An Introduction to Development Studies

ECON 10002

Credit rating 10
ECTS credits 5

Semester 2

Unit coordinator: Nicholas Weaver

School of Social Sciences
Economics
Undergraduate

Level 1

FHEQ level ' First part HE study/Bachelors'

Marketing course unit overview

To provide students with an understanding of the quantitative methods and tools that economists use and how they can be appropriately applied and interpreted. These methods and tools are used in practical and academic settings to test economic theories and measure magnitudes that are relevant for economic policy analysis and other decisions. These methods are a key element of the professional training an economist; they will provide a foundation for subsequent study of applied and quantitative topics and are useful in many careers in economics. The course aims to equip students with a number of core competencies including: (i) an awareness of the main empirical approach to economics, (ii) experience in the analysis and use of data and software packages as tools of quantitative and statistical analysis to answer topical economic questions, (iii) an understanding of the nature of uncertainty and methods of making inference in the presence of uncertainty.

The objectives of this course are that students will be able to:

- understand the main techniques of quantitative economics and econometrics, including their strengths and limitations, at a level appropriate for an economics graduate
- understand how these techniques can be applied to test economic theories and measure economic magnitudes, and have some knowledge of methods and results in selected areas of the applied economics literature
- have some practical experience of the application of econometric methods based on practical exercises
- have acquired the necessary skills and knowledge to be able to critically appraise work in the area of applied economics.
- have a good intuitive and theoretical grasp of the dangers, pitfalls and problems encountered in doing applied modelling.
- have the necessary background material so that they are able to go on to study more advanced and technical material in the area of econometrics.
- use the R software package to obtain basic descriptive statistics using real world data and perform introductory econometric analysis.

Course unit overview

This course aims to provide a self-contained introduction to the academic study of development for general social scientists and to cover the preparatory material for more advanced development courses in the second and third years.

On completion of this unit successful students will be able to demonstrate their knowledge of the meaning and measurement of development and a superficial understanding of all and deep understanding of at least one of the following books:
- **Sen, A. (1999) Development as Freedom,**
- **Chang, H.J. (2007) Bad Samaritans**
- **Hulme, D. (2016) Should Rich Nations Help the Poor?**
- **Hulme, D. (2015) Global Poverty: Global Governance and Poor People in the Post-2015**
- **World Bank. (2011) World Development Report 2012:**

Aims

This course aims to provide a self-contained introduction to the academic study of development for general social scientists and to cover the preparatory material for more advanced development courses in the second and third years.

Learning outcomes

On completion of this unit successful students will be able to demonstrate their knowledge of the meaning and measurement of development and a superficial understanding of all and deep understanding of at least one of the following books:

- **Sen, A. (1999) Development as Freedom,**

- **Chang, H.J. (2007) Bad Samaritans**

- **Hulme, D. (2016) Should Rich Nations Help the Poor?**

- **Hulme, D. (2015) Global Poverty: Global Governance and Poor People in the Post-2015**

- **World Bank. (2011) World Development Report 2012:**

- **Gender Equality and Development. World Bank**

- **Piketty, T. (2014) Capital in the Twenty-First Century**

- **Dasgupta, P. (2007) Economics: A Very Short Introduction**

Wydick, B. (2008) Games in Economic Development

Employability skills
Analytical skills

Problem solving

Syllabus
Topics and Reading List

Introduction: An introduction to the course and to development at Manchester.

The origin of the term "Economic Development":
• Arndt, H.W. (1981) Economic Development: A Semantic History, Economic Development and Cultural Change, Volume 29, Number 3, April 1981.

The Meaning of Development:
• Thirlwall, A (2003) Growth and Development: With Special Reference to Developing Economies, Palgrave 7th Ed. - Chapter 1 The Study of Development.
• Colman, D and Nixson, F (1994) Economics of Change in Less Developed Countries, Harvester Wheatsheaf - Chapter 1 section 1.1 What is Development.

The Measurement of Development:
• Thirlwall, A. (2003) Growth and Development: With Special Reference to Developing Economies, Palgrave 7th Ed. - Chapter 2 The Development Gap and Measurement of Poverty.
• Colman, D. and Nixson, F. (1994) Economics of Change in Less Developed Countries, Harvester Wheatsheaf - Chapter 1 section 1.2 Measuring Development and 1.3 Conclusion.
• UNDP's Human Development Reports (see the website).

Development as Freedom:
• Sen, Amartya (1999) Development as Freedom, Oxford.

International Institutions and Development:
• UN, World Bank, International Monetary Fund, World Trade Organization websites.

Aid, Development and Poverty:
• Hulme, David (2016) Should Rich Nations Help the Poor? Polity.
• Hulme, David (2015) Global Poverty: Global Governance and Poor People in the Post-2015, Routledge.

Gender and Development:
• World Bank. (2011) World Development Report 2012: Gender Equality and Development. World Bank.

History and Political Economy for Development:
• Chang, Ha-Joon (2007) Bad Samaritans.
• Piketty, T. (2014) Capital in the Twenty-First Century.

