansk statsforfatningsret og forvaltningsret (grundlov, forvaltningslov, offentlighedslov) samt principperne for forholdet mellem dansk (offentlig) ret og EU-retten
- Kende offentligretlige grundbegreber som den retlige trinfolge, magtadskillelses- og magtfordelingslære, kompetence, skrevne/uskrevne retskilder, officialprincippet, kommunalfuldmagten, partsbegrebet, habilitet, begrundelse, retlig prøvelse etc.
- Beskrive den danske offentlige forvaltnings grundlæggende udformning, placering og rolle i det danske politiske system, herunder de principper, der driver udviklingen i centralforvaltningen, det danske kommunale system, mål- og rammestyring, borger-/brugerinddragelse i forvaltning etc. såvel som udviklingen i samspillet mellem dansk forvaltning og international forvaltning
- Redegøre for centrale elementer i de væsentligste teorier/skoler indenfor det forvaltningsfaglige område, herunder politisk-administrative beslutningsprocesser; rationalitet og effektivitet; magt og
styring; arbejdsdeling og koordination samt skiftende forvaltningsparadigmer som f.x. systemteori, magtteori, new public, public-choice, ny-institutionalisme, diskurs- og netværksteori.

Kompetence

- Kunne anvende gældende dansk ret (de centrale offentligretlige begreber og metodik) i en juridisk analyse af eksempler på faktiske sociale begivenheder (faktum), som repræsenterer en retlig problematisk situation, og herudfra vurdere de retlige konsekvenser samt angive begrundede forslag til løsning af det/de retlige problemer.
- Kunne analysere forskellige typer af administrative/forvaltningspolitiske problemstillinger i lyset af én eller flere af de gennemgåede teorier/skoler - gennem opstilling af problemformulering, udkast til hypotese(r), formulering af arbejsspørgsmål og valg af metodik - svarende til løsning af en selvvalgt semesteropgave og/eller et speciale.

Undervisningsform: Forelæsninger - suppleret med ad hoc øvelser og deltageropgave

Anbefalede forudsætninger: Ingen

Formelle krav: Ingen.
Incentives and Organizations

Content

Why do firms and other types of organizations exist? Which factors determine whether they succeed in achieving efficient levels of cooperation and coordination amongst their members? How does individual behavior and organizational performance depend on compensation structures and the allocation of tasks and responsibilities within an organization? How do coworker relationships, employees’ work morale, and the perceived fairness of one’s pay influence workplace behavior?

During the past decades, research in economics has made great progress in answering such questions by opening the “black box” of what happens within firms and other organizations. In this course, students will be introduced to the key theoretical concepts and empirical approaches that help understand the existence, design, and performance of organizations. The main part of the course will focus on the question how economic methods can be used to understand the relationship between incentives, organizational structure, and the performance of organizations. In particular, we will discuss (i) how incentives shape individual motivation and behavior, and (ii) how incentives as well as other organizational features (e.g., hierarchies, teams, authority, and delegation) affect collective behavior and organizational performance.

Learning Outcome

After having successfully completed the course, students should be able to

Knowledge:

- understand central theoretical insights and state-of-the-art empirical research in organizational economics.
- understand how economic theory, “insider econometrics”, lab and field experiments, and other complementary empirical methods can be used to address applied microeconomic questions.

Skills:

- interpret and critically assess theoretical and empirical studies on incentive provision and behavior in organizations.
- put the results of these studies into perspective and identify limitations of the existing body of
knowledge.

**Competencies:**

- apply the acquired knowledge and skills to practical questions related to incentive provision in organizations.
- The course also equips the students with the necessary tools and skills to continue working on related topics in seminars or Master’s theses.

**Teaching and learning methods**

Lectures will be supplemented with a number of guided practice sessions in which we will discuss problem sets and homework assignments. Student participation and an active discussion in class will be expected and encouraged.

**Academic qualifications**

A sound knowledge of microeconomic theory as well as a sound understanding of econometric techniques are required.

Although it is recommended that students have completed the full course sequences in microeconomics and econometrics, the course can also be attended in parallel to Microeconomics III.

**Exam registration requirements:** None

**Sprog:** English
Content

The study of organization and organizing becomes increasingly relevant as the organizational world today is characterized by many and profound changes caused by new technology, globalization, increased competition and new ideas about management. Such changes call for more flexible organizational designs, new managerial strategies and new ways of defining, monitoring and assessing the performance of the organization. The course focuses on work organizations, both business organizations (private firms) and organizations within the public sector. Organization theory is an interdisciplinary field and the course draws on perspectives from different social science disciplines. Both, the so-called rational and natural theories are covered in the course and a number of perspectives, from the more classical such as Scientific Management and Human Relations to more recent approaches such as Open Systems and Chaordic Systems are discussed. Other views such as Social Constructionism, Psychodynamics and the Requisite Organization are also explored. Various aspects of organizations such as structure, processes and culture are covered.

A central theme of the course is organizational structure, in other words, how work in an organization is divided into jobs, departments and hierarchical levels and how coordinated effort is achieved. A number of structural forms are discussed as well as how in particular, organizational strategy, size, technology and environment influence the structure of an organization. A special theme concerns the choice between market and hierarchy in coordination of economic activity. This leads to a discussion of mergers and acquisitions, outsourcing, virtual organization and hybrids between market and hierarchy such as strategic alliances and networks. Informal structure and group dynamics are also touched upon together with organizational culture comprising the values and basic assumptions of organizational members. Other themes concern organizational processes where decisions, power, leadership and motivation are the most important. Both rational, bounded rational, political and anarchic decision models are presented and power processes in organizations are discussed. Perspectives on leadership are outlined and leadership behavior and styles, value based leadership and contingency theories on leadership and change management are covered. Motivation and incentives in organizations are also essential themes where the relative significance of economic and non-economic motivations in particular is discussed. Both classical motivation theories and later content and process theories are part of the course as are the concept and function of performance related pay.
In essence, a number of ways of thinking are presented in the course which should enable the economist to think and reflect in a more professional way about the organizational contexts in which she/he will make a career. Organization theory has broad practical and vocational relevance, both for students aspiring for managerial and administrative positions in existing organizations as well as for those interested in starting their own venture.

Learning Outcome
After completing the course, the student should be able to demonstrate the following under the three sections of knowledge, skills and competencies:

Knowledge:
- Describe the basic principles of classical and contemporary organizational theories about structure, strategy, culture, leadership, groups, change, communication, power, decisions and motivation.
- Explain the differences and similarities between economic perspectives on organizations and perspectives from other social science disciplines.

Skills:
- Select, justify and evaluate the applicability of these theories in real life organizational contexts.
- Analyze and compare the theories, their strengths and weaknesses with regard to obtaining an understanding of actual organizations and practical organizational phenomena.