Economics as Development:
- Dasgupta, Partha (2007) Economics: A Very Short Introduction, Oxford.
- Wydick, B. (2008) Games in Economic Development, Cambridge.

Teaching and learning methods

Assessment methods

Weight   Description
100   Exam

Assessment methods
Final Exam: 20 MCQs and a "critical" review of one of a list of books.For information about feedback please follow this link:

http://www.campus.manchester.ac.uk/tlso/map/teachinglearningassessment/assessment/sectionb-thepracticeofassessment/policyonfeedbacktostudents/

Feedback methods
- MCQs in the lecture slots.
- Mock Exam.
- Students can also receive further feedback from tutorials, office hours and discussion board on Blackboard.

Requisites: NONE

Available as free choice?   Y

Recommended reading
See "Syllabus" section.

Introductory Mathematics

ECON 10061

Credit rating 10
ECTS credits 5

Semester 1

Unit coordinator: Adam Ozanne

School of Social Sciences
Economics
Undergraduate

Level 1

FHEQ level ' First part HE study/Bachelors'

Marketing course unit overview
Marketing course unit overview

Course unit overview

To provide students with an understanding of the quantitative methods and tools that economists use and how they can be appropriately applied and interpreted. These methods and tools are used in practical and academic settings to test economic theories and measure magnitudes that are relevant for economic policy analysis and other decisions. These methods are a key element of the professional training an economist; they will provide a foundation for subsequent study of applied and quantitative topics and are useful in many careers in economics. The course aims to equip students with a number of core competencies including: (i) an awareness of the main empirical approach to economics, (ii) experience in the analysis and use of data and software packages as tools of quantitative and statistical analysis to answer topical economic questions, (iii) an understanding of the nature of uncertainty and methods of making inference in the presence of uncertainty.

The objectives of this course are that students will be able to:

- understand the main techniques of quantitative economics and econometrics, including their strengths and limitations, at a level appropriate for an economics graduate
- understand how these techniques can be applied to test economic theories and measure economic magnitudes, and have some knowledge of methods and results in selected areas of the applied economics literature
- have some practical experience of the application of econometric methods based on practical exercises
- have acquired the necessary skills and knowledge to be able to critically appraise work in the area of applied economics.
- have a good intuitive and theoretical grasp of the dangers, pitfalls and problems encountered in doing applied modelling.
- have the necessary background material so that they are able to go on to study more advanced and technical material in the area of econometrics.

- use the R software package to obtain basic descriptive statistics using real world data and perform introductory econometric analysis.

Aims
The aim of this course is to introduce students who have not taken mathematics A level to the main mathematical tools used in economics and the social sciences.

Learning outcomes
At the end of the course students should be able to: (i) differentiate simple mathematical functions of one variable, (ii) use differential calculus to solve simple, one-variable unconstrained optimisation problems; (iii) partially differentiate two-variable functions, (iv) integrate simple mathematical functions, and (v) use the definite integral to find the area under a graph.

Employability skills
Problem solving

Taking ECON10061 will enhance the basic numeracy and mathematically skills of students who only took maths to GCSE level at school. These skills, alongside literacy and being articulate in speech, are highly valued by employers

Syllabus
The course is organized in three parts of which the second will be the largest.
Algebra and Coordinate Geometry: Basic algebra, factors and factorizing, quadratic equations, powers, logarithms, mathematical functions, graphs, linear and non-linear functions.
Differential Calculus: Slopes of graphs between points and at a point, differentiability, ordinary differentiation, rules of differentiation, marginal concepts, second derivatives, maxima and minima, profit maximization, functions of more than one variable, partial derivatives.
Integration: Indefinite and definite integration, finding the area under a curve.
Please note, especially when speaking with former ECON10061 students and looking at past exam papers, that the syllabus for ECON10061 is changed in 2017-18. Essentially, matrices was dropped and replaced with partial differentiation and integration.

Teaching and learning methods
Lectures and exercise classes.

Assessment methods
Weight	Description
90	Exam
10	Weekly coursework assignments

Feedback methods
On ECON10061, the work you hand in for the Tests will be marked by your

Teaching Assistant and you will have access to an anonymized sample of marked student work every week via Blackboard for some of the weekly exercises. In addition, you will be able to obtain feedback by making use of the Teaching Assistants' weekly office hours, by emailing questions to your Teaching Assistant, and from other students during Exercise Classes and PASS sessions.

The School of Social Sciences is committed to providing timely and appropriate feedback to students on their academic progress and achievement, thereby enabling students to reflect on their progress and plan their academic and skills development effectively. However, remember that feedback is responsive: i.e. we can only provide feedback if you actually do the required work and engage with the feedback process.

Requisites
GCSE or AS Level Maths.

Available as free choice?   Y

Recommended reading

> (1) Jacques, I. "Mathematics for Economics and Business", Prentice Hall, 2009 (Sixth edition).
> (2) Renshaw, G. "Maths for Economics", Oxford University Press, 2009 (Second edition).
> (3) Wisniewski, M. "Mathematics for Economics", Palgrave Macmillan, 2013 (Third edition).
> (4) Asano, A. "An Introduction to Mathematics for Economics", Cambridge University Press, 2013.

Copies of the latest editions of the above books are available from Blackwell's Academic Bookshop. However, older, second-hand editions are just as good if not better than the latest editions, especially as the publishers have removed the **solutions to exercises** from the sixth edition of Jacques and second edition of Renshaw and made them available online instead in order to make students buy new copies of the books.

Several copies of all the above books are available in the John Rylands University Library, including the High Demand collection. However, **it is strongly recommended that you buy one of them, whether new or second-hand**. The ECON10061 lecture notes are not exhaustive; in particular, explanations are deliberately brief and the numbers of examples and exercises provided are few. You should therefore use them in conjunction with one of the above textbooks. Jacques and Renshaw are also recommended textbooks for Advanced Mathematics, which you may want to take in your second year.

If you feel you have forgotten much of your GCSE Maths, you should download the **GCSE MATHEMATICS HELP BOOKLET** from Blackboard and work through it over the first two or three weeks of term. The following books also cover the essential background material required for the course:

(5) Renshaw (see above), Chapters 1 and 2, and Chapter 3, sections 3.1-3.2.
(6) Jacques (see above), Chapter 1.
(7) Abbott, P.W. "Teach Yourself Algebra", David McKay and Co., 1995.
(8) Curwin, J. and Slater, R. "Improve Your Maths: A Refresher Course", Business Press, 2000

Course ID   004441

Advanced Mathematics

ECON 10071/20071
Credit rating 10
ECTS credits 5

Unit coordinator: Ralf Becker

Semester 1

School of Social Sciences
Economics
Undergraduate   ***Level 1***

FHEQ level ' First part HE study/Bachelors'

Marketing course unit overview
This unit provides students with the essential mathematical toolkit required by economics students. At the core of the unit are constrained, multivariate optimisation problems. Such problems form a core element of many economics units and students who took Advanced Mathematics will be familiar with the required solution techniques.
Students will also be introduced to the principles of modelling dynamic variables. Simple difference equations will be introduced to model the rate of change of variables.
Students will be provided with detailed material through lectures, tutorial, reading and online videos. A discussion board will allow students to receive frequent feedback on their understanding.

Course unit overview
This unit provides students with the essential mathematical toolkit required by economics students. At the core of the unit are constrained, multivariate optimisation problems. Such problems form a core element of many economics units and students who took Advanced Mathematics will be familiar with the required solution techniques.
Students will also be introduced to the principles of modelling dynamic variables. Simple difference equations will be introduced to model the rate of change of variables.
Students will be provided with detailed material through lectures, tutorial, reading and online videos. A discussion board will allow students to receive frequent feedback on their understanding.

Aims
The aim of this course is to introduce mathematical techniques useful in the economic and social sciences to those students who have the appropriate advanced mathematical background.

Learning outcomes
The objectives of this course are that students will be able to:
1. Solve simple linear equations, find roots a quadratic and understand the solution to non-linear equations.
2. Understand functions, continuity and basic differentiation.
3. Solve one and two-variable unconstrained and constrained optimisation problems using the Lagrangian method.
4. Demonstrate their understanding of linear univariate difference equations.

Employability skills
Analytical skills

Problem solving

Other   Using library, electronic and online resources.Numeracy, time management, improving own learning.

Syllabus
The preliminary syllabus is organized around the following five Learning Modules.
LM0: Preliminaries and Pre-requisites. A review of your mathematical background and some observations on logic
LM1: Functions & Univariate Calculus. Functions, continuity. Roots of equations. Limits and basic differentiation. Stationary points and optimisation. Concavity and convexity.
LM2: Vectors and Matrices. An introduction to vectors and matrices: their mathematical manipulation - addition, multiplication. Inverse matrix. Determinants. Rank. Quadratic Forms.
LM3: Bivariate Functions
Surfaces in 3D, contours. Partial functions and partial differentiation: the Jacobian and Hessian. Optimisation; saddle points. Concavity/convexity. Finding maxima/minima of functions of two variables subject constraints; e.g., maximising utility subject to a budget constraint.
LM4: Dynamics. Simple dynamics. Geometric Series. Linear difference equations

Teaching and learning methods
Lectures, exercise classes, reading and online videos.

Assessment methods

Weight	Description
95	Exam
5	Mid-term BB test

Feedback methods
- Mock exam.
- Online quizzes.
- Tutorial feedback.
- PASS sessions.
- Office hours.

- Discussion boards.

Requisites
A Level Maths or very good AS level

Available as free choice?   Y

Recommended reading
Detailed prescribed reading is provided on the BLACKBOARD site.
The **ESSENTIAL TEXT** (available from Blackwell University Bookshop, Oxford Road, Manchester) is:
- *ECON10071 Advanced Mathematics 2 Edition*
 A Pearson Custom Publication
 Compiled by Mario Pezzino
This text has been compiled specifically for this course from three sources:
Essential Mathematics for Economic Analysis (3rd Edition), by Knut Sydsæter and Peter Hammond
Further Mathematics for Economic Analysis (2nd Edition), by Knut Sydsæter, Peter Hammond, Atle Seierstad and Arne StrØm
A Guide to Game Theory, by Fiona Carmichael
The material covered is standard material and students can refer to many different textbooks and online resources for support.