Competencies:
- Apply relevant theory in analysis of organizational issues described in a real-life case in a written essay in a clear and coherent way.
- Formulate and structure analytical solutions to real life organizational problems by integrating theory with case data.

Teaching and learning methods
The sessions will involve short lectures and discussions based on course theory and analysis and mapping of the problems and possible solutions of the real-life cases that are a part of the course syllabus. The sessions will also involve group work where the class will work in small groups on solving the questions presented
on the case studies.

**Academic qualifications:** None. Organization theory has interfaces with other areas such as public administration, strategic management and corporate governance.

**Language:** English
The course provides a broad overview of modern political economics. It deals with the interaction of politics and economics, using formal models to understand the implications for economic policy of various political settings and institutions. The course relates the theoretical predictions to real world examples and systematic empirical findings.

The course covers the following topics:

- Electoral competition and voter behavior
- Partisan politics and political agency
- Redistributive aspects of politics
- Legislative bargaining
- Impact of different political institutions on economic policy
- Sources of differences in political preferences
- Politics and the media
- Money and political influence
- Violence and political conflict

Learning Outcome

After completing the course, the student:

Knowledge:

- must have acquired knowledge about the basic and more advanced theoretical models of different aspects of political-economic process as well as methods and results of empirical assessment of these models.
- must have acquired knowledge about the tools of modeling as well as empirical methods and results within the topics listed under the course content above.
Skills:

- should be able to apply methods and results from the list of topics above, to analyze variations and extensions of these and closely related topics within political economics.
- should be able to critically discuss the underlying assumptions and methods within these topics and their impact on the analytical results.

Competencies:

- should be able to discuss the topics of the course within both a national and international practical and empirical context at the level corresponding to that presented in class.

Teaching and learning methods

The course consists of 2 hours of classes (lectures) every week and 2x2 hours every second week for 14 weeks.

Academic qualifications

Public Finance introduces some of the topics covered in the course, but is not a prerequisite. Some familiarity with basic game theoretical concepts (e.g. Nash equilibrium, subgame perfect equilibrium) and econometric techniques (e.g. OLS regression, IV estimation) is required. More advanced econometric techniques are introduced during the course but familiarity with these is not a prerequisite.

Exam registration requirements: To register for the exam, each students must i) present a paper from the course reading list in front of the class; and ii) discuss a paper presented by other student. Presentations and discussions are done in groups of students, and each student must be in a presenting group and a discussion group at least once.

Language: English
Kursusindhold

1) Håndtering af tidsrækker i SAS ved brug af datovariable, aggregering og interpolation.

2) Forudsigelser ved hjælp af exponential smoothing og tilsvarende metoder

3) Sæsonkorrektion

4) Intuitive tidsrække modeller ved hjælp Unobserved Components

I kurset læres, hvorledes disse analyser foretages ved hjælp af SAS.

Målbeskrivelser

Efter kursets afslutning skal den studerende

Viden:

- have kendskab til SAS's formater til datoer og tidspunkter
- evne til, at vurdere tidsrækkers struktur, fx trends og sæson
- have viden om simple tidsrække modeller med stor praktisk anvendelighed

Færdigheder:

- evne til praktisk håndtering af tidsrækkedata i SAS med henblik på at tilrettelægge data til efterfølgende statistiske og økonometriske analyser.
- have færdighed i interpolation og udfyldning af manglende observationer i tidsrækker
- kunne forudsige tidsrækker ved hjælp af de forskellige metoder eksponentiel udglatning
- kunne sæsonrense ved hjælp af X12
- kunne bestemme Unobserved Components Modeller, herunder at fremskaffe information om tidsrækkens struktur
Kompetencer:

- kunne behandle tidsrækker i SAS herunder valg af format, valg af observations og tilrettelæggelse af data med henblik på videre analyse
- kunne anvende SAS til ikke-parametrisk analyse af tidsrækkedata, især med henblik på forudsigelse og sæsonrensning
- kunne anvende SAS til hurtig bestemmelse af sæson ARIMA modeller for tidsrækkedata
- fremskaffe information om en tidsrækkes struktur ved hjælp af modeller for uobserverede komponenter


Anbefalede forudsætninger: Kurset forudsætter viden svarende til bestået 1. årsprøve og 'Sandsynlighedsegning og statistik minimum sideløbende.
For udefrakommende mindst Matematik på A niveau fra gymnasiest

Sprog: Dansk
6.5.55  AØKK08095U Pricing Financial Assets (F)

Content

The course covers valuation of financial assets and derivatives with an emphasis on arbitrage pricing and hedging. Different methods for arbitrage free pricing are introduced with the purpose of providing the student with a toolset that can be utilized most suitably for the valuation problem at hand. The theory and methods are applied to core financial derivatives which are introduced and given a rigorous definition with a further coverage of the institutional settings and conventions that has developed for such contracts and the trading thereof. Derivatives are covered in abstract generality as well as in practical implementations in the form of equity, commodity, currency, credit and interest rate derivatives.

Learning Outcome

After completing the course, the student should have acquired the following:

Knowledge:

- A knowledge of main types of financial assets and derivatives, of their definitions and of their risk characteristics as well as the institutional framework for such contracts and the trading thereof
- An understanding of the concept of arbitrage free pricing, the importance of this approach in modern financial theory, and the various methods that can be applied for such pricing
- An understanding of the core mathematical methods related to these models including selected proofs and numerical methods

Skills:

- The ability to utilize the methods of arbitrage free pricing to particular pricing and risk hedging problems and to choose the most applicable method
- The skill of applying the mathematical toolset to produce quantitative valuations and risk assessments
- The ability to understand the limitations of the pricing methods and the risk involved in the practical implementation in both pricing and risk hedging
Competences:

- The ability to extract from a complicated practical setting the relevant financial risk elements that can be analyzed and to adapt the methodology to the problem at hand
- The ability to apply arbitrage free pricing methods and risk hedging to new financial instruments, their definition and development
- To understand the limitations of different pricing and hedging methodologies and use this to modify the approach and/or make sound judgements on the direction and size of pricing errors and residual, non-hedged risks

Teaching and learning methods: Lectures

Academic requirements: The course requires certain knowledge of basic microeconomics and elementary mathematics and statistics. The course also requires the BA-course in finance, including a knowledge of financial derivatives as forwards, futures and call and put options (as they are covered in the first chapters of the main textbook that are not included in the syllabus).

Exam registration requirements: None

Sprog: English
Content

The Private Equity course is designed for students of law, economics and finance with an interest in exploring the workings of the private equity industry as well as public policy issues related to the industry. The course prepares students for future careers in the global private equity ecosystem from venture capital to buyouts, emphasizing the interconnectedness between academic disciplines (in particular law and economics) and market and regulatory practices within this field.

The course focusses on practices rather than theories, with guest lectures from the private equity industry providing different perspectives to key issues such as value creation, risk and return, the private equity cycle, alignment of interest, governance and transparency. The course guest speakers complement lectures by instructors from the Faculty of Law and the Department of Economics. Previous guest speakers have included executives from Nordea Corporate Finance, McKinsey, SEB Enskilda, The Danish SFA, Northzone Ventures, AT Kearney, EQT, Altor, Accura Law, ATP PEP, DVCA, Danske Private Equity, Acel as well as entrepreners and CEOs of various portfolio companies.

During the initial series of lectures, students will be introduced to basic concepts in corporate finance, corporate governance and contracts by the instructors to bring students from various backgrounds up to speed. In order to provide students with opportunities for simulating actual decision making processes, one class session will be conducted off campus. Previous off campus sessions have been with BCG and Kromann Reumert Law.

The course is offered in collaboration between the Department of Economics and the Faculty of Law at the University of Copenhagen as the first joint econ/law graduate course offered by the two programs. Econ and Law students access a common course site as the primary means of communication between lectures.

Learning Outcome

After completing the course, students should have acquired the following knowledge, skills and competences;

Knowledge:
- Describe and understand the private equity governance model
- Understand the purpose and processes in the private equity cycle
- Identify the key value drivers in the private equity cycle
- Appreciate the roles of the different players in the private equity ecosystem

Skills:
- Identify, process and organize relevant data for analyzing topics in private equity
- Analyze, assess and put into perspective a particular aspect of private equity as set out in the exam paper

Competences:
- Identify, process and organize relevant data for analyzing topics in private equity
- Apply the tools developed for analyzing private equity to other complex systems and governance models

Teaching and learning methods
The course will utilize a variety of teaching methods ranging from lectures on particular topics, to class discussions, simulated cases, and off campus company visits.

Students are expected to proactively participate in class discussions, to prepare for class sessions by reading the required literature and to develop questions and observations for guest speaker events.

One class session is devoted to exploring potential ideas for exam papers with each student expected to prepare a brief for class feedback. Students are required to upload a brief outline of their exam topic within the deadline provided.

Academic qualifications
Formal training at a senior bachelor level and/or master level and practical experience in corporate finance, business strategy, leadership, innovation, corporate governance and contract law would be useful.

Students should have an interest in financial markets, management, innovation, value creation, regulation and contracts seen mainly from a practical perspective.

Basic theories and concepts from finance and law will be introduced during the course to facilitate learning
for students of economics and finance as well as for law students.

**Exam registration requirements:** None

**Language:** English
Kursusindhold


Målbeskrivelser


Efter kursets afslutning skal den studerende

Viden:

- have kendskab til database strukturen i SAS.
- have kendskab til de mange muligheder for at lægge data tilrette ved hjælp af SAS
- have kendskab til SAS-procedurernes opbygning

Færdigheder:

- evne til praktisk databehandling i SAS med henblik på at tilrettelægge data til efterfølgende statistiske og økonometriske analyser.
- forstå opbygningen af ikke-trivielle SAS-programmer
- kunne anvende SAS procedurer
- fremskaffe information ud fra SAS's hjælpefaciliteter med henblik hurtigt at anvende (endog
Kompetencer:

- kunne anvende SAS til praktisk databehandling, især med henblik på at tilrettelægge data til efterfølgende statistiske og økonometriske analyser.
- hurtigt kunne fremskaffe statistiske resultater ved hjælp af de statistiske procedurer i SAS også selvom disse procedurer er ukendte

Undervisningsform

Ved forelæsningerne gennemsåes metoderne ved online SAS-sessioner. Under forelæsningerne regnes en del øvelsesopgaver, der gennemgås, hvorved der sikres feedback.

Anbefalede faglige forudsætninger

Kurset 'Sandsynlighedsregning og Statistik' (Økonometri A) og at Økonometri I (Økonometri B) mindst følges sideløbende med 'Programmering og statistik med SAS'. For deltagere fra andre studier kræves et introducerende statistikkursus. Forhåndskendskab til SAS er ikke en forudsætning.

Formelle krav: Ingen

Sprog: Dansk
Content: All through our life, we have to make decisions. Whether it is attending to the signal at a crossing, finding a spouse, or investing hard earned money, the common denominator is the choice between options of different values. How we perceive the value of an option depends on how the option is processed by our cognitive system. To understand human decision-making it is therefore crucial to understand human cognition.

Explanations and predictions of people’s choices, in everyday life as well as in the social sciences, are often founded on the assumption that humans are rational. The definition of rationality has been much debated, but there is general consensus that rational choices should satisfy some elementary requirements of consistency and coherence in the assessment of values. In this course we will study decision problems in which people systematically violate these requirements of consistency and coherency, and we trace the violations to the psychological principles that govern the perception of decision problems and the evaluation of options.

The course will provide an overview of the field by focusing on the most central topics and experiments. Some of the topics we will focus on during the course are attention limitations, anchoring, loss aversion, bounded recursive thinking, the importance of context and reference points, and mutual mental states. The impact and relevance of seminal research in each of these topics will be made clear through hands-on experimental experience.

Learning Outcome: Content level: This course aims at introducing students to the interdisciplinary field of ‘the psychology of choice’, be it dependent (strategic) or independent of others’ choices (non-strategic). This interdisciplinary field has received wide recognition in recent years, for example by the award of the Nobel Prize in Economics 2002 to the psychologist Daniel Kahneman and the economist Vernon Smith. During the course students will learn how to investigate complex human behavior by means of empirically testable hypotheses and experiments. Students should understand how psychologists and economists attempt to understand the microfoundations of human choice behavior. Furthermore, it should provide an in-depth overview of the most important seminal works in the aforementioned topics covered during the course.

Methodological level: Students should learn to critically assess and relate the diverse ideas, concepts and theories developed in psychology and economics to explain humans’choice behavior. Furthermore, they
should learn (i) how experiments are used in social sciences to investigate human choices and (ii) how to analyze and present their results in a simple / clear, but not superficial way.

**Teaching and learning methods:** Lectures

**Academic qualifications:** Sound knowledge of statistical methods and tests (Econometrics A and B, Statistik I and II, or equivalent).