Course ID 004442

Advanced Statistics

ECON 10072/20072

Credit rating 10
ECTS credits 5

Unit coordinator: Simon Peters

Semester 2

School of Social Sciences
Economics
Undergraduate

Level 1

FHEQ level ' First part HE study/Bachelors'

Marketing course unit overview

Course unit overview
Introduction to fundamental methods of statistics, which are the basis of techniques widely used in the analysis of economic and social data. The course is designed for students who have Maths A-Level or equivalent.

Aims
Introduction to fundamental methods of statistics, which are the basis of techniques widely used in the analysis of economic and social data. The course is designed for students who have Maths A-Level or equivalent.

Learning outcomes
At the end of this course, you should be able to:
1. Construct and understand essential descriptive statistics for sample data (means, variances, correlations, regression coefficients).
2. Manipulate conditional and unconditional probability.
3. Obtain and manipulate probabilities from important statistical distributions (including the Binomial, Normal and Student-t).
4. Understand and use key statistical concepts (including population, expectation, estimation).
5. Construct and interpret confidence intervals for population means and proportions.
6. Carry out and interpret simple hypothesis tests of relevance in the social sciences.

Employability skills
Analytical skills   Synthesis and analysis of data and information.

Problem solving

Other   Numeracy. Time Management.

Syllabus
1. Introduction and Descriptive Statistics.

2. Probability and Discrete Random Variables (means and variances).

3. Continuous Random Variables (means, variances, Normal distribution).

4. Expectations and Combinations of Variables (means, variances, joint probability distributions,

covariances, correlation, independence).

5. Sampling Distributions (samples, populations, properties).

6. Hypothesis Testing (sample means and proportions, large sample tests).

7. More Statistical Inference (confidence intervals, p-values).

Teaching and learning methods
Lectures and exercise classes.

Assessment methods
Weight   Description
95   Exam
5   open assessment coursework

Feedback methods
• Weekly exercise classes.
• Online quizzes.
• Office hours.

Requisites
ECON10071 Adv Maths

Recommended reading
All students are expected to download the detailed module notes. These form the basis of the lecture and tutorial material.
Many introductory statistics books cover the material in the module. Multiple copies of the following texts are available in the Main and Precinct Centre libraries:
Newbold, Carlson and Thorne (2009), Statistics for Business and Economics , Wonnacott and Wonnacott (1990), Introductory Statistics for Business and Economics

Computing for Social Scientists

ECON 10151

Unit coordinator: Patrick Macnamara

Credit rating 10
ECTS credits 5

Semester 1

School of Social Sciences
Economics
Undergraduate

Level 1

FHEQ level ' First part HE study/Bachelors'

Marketing course unit overview

Course unit overview

To provide students with an understanding of the quantitative methods and tools that economists use and how they can be appropriately applied and interpreted. These methods and tools are used in practical and academic settings to test economic theories and measure magnitudes that are relevant for economic policy analysis and other decisions. These methods are a key element of the professional training an economist; they will provide a foundation for subsequent study of applied and quantitative topics and are useful in many careers in economics. The course aims to equip students with a number of core competencies including: (i) an awareness of the main empirical approach to economics, (ii) experience in the analysis and use of data and software packages as tools of quantitative and statistical analysis to answer topical economic questions, (iii) an understanding of the nature of uncertainty and methods of making inference in the presence of uncertainty.

The objectives of this course are that students will be able to:

- understand the main techniques of quantitative economics and econometrics, including their strengths and limitations, at a level appropriate for an economics graduate
- understand how these techniques can be applied to test economic theories and measure economic magnitudes, and have some knowledge of methods and results in selected areas of the applied economics literature
- have some practical experience of the application of econometric methods based on practical exercises
- have acquired the necessary skills and knowledge to be able to critically appraise work in the area of applied economics.
- have a good intuitive and theoretical grasp of the dangers, pitfalls and problems encountered in doing applied modelling.
- have the necessary background material so that they are able to go on to study more advanced and technical material in the area of econometrics.

- use the R software package to obtain basic descriptive statistics using real world data and perform introductory econometric analysis.

Aims

This unit aims to develop students' intellectual, practical and transferable computing skills.

Learning outcomes

At the end of this course unit, it is expected that students will be able to

1. use and understand University IT systems, including library systems and associated citation and journal databases;
2. use the equation editor, styles and endnote referencing functionality within Microsoft Word and related software;
3. manipulate, summarise and visually represent data in Microsoft Excel;
4. use Microsoft Excel's solver functionality to solve constrained dynamic optimization problems;
5. integrate Microsoft Excel output within a Microsoft Word report to quantitative reports at a professional standard;
6. use Microsoft Excel for financial analysis;

Employability skills

Other   Students will obtain the practical computing skills identified in the Intended Learning Outcomes.

Syllabus
Weekly Schedule:

Week 1
- Introduction (Face-to-Face Lecture)
- University IT & Library Systems (Face-to-Face Lecture)

Week2
- Intermediate Word 1 (Web Lecture)
- Intermediate Word 2(Web Lecture)

Week 3
- Excel Overview (Face-to-Face Lecture)
- Excel 1 (Web Lecture)
- Excel 2(Web Lecture)
- Word (Class)

Week 4
- Excel 3 - Charts I (Web Lecture)

- Excel - XY plots, correlation and causality (Web Lecture)
- Data Distributions - frequency tables & histograms (Web Lecture)
- Excel: data, functions & formulae (Class)

Week 5
- The Integrated Word/Excel Project(Face-to-Face Lecture)
- Excel: plots and data (Class)

Week 6
- Reading Week

Week 7
- The Solver Assignment (Face-to-Face Lecture)
- Excel Solver(Web Lecture)

Week 8
- Excel for Finance (Face-to-Face Lecture)
- Excel: Solver (Class)
- **Onine Submission of Integrated Word/Excel Project**

Week 9
- Web Authoring 1(Web Lecture)
- Web Authoring 2(Web Lecture)
- Excel: Finance (Class)

Week 10
- Web Authoring (Class)
- **Online Submission of Excel Solver Assignment**

Week 11
- **Excel Multiple Choice Test** (Completed in class time)

Teaching and learning methods
- Face-to-Face Lectures
- Web Lectures
- Exercise Classes

The lectures are a mix of standard face-to-face format and web-based Flash lecture presentations that take you through the relevant material.

The web lectures are made available in Blackboard sequentially through the semester. You are required to view these lecture presentations before, rather than during, your exercise classes.

Assessment methods

Weight   Description
35   Integrated Word/Excel project
35   Excel solver assignment
30   Exam

Feedback methods
- Practice multiple choice test.
- Feedback in classes.
- Office hours.
- Revision sessions.
- Discussion boards.

Requisites
NONE

Available as free choice?   Y

Applied Economics

ECON 10162

Credit rating 10
ECTS credits 5

Semester 2

Unit coordinator: Akos Valentinyi

School of Social Sciences
Economics
Undergraduate   **Level 1**

FHEQ level ' First part HE study/Bachelors'

Marketing course unit overview

Course unit overview

The course will provide an introduction how economists use statistics and econometrics to test and interpret economic theories. The aim is to allow students to perform economic analysis using real-world data and standard statistical packages. This will help prepare students for more advanced courses in econometrics and applied economics.

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Aims

The aim of this module is to introduce students to the tools and techniques used in economics as a practical discipline. The course will provide an introduction to the ways in which economists use statistics and econometrics to test and interpret economic theories. The aim is to allow students to perform economic analysis using real-world data and standard statistical packages. This will help prepare students for more advanced courses in econometrics and applied economics.

Learning outcomes

Students will learn how to:
1. Develop empirically testable hypotheses from economic theory.
2. Manipulate data in order to test interesting economic hypotheses.
3. Apply basic econometric methods to data.
4. Interpret empirical results derived from applying econometric methods to data.
5. Understand some of the limitations and potential pitfalls of empirical work in economics.

Employability skills

Group/team working

Oral communication

Problem solving

Research

Syllabus

The course will cover the structure of data, basic statistical methods, Ordinary Least Squares, hypothesis testing and other relevant statistical methods. A strong emphasis will be placed on the theoretical foundations of applied work and the interpretation that can be given to estimated coefficients. We will look at issues around various economic topics, such as:

- Cross Country Poverty and Prosperity
- Geography and Development
- Behavioural and experimental methods
- Social preferences
- Environmental and resource economics
- Social inequality (e.g., gender)

Teaching and learning methods

Lectures and exercise classes.

Assessment methods

Weight   Description
25   Written project
60   Exam
15   Mid-term test

Feedback methods

- Online quizzes.
- Tutorials classes.
- Office hours
- Discussion boards.

Requisites

NONE

Available as free choice?   N

Recommended reading

The course will primarily draw on **"Naked Statistics" by Charles Wheelan** (any edition will suffice).

May also refer to other textbooks, such as:

- Wooldridge, J.M. (2013) Introductory Econometrics: A Modern Approach (University of Manchester custom edition).

Microeconomic Analysis 1

ECON 10171

Credit rating 10
ECTS credits 5

Unit coordinator: Craig Webb

Semester 1

School of Social Sciences
Undergraduate

Level 1

FHEQ level ' First part HE study/Bachelors'

Marketing course unit overview

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Course unit overview

This unit is an introduction to Microeconomic analysis with calculus. Topics include consumer theory, demand analysis, consumer welfare analysis, and the theory of the firm.

Aims

This unit aims to:
1. Provide an introduction to fundamental concepts and techniques of microeconomics analysis.
2. Cover the preparatory material for more specialist courses in economics in the second and third year.
3. Provide key employability skills, such as the ability to describe recent key microeconomic concepts and expose students to a range of applications.

Learning outcomes

The learning outcomes of this unit are:
1. To have a firm grounding in introductory microeconomics principles.
2. To be able to manipulate and perform basic analysis of economic data relating to issues of contemporary importance.
3. Demonstrate an understanding of key theoretical explanations of individual, firm and industry behaviour.