**Exam registration requirements:** B.Sc. in Economics or Psychology. Participation in the demonstration experiments as well as the assignments is required for admission to the final exam

**Language:** English
Content

The course introduces students to main topics, concepts, theories, empirical methods and results in Public Finance. Public Finance deals with the role of government in the economy. It focuses on the relationship between the government and the market and tries to answer such questions as when should the government intervene, and what problems can arise due to government policy when governments operate under imperfect information and other imperfections. The course covers both positive and normative aspects of government policy regarding the expenditure side and, in particular, the financing side of the public sector. Examples of questions addressed in the course are:

- How large should governments be?
- What are the main arguments for government intervention?
- How do individuals and firms respond to government policies and why is it important?
- How can empirical methods be used to identify behavioral responses to government policy?
- What are the typical theoretical and empirical methods used in Public Finance and how are they used?
- How large are tax distortions and how are they minimized?
- How is tax distortions related to the degree of self-finance, which often appears in the public debate?
- Who bears the “true cost” of a tax?
- How is inequality measured?
- How do we compare and choose between different possible outcomes in society?
- How big is the trade-off between equality and efficiency?
- How high is the tax rate on the rich and how high should it be?
- How big a problem is tax avoidance and tax evasion and what is the optimal strategy to fight it?
- What is the optimal degree of social insurance in society?
- What is the second-best optimal policy if constraints prevent implementation of first-best policy?
- How should public policy deal with the presence of externalities?
- What are the right and wrong policies to deal with the climate challenge?
What is the scope for fiscal stimulus policy during economic crisis?

Learning Outcome

After completing the course, the student should be able to:

Knowledge:

- provide precise definitions of key concepts used in public finance when debating public policy (tax pressure, excess burden, intensive vs. extensive responses etc.),
- know about motives for and against public sector involvement in the economy (redistribution, externalities, efficiency loss etc.),
- fully understand the theories and underlying assumptions behind key arguments about public policy (e.g. theory about tax incidence),
- know about and understand the different empirical methods applied when analyzing the effects of public policy (e.g. the difference-in_difference method),
- know about the assumptions underlying the different methods (e.g. the common trend assumption),
- know about main empirical findings on the effects of public policy (e.g. introducing an earned income tax credit).

Skills:

- Analyse and engage in discussions about the effects and optimality of public policy initiatives by understanding and using the appropriate concepts,
- providing correct theoretical arguments,
- include relevant results from the empirical literature,
- assess which empirical methods to use for analysing a policy problem,
- discuss the strengths and weaknesses of different methods

Competencies:

- Bring into play the achieved knowledge in academic discussions about how to analyze the effects and optimality of new policy initiatives.
- Acquire additional knowledge about public policy issues through reading of scientific journal
articles and by following more advance courses in public finance.

Teaching and learning methods
Lectures including two workshop where students analyze a problem theoretically and practice on using empirical methods to identify relevant behavioral responses to public policy.

Academic qualifications
Knowledge of basic economic principles at the first year level, micro economics at the second year level and empirical methods at the second year level.

Exam registration requirements: Ingen

Language: English
6.5.60  AØKA08073U Regnskabsanalyse og aktievurdering (F)

Kursusindhold

Metoder inden for fundamentalanalyse vil blive gennemgået og anvendt på cases.

Emnet inkluderer: sammenligning af forskellige værdiansættelsesmetoder (multiple og kapitalværdibaserede modeller), udførelse af analyser af rentabilitet, vækst, risiko og værdiskabelse samt udarbejdelse af proforma regnskaber.

Faget er i sin natur overvejende anvendelsesorienteret og sigter på studerende, der søger beskæftigelse inden for investeringsbanker, børsmæglere og corporate finance mm.

Målbeskrivelser

Efter kursets afslutning skal den studerende kunne

Viden:

- Redegøre for indholdet i fundamentalanalysen
- Diskutere fordele og ulemper ved forskellige værdiansættelsesmetoder
- Forholde sig kritisk til kvaliteten af de rapporterede årsrapporter

Færdigheder:

- Reformulere de rapporterede finansielle opgørelser til analysebrug
- Gennemføre analyser af rentabilitet og vækst
- Udarbejde proforma regnskaber
- Konvertere proforma regnskaber til en værdiansættelse

Kompetencer:

- Gennemføre en fundamentalanalyse
- Implementere analyseværktøjer til analyser at rentabilitet og vækst
Undervisningsform: Dialogforelæsninger med hovedvægten lagt på gennemgang af pensum samt gennemgang af øvelser/cases

Anbefalede forudsætninger: Det vil være en fordel at have fulgt faget ‘Årsregnskab og regnskabsanalyse’. Faget gør udstrakt brug af Excel, hvorfor du forventes at være bekendt hermed.

Formelle krav: Ingen

Sprog: Dansk
6.5.61  AØKA08218U Science of Behavior Change

Content
Over the last 30 years, behavioral scientists have gained a deeper understanding of what motivates people, how they process information, and what non-economic features of the choice environment influence decisions. Many of their insights challenge traditional assumptions such as rationality, self-interest, time consistency. This research program (sometimes called “Behavioral Economics” or "Psychology and Economics") has shed light on how people’s decisions deviate from “optimal” choices as well as the consequences of such deviations. But, how can we use this knowledge? How can we get people to save more money, eat healthy foods and engage in healthy behaviors, and more generally make better choices? This course allows the student to develop a hands-on approach by learning and applying the methods of behavioral economics and more importantly, how it can be harnessed by suitably designing contexts to “nudge” choice. We will review research on human decision making from psychology, political science, organizational behavior and economics and we will look for easy-to-implement solutions. At the end of this course, students are supposed to become “choice architects” able to identify human biases and creatively design interventions, policies or products that help people make better decisions.

Learning Outcome
After completing the course, the student should be able to:

Knowledge:

- Review the most recent developments and theories of human decision-making both from Economics and Psychology.
- Analyze the tools of behavioral science (namely incentive, regulation, persuasion and nudging) and they will compare their effectiveness to change specific behaviors.

Skills:

- Reflect on how experiments and randomized controlled trials work and why this methodology is critical for making inference about causal relationships.
- Debate and discuss critically several interventions that have been conducted to change people’s behavior in the domain of energy efficiency, health and well-being, dishonesty, charitable giving,
education and work performance.

**Competencies:**

- Examine cases where people make decisions that are inconsistent with the assumptions of rational decision making and they will identify the consequences of this irrational behavior for the society.
- Design experiments and develop policy intervention aiming at ameliorate societal well-being and improve people’s life.

**Teaching and learning methods**

Student participation will be expected and encouraged. An active discussion in class is essential for an effective peer learning. Students have to read the assigned papers before each lecture to be able to discuss it in class. Moreover, students will have homework and group work to do in preparation of the lectures. The course is divided in two parts: in Part 1 “Principles and Methods” I will introduce the topic and present the relevant literature for the course; in Part 2 “Applications” we will discuss and analyze a different topic in each lecture.

In Part 2, for each lecture, we will have a group of students (5-10 students) in charge to:

1) Read the papers assigned and prepare a critical review (approximately 10 pages).
2) Prepare a presentation (approximately 45 minutes) and find a way to actively engage other students in the learning/discussion process.