Employability skills

Analytical skills	Skills of analysis, and the application of analytical models. The evaluation and critical analysis of arguments, theories and policies. To be able to synthesise and evaluate data.
Group/team working	Working in teams and presenting team work.
Problem solving	
Other	To be able to independently locate and assess relevant

literature, and to draw on these to develop understanding and to construct arguments. Application of subject knowledge. Time management and ability to work to deadlines.

Syllabus
1. Introduction: Microeconomics -Allocation of scarce resources, Models, Uses of microeconomic models.
2. Supply and Demand - Demand, Supply, Market equilibrium, Shocking the equilibrium, Comparative statistics, Elasticities.
3. Consumer Theory -Preferences, Utility, Budget constraints, Constraint Consumer Choice, Behavioural economics.
4. Demand -Deriving demand curves, Effects on demand.
5. Consumer Welfare and Policy Analysis - Consumer Welfare, Expenditure functions, Consumer Surplus.
6. Firms and Production - Short run productions, Long run productions, Isoquants, Returns to Scale.
7. Costs - Opportunity Costs, Short run costs, Long run costs, Cost curves.

Teaching and learning methods
Lectures and tutorial/exercise classes, independent study, group learning and online learning.

Assessment methods
Weight   Description
70   Exam
30   Mid-term test

Feedback methods
- Weekly problem sets: feedback on solutions in tutorials.
- Feedback on presentations in tutorials.
- Office hours.
- Revision sessions.
- Discussion boards.

Requisites
A Level Maths

Available as free choice?   N

Recommended reading
Jeffrey Perloff (2014) "Microeconomics with Calculus, Global Edition" (ISBN-10: 0273789988; ISBN-13: 9780273789987).

Microeconomic Analysis 2

ECON 10172/20172

Credit rating 10
ECTS credits 5

Unit coordinator: Carlo Reggiani

Semester 2

School of Social Sciences
Undergraduate

Level 1

FHEQ level ' First part HE study/Bachelors'

Marketing course unit overview

Course unit overview

To provide students with an understanding of the quantitative methods and tools that economists use and how they can be appropriately applied and interpreted. These methods and tools are used in practical and academic settings to test economic theories and measure magnitudes that are relevant for economic policy analysis and other decisions. These methods are a key element of the professional training an economist; they will provide a foundation for subsequent study of applied and quantitative topics and are useful in many careers in economics. The course aims to equip students with a number of core competencies including: (i) an awareness of the main empirical approach to economics, (ii) experience in the analysis and use of data and software packages as tools of quantitative and statistical analysis to answer topical economic questions, (iii) an understanding of the nature of uncertainty and methods of making inference in the presence of uncertainty.

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- have some practical experience of the application of econometric methods based on practical exercises
- have acquired the necessary skills and knowledge to be able to critically appraise work in the area of applied economics.
- have a good intuitive and theoretical grasp of the dangers, pitfalls and problems encountered in doing applied modelling.
- have the necessary background material so that they are able to go on to study more advanced and technical material in the area of econometrics.
- use the R software package to obtain basic descriptive statistics using real world data and perform introductory econometric analysis.

Aims

The aims of this course are: to provide a further introduction to the fundamental concepts and techniques of microeconomic analysis and expose students to a range of applications.

Learning outcomes
The objectives of this course are that students will be able to:
1. Have developed a solid grasp of microeconomic theory and quantitative methods.
2. Demonstrate knowledge of important areas of application.
3. Analyse and use analytical models for applications.
4. Evaluate and critically analyse microeconomic arguments, theories and policies.

Employability skills

Analytical skills	Synthesis and evaluation of data.
Problem solving	
Research	Ability to independently locate and assess relevant literature, and to draw on these in developing understanding and constructing arguments.
Other	Time management and working to deadlines.

Syllabus
A brief overview of the syllabus/topics:
- Competitive firms and markets (perfect competition, profit maximization, short and long run competition).
- General equilibrium and economic welfare (trade only, production and trade economies, efficiency and equity).
- Monopoly (profit maximization, market power and welfare, regulation).
- Pricing (price discrimination, bundling, advertising).
- Game theory (static games, dynamic games, examples and applications).
- Oligopoly models (Cournot models, Bertrand models, monopolistic competition).

Teaching and learning methods
Lectures and tutorial/exercise classes; independent study; group learning, and online learning.

Assessment methods

Weight	Description
75	Exam
10	Presentation
15	Mid-term test

Feedback methods
- Feedback in tutorials/classes.
- Office hours.

- Informal talk with the lecturer and tutor.
- Discussion board.

Requisites
ECON10171 Micro Analysis 1

Available as free choice? N

Recommended reading
Jeffrey Perloff (2014) "Microeconomics with Calculus, Global Edition" (ISBN-10: 0273789988; ISBN-13: 9780273789987). Chapters 8-14.

Macroeconomic Analysis 1

ECON 10181

Credit rating 10
ECTS credits 5

Semester 1

Unit coordinator: Xiaobing Wang

School of Social Sciences
Undergraduate

Level 1

FHEQ level ' First part HE study/Bachelors'

Marketing course unit overview

Course unit overview

To provide students with an understanding of the quantitative methods and tools that economists use and how they can be appropriately applied and interpreted. These methods and tools are used in practical and academic settings to test economic theories and measure magnitudes that are relevant for economic policy analysis and other decisions. These methods are a key element of the professional training an economist; they will provide a foundation for subsequent study of applied and quantitative topics and are useful in many careers in economics. The course aims to equip students with a number of core competencies including: (i) an awareness of the main empirical approach to economics, (ii) experience in the analysis and use of data and software packages as tools of quantitative and statistical analysis to answer topical economic questions, (iii) an understanding of the nature of uncertainty and methods of making inference in the presence of uncertainty.

The objectives of this course are that students will be able to:

- understand the main techniques of quantitative economics and econometrics, including their strengths and limitations, at a level appropriate for an economics graduate
- understand how these techniques can be applied to test economic theories and measure economic magnitudes, and have some knowledge of methods and results in selected areas of the applied economics literature
- have some practical experience of the application of econometric methods based on practical exercises
- have acquired the necessary skills and knowledge to be able to critically appraise work in the area of applied economics.
- have a good intuitive and theoretical grasp of the dangers, pitfalls and problems encountered in doing applied modelling.
- have the necessary background material so that they are able to go on to study more advanced and technical material in the area of econometrics.
- use the R software package to obtain basic descriptive statistics using real world data and perform introductory econometric analysis.

Aims

The unit aims to:
1. Provide an introduction to macroeconomics.
2. Cover the preparatory material for more specialist courses in economics in the second and third years.
3. Provide key employability skills, such as the ability to describe recent key macroeconomic events and global issues to a non-economist.

Learning outcomes
On completion of this unit successful students will be able to:
1. Have a firm grounding in introductory macroeconomic principles.
2. Be able to manipulate and perform basic analysis of economic data relating to issues of contemporary importance.

Employability skills

Analytical skills

Skills of analysis, and the application of analytical models. The evaluation and critical analysis of arguments, theories and policies. Ability to synthesise and evaluate data.

Problem solving

Other

Ability to independently locate and assess relevant literature, and to draw on these to develop understanding and to construct arguments. Time management and ability to work to deadlines.

Syllabus

- Introduction: GDP, Unemployment, Inflation
- The Goods Markets
- Financial Markets
- The IS-LM Model
- The Labour Market
- The AS-AD Model
- The Phillips Curve
- Inflation, Money Growth and Real Rate of Interest

Teaching and learning methods
Lectures and tutorial/exercise classes, independent study, group learning and online learning.

Assessment methods
Weight   Description
10   Assignments
70   Exam
20   Mid-term test

Feedback methods
- Tutorial discussion.
- Q&As.
- Office hours.
- Revision sessions.
- Ddiscussion boards.

Requisites
A Level Maths

Available as free choice?   N

Recommended reading
Olivier Blanchard, Alessia Amighini and Francesco Giavazzi, Macroeconomics: A European Perspective, 2 edition, Harlow: Pearson Education Limited, 2013.

Note that this textbook can be viewed online for free through the University library.

Macroeconomic Analysis 2

ECON 10182/20182

Credit rating 10
ECTS credits 5

Unit coordinator: Patrick Macnamara

Semester 2

School of Social Sciences
Undergraduate

Level 1

FHEQ level ' First part HE study/Bachelors'

Marketing course unit overview

Course unit overview

To provide students with an understanding of the quantitative methods and tools that economists use and how they can be appropriately applied and interpreted. These methods and tools are used in practical and academic settings to test economic theories and measure magnitudes that are relevant for economic policy analysis and other decisions. These methods are a key element of the professional training an economist; they will provide a foundation for subsequent study of applied and quantitative topics and are useful in many careers in economics. The course aims to equip students with a number of core competencies including: (i) an awareness of the main empirical approach to economics, (ii) experience in the analysis and use of data and software packages as tools of quantitative and statistical analysis to answer topical economic questions, (iii) an understanding of the nature of uncertainty and methods of making inference in the presence of uncertainty.

The objectives of this course are that students will be able to:

- understand the main techniques of quantitative economics and econometrics, including their strengths and limitations, at a level appropriate for an economics graduate
- understand how these techniques can be applied to test economic theories and measure economic magnitudes, and have some knowledge of methods and results in selected areas of the applied economics literature
- have some practical experience of the application of econometric methods based on practical exercises
- have acquired the necessary skills and knowledge to be able to critically appraise work in the area of applied economics.
- have a good intuitive and theoretical grasp of the dangers, pitfalls and problems encountered in doing applied modelling.
- have the necessary background material so that they are able to go on to study more advanced and technical material in the area of econometrics.
- use the R software package to obtain basic descriptive statistics using real world data and perform introductory econometric analysis.