**Academic qualifications**

The course requires that students read several scientific papers and have some knowledge of Microeconomics and Econometrics. Thus, it is recommended that students have followed or are following Micro III (C).

**Exam registration requirements:** To be able to sit in class and take the final exam, students have to present and discuss in class (at least) one of the papers in the reading list that will be distributed at the beginning of the course.

**Language:** English
6.5.62 AØKA08075U Skatteret (F)

Kursusindhold

Fagets emnerække bestod af en spændvidde fra den formelle skatteret med overblik over skattemyndigheder, formelle regler og sagsbehandlingsreglerne og til den materielle skatteret via personskatten, erhvervsbeskatningen og selskabs- og koncernbeskatningen.


Fagets konkrete emnerække består af en spændvidde som følger:

- den formelle skatteret med overblik over skattemyndigheder, formelle regler og sagsbehandlingsreglerne i skatteforvaltningsloven
- den materielle skatteret via personskatten, lønmodtagere, selvstændigt erhvervsdrivende - og virksomhedsbeskatningen
- den materielle skatteret for selskaber- og koncerner, selskabsbeskatningen, sambeskatning, tilskudsforhold mv.
- den subjektive skattepligt for fysiske personer og selskabers fulde og begrænsede skattepligt.
- skatteberegningsreglerne
- indkomstopgørelsen i øvrigt, de objektive regler, herunder driftsudgifter, afskrivninger mv.
- kapitalindtægter, afhændelsesavancer og udbytter (aktieavancebeskatningsloven, kursgevinstbeskatningsloven)
- fast ejendomsbeskatning.
- familiebeskatning, gaver mv.

Målbeskrivelser

Efter kursets afslutning skal den studerende have opnået

Viden:

- om og indføring i de skatteretlige retskilder, disses indbyrdes sammenhæng og retskildernes
fortolkning.

Færdigheder:

- en akademisk/praktisk orienteret tilgang til faget skatteret, hvor den studerende har mulighed for at få et indblik i de skattejuridiske retskilder, herunder med særlig vægt på tilegnelse af juridisk metode, og de værktøjer som det kræves til arbejde med skatteret i praksis.

Kompetencer:

- til at anvende skatteret og retskilder som "værktøj" i efterfølgende virke.
- til at anvende skatteretlige kilder som led i analysearbejde inden der foretages økonomiske dispositioner, så som investeringer, selskabsstiftelser, omdannelser, formuepleje mv.

Den studerende har ved afsluttet kursusforløb opnået viden/færdigheder/ kompetencer bredt inden for den skatteretlige videnskab – således at dette kan anvendes i praksis eller i skatteretlige/økonomiske analyser.

Undervisningsform: Undervisningen foregår i klassemum med sædvanlig kombination af forelæsning og studerendes gruppearbejde.

Anbefalede forudsætninger: Der kræves ikke særlige forudsætninger for at deltage i undervisningen. Der vil løbende ske en indføring i juridisk metode, således at faget tilpasses deltagernes forudsætninger.

Formelle krav: Ingen

Sprog: Dansk
6.5.63  AØKK08216U  Social Data Science

Content

The objective of this course is to learn how to analyze, gather and work with modern quantitative social science data. Increasingly, social data that capture how people behave and interact with each other is available online in new, challenging forms and formats. This opens up the possibility of gathering large amounts of interesting data, to investigate existing theories and new phenomena, provided that the analyst has sufficient computer literacy while at the same time being aware of the promises and pitfalls of working with various types of data.

Learning Outcome

We will introduce students to the state of the art social science literature using computational methods and social data.

We will present students with an overview of key benefits and challenges of working with different kinds of social data. We will show how various kinds of data (survey, web-based, experimental, administrative, etc.) can be used to answer different questions within the social sciences. Furthermore, we will discuss ethical challenges related to the use of different types of data.

We will introduce students to statistical techniques for predicting and classification, known as statistical learning, and we will discuss how these methods relate to existing empirical tools within economics such as causal inference and regression.

We will present modern data science methods needed for working with computational social science and social data in practice. Being an effective economist and data scientist means spending large fractions of our time writing and debugging code. In this section you will learn how to write code to clean, transform, scrape, merge, visualize and analyze social data. In addition to core computational concepts, the class exercises will focus on the following topics

1. Generating new data: We will learn how to collect and scrape data from websites as well as working with APIs.
2. **Data manipulation tools:** Participants will learn how to go from unstructured data to a dataset ready for analysis. This includes to import, preprocess, transform and merge data from various sources.

3. **Visualization tools:** We will learn best practices for visualizing data in different steps of a data analysis. Participants will learn how to visualize raw data as well as effective tools for communicating results from statistical models for broader audiences.

4. **Reproducability tools:** We will cover key implementations of statistical learning algorithms and participants will learn how to apply and interpret these models in practice.

After the course the student should:

- Have strong knowledge of the state of the art social science literature using computational methods and social data.

- Have strong knowledge of advantages and challenges in using different kinds of data to answer various questions in the social sciences.

- Strong practical data science skills such as the ability to scrape web pages, import and export data from numerous sources, basic knowledge of functional programming and effective data visualization skills.

- Have knowledge of widely used statistical prediction algorithms as well as the ability to estimate these models in practice.

**Teaching and learning methods**

The course will consist of lectures and exercises and problem solving. The lectures will focus on the broad topics covered in the course (part 1–3 listed above). In the exercise classes we will get our hands dirty and present data science methods needed for collecting and analyzing real-world data. The exercises do not have a large amount of time for learning how to code. We will use some of this time like development meetings: going over assignments, having detailed code reviews of various forms, and discussing blocking issues and potential solutions.

**Academic qualifications**
The course builds on a wide range of techniques so the students are expected to have an interest in social data science and at least in one of the following: statistics, econometrics, linear algebra, and a scripting language (in the course it will be Python).

**Exam registration requirements:** Students are expected to complete at least 2 out of 3 mandatory assignments.

Full participation at the summerschool is mandatory and the student must actively participate in all activities.

The project assignment can be answered in English or in Danish. Language must be chosen at the course registration.

**Language:** English
Kursusindhold

Det foreløbige program er:

dag 1 - Intro - simpel tilfældig udvælgelse - stratifikation. FORMLER

dag 2 - Efterstratifikation - ANVENDELSER af stratifikation. Proc Surveymeans

dag 3 - Cluster sampling - ettrins og totrins - FORMLER (variansanalyseopspaltning)

dag 4 - Eksempler på sampling i praksis. Clustre, stratifikation, vægtning. Proc Surveymeans

dag 5 - Replikations metoder. Moderne stikprøver, som fx Pisa undersøgelserne, stilles til rådighed med replication weights, som uden videre kan bruges af SAS.


Det giver spredt ud over det samlede forløb omkring 3 dage med formler og 3 dage med eksempler og SAS-anvendelser.

Målbeskrivelser

Efter kursets afslutning skal den studerende

Viden:

- have kendskab til formelapparatet omkring beregning af stikprøveusikkerhed herunder også til de matematiske beviser
- have indsigt i de specielle problemer der opstår når stikprøvedata analyseres med statistiske modeller
- have kendskab til SAS-procedurerne for statisk analysere af stikprøvedata
Færdigheder:

- evne at planlægge en stikprøveanalyse
- evne at uddrage viden af en stikprøve, fx til at rette eventuelle skævheder
- evne at uddrage viden fra en indsamlet stikprøve ved hjælp af statistiske modeller

Kompetencer:

- kunne forestå alle faser i en stikprøveanalyse; lige fra planlægning af stikprøvedesign over vurdering op oprettning af skævheder til den afsluttende statistiske analyse for at uddrage information fra de indsamlede data.

Undervisningsform

Undervisningsformen udnytter formatet med skemalagt undervisning over seks hele dage. Der anvendes forelæsninger med indbyggede regneøvelser på lommeregner og på medbragt bærbar PC med SAS. Desuden vil der være både formelbaserede og computerbaserede øvelsesopgaver fra weekend til weekend. Opgaverne gennemgås i undervisningstiden og der er herunder muligheder for feedback. Der må altså påregnes en vis individuel studieaktivitet i perioden mellem weekenderne.

Anbefalede faglige forudsætninger

Viden svarende til kurset Økonometri I (Økonometri B) og minimum sideløbende med Stikprøveteknik. For MatØk forudsættes statistikkurserne til og med andet år bestået. For deltagere fra andre uddannelser kræves et grundlæggende statistikkursus, der jo findes på mange universitetsuddannelser.

Formelle krav: Ingen

Sprog: Dansk
6.5.65  ÅKA08101U  Strategic Management

Content

The aim of the course is to provide students with an analytical qualitative foundation for developing a business strategy for an organisation based on tools within the area of strategic management, and drawing on different theories of economic value creation.

The course starts by explaining some central terms, concepts, and definitions in the area of strategy as for instance the mission, vision and strategy of an organisation, and we will look into some different ways in which a strategy can be developed. In connection to this we will discuss behaviouralism and the idea of bounded rationality.

Next we will focus on how we can map and analyse the environment of a company and on how Porter’s Five Forces framework builds on the neoclassical theory and the structure of conduct performance paradigm. Further we will determine competitive advantages and how economic value is created through the internal resources, activities, and competencies of the firm. Here we draw on the resource-based view and evolutionary economic theory. Furthermore, tools for mapping and analysing the political and cultural context of the company will be presented and in connection to this we will focus on principal/agent theory and behavioral theory.

After this we will discuss how corporate strategies, business/competitive strategies, international strategies, growth strategies, and strategies on innovation can be developed. We will look into the different roles for the patterning company and the size of the corporation drawing on transaction cost theory. When looking at the competitive strategies of the company we will discuss the importance of long-term commitment, game theory, neo-institutional theory, and constitutional theory. Furthermore, we will be concerned with entrepreneurship and innovation, and some of Schumpeter’s ideas of value creation. We will also explain what kind of route companies develop through over the long-term view and what kind of classical growth problems they face during this development. Finally, in this section we will look at how we can evaluate different strategies concerning their suitability, acceptability, and feasibility.

In the last section of the course we will exemplify how companies can implement their strategies through organising the company, developing its functional areas, and by managing strategic change. Again, we will return to the ideas of bounded rationality and the management of stakeholders introduced within
behavioural theory.

**Learning Outcome**

After completing the course, the student should be able to demonstrate:

**Knowledge:**

- About relevant terms, concepts, models, processes and perspectives within the field of strategic management
- About economic theories that the terms, models and processes of strategic management draw upon
- To understand how different strategy models and processes draw on different types of economic theory.

**Skills:**

- To identify strategic problems within organizations and industries.
- To solve strategic problems within organizations and industries.
- To talk about organizations and their environment within a clear and accurate language that make use of relevant terms and concepts from the field of strategic management and relevant economic theories.

**Competences:**

- In analysing organizations and their environments
- In analysing strategic problems and argue for relevant strategic solutions
- To develop strategies and creating a strategy implementation plan.
- In discussing and evaluating the strength and weakness of the applied terms, concepts, models, processes and perspectives within the field of strategic management in relation to the behind economic theories.

**Teaching and learning methods**

Within the classes a combination of lectures, group work, student speeches and plenum discussion are applied. It is expected that students participate in the lessons and during the lessons are willing to entre
class discussions and make a group presentation of a case. As a consequence students must prepare the text and cases in advanced. Further students must be willing to engage in presentation and discussion of text and cases.

The course in Strategic Management can also be combined with the seminar in Strategic Management.

The course can also be supplemented by the course in Advanced Strategic Management, which goes further into deep with strategic challenges facing top management.

**Academic qualifications**

In order to follow this course a basic understanding of micro- and macroeconomics is necessary.

**Exam registration requirements:** In order to take the oral exam the students must hand in a 3 page individual exam paper before the exam. The date for this will be informed at the course.

**Language:** English
6.5.66 ÅKA08185U Tax Policy

Content

The course gives an overview on the basic models used to analyze the efficiency implications and optimal design of tax policy. The course puts emphasis on linking formal analysis to empirical analysis and to discuss implications of theoretical and empirical findings for real world tax policy.

Learning Outcome

After completing the course, the student should be able to:

Knowledge:

- Understand the concept of *tax incidence* including key theoretical predictions as well as common strategies for empirical measurement.
- Understand the concept of *economic efficiency* including theoretical predictions as well as common strategies for empirical measurement.
- Be able to account for the concept of *tax salience* as well as its implications for tax incidence and economic efficiency
- Know key facts about *commodity taxation* in the real world
- Understand the economic intuition behind theories of optimal commodity taxation as well as their implications for practical policy making
- Be able to account for the concept of *self-control problems* (including how it can be modelled in economic theory) and its implications for optimal commodity taxation
- Know key facts about *income taxation* in practice
- Understand the economic intuition behind theories of optimal income taxation as well as their implications for practical policy making
- Know key facts about *firm taxation* in practice
- Understand the economic intuition behind theories of firm taxation as well as their implications for practical policy making
- Understand the concept of *international tax competition* including key empirical facts and theoretical predictions
- Know key institutional facts about *offshore tax evasion*
• Be able to account for theories of tax evasion and important empirical findings

Skills:

• Derive predictions about *tax incidence* in simple theoretical models of partial equilibrium and interpret them in a straightforward language
• Derive formulas that capture the measurement of of *economic efficiency* in a simple theoretical framework and interpret them in a straightforward language
• Theoretically analyze tax incidence and economic efficiency under the assumption that *tax salience* is limited
• Derive expressions that characterize *optimal commodity taxation* in the canonical Ramsey model and interpret them in a straightforward language
• Derive expressions that characterize optimal commodity taxation in models assuming that some agents have *self-control problems* and interpret them in a straightforward language
• Derive expressions that characterize *optimal income taxation* at the top and at the bottom of the income distribution as well as in the presence of exogenous tags and interpret them in a straightforward language
• Derive expressions that characterize firm responses to *dividend taxation* under various assumptions about the firms and interpret them in a straightforward language
• Derive predictions about corporate taxation under *international tax competition* and interpret them in a straightforward language

Competencies:

• Discuss strengths and weaknesses of theoretical models of public finance in a straightforward language
• Discuss strengths and weaknesses of empirical strategies employed to measure key behavioral parameters in public finance
• Discuss concrete policy issues using terms and concepts from the theory of taxation in a straightforward language

Teaching and learning methods

Schedule:
Summerschool 2017:
Daily lectures from July 31 to August 11: 4 hours: 10 AM-12 noon and 14-16 PM
From August 14th to 17th is self study.

**Academic qualifications**

BSc in Economics. It is strongly recommended that Micro III from the study of Economics at the Department of Economics (or equivalent) has been followed prior to taking Tax Policy.

**Exam registration requirements:** Full participation at the summerschool is mandatory and the student must actively participate in all activities.

**Language:** English
6.5.67 AØKA08080U  Telecommunications Economics

Content

In the course the following issues will be presented:

- Supply and demand of telecommunication services: Fixed and mobile telephony, Internet, Cable TV, satellites etc.
- The broadband society. Telecommunication policy and relationships between the telecommunication sector, the rest of the economy and the general society. Relationships with IT and media. EU policy. Public/private cooperation.
- Prices, costs and investments. Interconnection and competition in the sector. Business structure (vertical and horizontal mergers, globalization).
- Network economics.
- Regulatory policy. Prices for interconnect. Cost models (LRAIC etc.). Universal Service Obligations.
- Spectrum auctions.

Learning Outcome

After completing the course, the student should be able to:

Knowledge:

- Have knowledge of all the relevant concepts and factual items regarding the questions raised and of the relationships between these.
- Have knowledge of the main economic and technical concepts and items used in the ICT sectors (ICT=Information and Communication Technology), especially for telecommunication, the Internet and supply of radio and TV channels.
- Have knowledge of the main trends and relationships in the ICT sectors regarding demand, supply, prices, market players, technical solutions, regulation etc.

Skills:

- Design an analysis to give a thoroughly description of the problem and find possible solutions to the
questions raised.

- Give a survey of the relevant economic issues regarding the questions raised and explain constraints and uncertainties in the presented solutions, often in the form of trade-offs between different objectives.

**Competencies:**

- Use the concepts and knowledge of the relationships to make analyses of major issues in the ICT sectors, as an employee at the regulator or at an operator/a player in the ICT sectors.
- Relate the issues in the ICT sectors to general economic theory.

**Teaching and learning methods**

Schedule: The course consists of 2 hours of classes (lectures) every week and 2x2 hours every second week for 14 weeks.

**Academic qualifications**

No requirements of learning from specific other courses. But a general knowledge of economic theory is recommended.

**Exam registration requirements:** Ingen

**Language:** English
Content

This comprehensive course offers theoretical and historical insights into the evolution of Europe. We start by tracing the continent’s emergence from being a technological and economic backwater at the end of the first millennium to being able to match the advanced Muslim and Chinese civilizations around 1500. We continue by following the economic advances as Europe forged ahead, becoming the leader of the Industrial Revolution and the source of numerous technological innovations, which were diffused internationally through trade and colonial domination, but with varying impact on the rest of the world. It is shown that Europe was unique in fostering a mentality of rational inquiry into the laws of nature which led to an industrial enlightenment. A special focus will be on the last 200 years of dramatic economic development, when a remarkable increase in income has been accompanied by recurrent crises and increased world inequality but decreasing domestic inequality. This has generated a variety of responses such as the modern macroeconomic stabilization policies, the Welfare State, and attempts to tame the disruptive impact of financial turbulence and unemployment. Although the last 150 years have been a period of remarkable growth, they have also been a period of recurrent crises which require explanation.

Learning Outcome

To fulfil the purposes of the course the student must be able to:

Knowledge:

- Identify, explain, and reflect upon the main topics within economic history
- Understand the difference between the forces at work in the pre-industrial era, when division of labour and trade were major factors in economic development, and science-based technological progress in the modern era
- Evaluate the impact of the constraints of resources on economic growth and the determinants of population growth in the pre-industrial as well as the modern era
- Understand the institutional preconditions for transfer of knowledge and convergence of income levels across nations in Europe
- Explain and reflect upon the economic history of money
- Understand the forces which shape trade policies (free trade vs. protectionism) and know the general outline of the phases of trade regimes during the last 200 years
• Understand the mechanisms and workings of international monetary orders such as the Gold Standard, the Bretton Woods system and the euro
• Describe the changes in inequality over time, and explain how to measure this
• Describe and reflect upon the history of globalization and the challenges it presents
• Understand the role and impact of Europe in a global economy

Skills:

• Use simple data methods to analyse historical data
• Apply economic theory as it relates to economic history
• Read and report from scholarly journal articles

Competences:

• Explain the main topics in economic history
• Apply models and theories related to economic history
• Work with and process historical time series such as wage, price, and population data

Teaching and learning methods:

The course will consist of lectures, seminars and exercise sessions scheduled in a plan the students will receive from the teacher. In the seminars, the students will present and discuss papers related to topics discussed in the preceding lectures. In the exercise sessions, the students will be taught to use the historical time series on the textbook’s website www.econ.ku.dk/europe http://www.cambridge.org/dk/academic/subjects/history/economic-history/economic-history-europe-knowledge-institutions-and-growth-600-present-2nd-edition?format=PB&isbn=9781107479388.

Academic qualifications: Economics at the level of first year Principles of Economics is recommended, however ambitious students in history and the social sciences can follow the course since basic economic concepts are explained in the textbook.

Exam registration requirements: Full participation at the summerschool is mandatory and the student must actively participate in all activities.
**Kursusindhold**

Kurset fokuserer på de praktiske dele af emnekredsene. Det betyder, at de matematiske udledninger bag metoderne kun sporadisk berøres, mens de praktiske aspekter prioriteres højt.

**Praktisk Regressionsanalyse:** Indflydelsesrige observationer, Logistisk regression, Fortolkninger af den fundne model

**Stikprøver:** Bedømmelse af usikkerhed, Opvejning, Fortolkning af resultater, Muligheder for videre analyse

**Korrelationsanalyse:** Korrelationskoefficient, Principal komponenter, Todimensionale værdikort

**Imputation:** Metoder til udfyldning af manglende observationer i et datasæt

I undervisningen anvendes datasæt om økonomi, sociologi og samfundsforhold. Disse data kan indeholde få observationer, men kan også have karakter af "big data". Som eksempler kan nævnes:

Datasæt der beskriver forhold i europæiske storbyer, alle biblioteksudlån på københavnske folkebiblioteker i et år eller alle parkometertransaktioner i København i en flerårig periode.

PISA datasættet, der udover data om skoleelevers faglige kompetencer indeholder et væld at socioøkonomiske oplysninger.

Datasættet European Social Survey, ESS, der beskriver og sammenholder sociologiske forhold i de europæiske lande

Arbejdsmiljø og helbred 2012 og 2014, som er to stikprøver af befolkningen på ca. 50.000 beskæftigede lønmodtagere i Danmark mellem 18 og 64 år.

**Målbeskrivelser**

**Viden:**

- Viden om betydningen af de enkelte datapunkter i den lineære regressionsmodel og i den logistiske regressionsmodel
• Kendskab til robust regressionsanalyse
• Et indledende kendskab til faktormodeller; specielt med henblik på værdikort
• Et indledende kendskab til beregning af stikprøveusikkerhed
• Indsigt i problemstillingerne omkring imputation af manglede observationer
• Kendskab til SAS herunder til procedurerne for de statistiske modeller og metoder i kurset

Færdigheder:

• Evne til at vurdere enkeltobservationers indflydelse på regressionsanalysers resultater
• Evne til at udføre en robust regressionsanalyse
• Evne til vurdere usikkerheden i simple stikprøveanalyser og til at rette eventuelle skævheder
• Evne til at konstruere et værdikort
• Evne til udfylde manglende observationer i et datasæt og til at vurdere konsekvenserne heraf
• Evne til at anvende udvalgte SAS-procedurer

Kompetencer:

• Evne til at læse videnskabelig litteratur, der bygger på indsamlede stikprøver eller multipel lineær regression
• Erhverve et tilstrækkeligt kendskab til stikprøver og den multiple regressionsmodel, så den studerende efter kurset kan samarbejde med andre faggrupper, herunder statistikere
• Evne til selv at analysere data
• Evne til at relatere resultaterne til den virkelighed, data stammer fra.

Kurset sætter deltageren i stand til at udføre en statistisk analyse i praksis med specielt fokus på at kunne fortolke analysens resultater ind i en faglig sammenhæng og til at vurdere kvaliteten og validiteten af de anvendte observationer.

Undervisningsform: På sommerskolen vil undervisningen bestå af forelæsninger, der mest består af

Hertil kommer et begrænset hjemmearbejde, der måske med fordel kan foregå i forlængelse af øvelsesundervisningen. Kurset strækker sig dermed over hvad der svarer til to ugers fuldtidsstudium.

SAS-Introduktion:
Før kursuset start afholdes en SAS-introduktion på 3 timer. Der gives en kort gennemgang (indføring og eller genopfriskning) af programpakken SAS, der anvendes igennem forløbet herunder hjælp til installation af SAS på egen medbragt PC.

Anbefalede faglige forudsætninger: Kurset bygger videre på et grundlæggende statistikkursus, fx ”Sandsynlighedsteori og Statistik” (Økonometri A) og Økonometri I(Økonometri B) på politstudiet. For deltagere fra andre studier kræves et grundlæggende teoretisk statistikkursus samt matematik på A niveau fra gymnasiet.

Formelle krav: Der er mødepligt og krav om aktiv deltagelse til alle dele af sommerskolen, med undtagelse af SAS-introduktionen før sommerskolens kursusstart

Sprog: Dansk
Kursusindhold

Målbeskrivelser
De studerende skal lære at foretage analyser og udarbejde økonomiske prognoser i praksis på baggrund af den makroøkonomiske model ADAM. Efter et succesfuldt gennemført kursus skal de studerende have opnået:

Viden:

- Den makroøkonomiske model ADAM - både dens teoretiske baggrund og dens egenskaber
- Indikatormodeller og faktormodeller til nowcast
- Udarbejdelse af prognoser på baggrund af makroøkonometriske modeller
- Den aktuelle konjunktursituation

Færdigheder:

- Opbygning af scenerier for dansk økonomi frem i tid under givne forudsætninger
- Vurdering af økonomiske prognoser foretaget af andre
• Systematisk brug af nøgletal og indikatorer som baggrund for det/de første ikke kendte år
• Indarbejdelse af teoretiske ændringer i makroøkonomiske modeller

Kompetencer:

• Ændring og revision af allerede udarbejdede prognoser på baggrund af ny information
• Udarbejdelse af analyser på baggrund af politiske indgreb eller eksogene stød til dansk økonomi

Undervisningsform: Holdundervisningen sigter mod at sætte de studerende i stand til selv at kunne udarbejde økonomiske fremskrivninger og konsekvensberegninger for dansk økonomi, mens forelæsninger giver den teoretiske indsigt.


Det vil være nødvendigt at have adgang til en bærbar computer til øvelsestimerne, hvorpå Excel (eller lignende program) er installeret og Gekko kan installeres. Internetforbindelse til den bære computer vil være en stor fordel. Gekko vil være ganske gratis at downloade og installere for alle, som har lyst til at bruge det. Gekko kører på alle windows-systemer fra XP og opad (også 64-bit). Der er ikke særlige krav til hardware eller lign. Men den kører ikke umiddelbart på Mac eller Linux.

Formelle krav: Ingen

Sprog: Dansk
Indhold: Kurset indeholder 3 moduler:


Målbeskrivelse: Det overordnede formål med undervisningen er, at de studerende efter gennemførelsen af kurset skal have en professionel viden om årsrapporters informationsindhold. Dette til brug i analysemæssig sammenhæng hvad enten den studerende bliver ansat i den offentlige sektor, bliver analytiker i f.eks. banker eller ønsker ansættelse i en anden privat virksomhed. Modul 2 og 3 træner dels forståelse og kritiske stillingtagen til regnskabsinformation samt dels den regnskabsanalytiske kompetence.

Undervisningsform: Forelæsninger vekslende med opgaver. Der gennemgås opgaver/cases løbende.

Anbefalede forudsætninger: Gennemførelse af 1. år af bacheloruddannelsen i økonomi eller tilsvarende.

Formelle krav: Ingen

Sprog: Dansk