Aims

This unit aims to:
1. Introduce students to macroeconomic theory and policy analysis at an intermediate level.
2. Develop critical analysis and lay the foundation for macroeconomic courses in the second and third year.
3. Provide the employability skills of describing macroeconomic events and key global issues to non-economists with confidence.
.

Learning outcomes
At the end of this course unit, it is expected that students will
Knowledge and understanding:
1. demonstrate an understanding of modern macroeconomic theory and quantitative methods to an intermediate level.
Intellectual skills:
1.
develop problem-solving skills; be able to apply analytical models; evaluate and critically analyse arguments, theories and policies; synthesize and evaluate data.
Practical skills:
1.
develop their ability to locate/process/collate data in a suitable form for analysis; develop their ability to independently locate and assess relevant literature, and to draw on these to develop understanding and to construct arguments.
Transferable skills and personal qualities:
develop their ability to communicate ideas and arguments in writing, as well as manage time and work to deadlines.

Employability skills

| Other | Students will develop knowledge and understanding, intellectual skills, transferable skills and personal qualities, and practical skills identified in the "Learning Outcomes" section. |

Syllabus
Listed below is a rough outline of the topics that will be covered in this module.
Lecture 1
nominal/real exchange rates, balance of payments, uncovered interest parity, IS-LM model in an open economy
Lecture 2
fiscal and monetary policy in the open economy IS-LM model, Marshall-Lerner condition, fixed vs flexible exchange rates
Lecture 3
medium run adjustment under fixed exchange rates, exchange rate crises under fixed exchange rates, exchange rate volatility, benefits and costs of different exchange rate regimes

Lecture 4

purchasing power parity, facts on growth across countries, Solow growth model with no population growth and no technological progress

Lecture 5

Solow growth model with technological progress and population growth

Lecture 6

present discounted values, bond prices, yield curves, relationship between short-term and long-term interest rates, arbitrage, stock prices, bubbles

Lecture 7

two-period consumption model, investment, volatility of consumption and investment

Lecture 8

expectations-augmented IS-LM model, liquidity traps, quantitative easing, budget deficits

Teaching and learning methods

Lectures and tutorial/exercise classes, independent study, group learning and online learning.

Assessment methods

Weight   Description

10   Quizes, MCQ and written throughout the term

70   Exam

20   Mid-term test

Feedback methods

- Mock mid-term exam.
- Mock final exam.
- Tutorial feedback.
- Office hours.
- Revision sessions.
- Discussion boards.

Requisites

ECON10181 Macro Analysis 1

Available as free choice?   N

Recommended reading

Olivier Blanchard, Alessia Amighini and Francesco Giavazzi, Macroeconomics: A European Perspective, 3 edition, Pearson, 2017

Introduction to Mathematical Economics

ECON 10192/20192

Unit coordinator: Christopher Wallace

Credit rating 10
ECTS credits 5

Semester 2

School of Social Sciences
Undergraduate

Level 1

FHEQ level ' First part HE study/Bachelors'

Marketing course unit overview

Course unit overview

To provide students with an understanding of the quantitative methods and tools that economists use and how they can be appropriately applied and interpreted. These methods and tools are used in practical and academic settings to test economic theories and measure magnitudes that are relevant for economic policy analysis and other decisions. These methods are a key element of the professional training an economist; they will provide a foundation for subsequent study of applied and quantitative topics and are useful in many careers in economics. The course aims to equip students with a number of core competencies including: (i) an awareness of the main empirical approach to economics, (ii) experience in the analysis and use of data and software packages as tools of quantitative and statistical analysis to answer topical economic questions, (iii) an understanding of the nature of uncertainty and methods of making inference in the presence of uncertainty.

The objectives of this course are that students will be able to:

- understand the main techniques of quantitative economics and econometrics, including their strengths and limitations, at a level appropriate for an economics graduate
- understand how these techniques can be applied to test economic theories and measure economic magnitudes, and have some knowledge of methods and results in selected areas of the applied economics literature
- have some practical experience of the application of econometric methods based on practical exercises
- have acquired the necessary skills and knowledge to be able to critically appraise work in the area of applied economics.
- have a good intuitive and theoretical grasp of the dangers, pitfalls and problems encountered in doing applied modelling.
- have the necessary background material so that they are able to go on to study more advanced and technical material in the area of econometrics.
- use the R software package to obtain basic descriptive statistics using real world data and perform introductory econometric analysis.

Aims
Prepare Students for the study of intermediate and advanced topics in Mathematical Economics. This unit is to introduce students to those mathematical techniques that are required in the study of advanced economic theory.

Learning outcomes
By the end of the course, you will:
1. Understand the concepts of proof and counter example.
2. Have expanded yourmathematical toolbox for mathematical economics.

Employability skills
Analytical skills

Problem solving

Syllabus
Sequences, limits, and sets. Open, closed, and compact sets
Continuity and differentiability
Concavity and quasi-concavity
Constrained optimization with many inequality constraints, Lagrangian methods, and applications to economics.

Teaching and learning methods
The learning and teaching process centres on two key forms of delivery, lectures, tutorials and exercise classes, and the material provided through Blackboard.

Assessment methods
Weight	Description
70	Exam
15	Coursework
15	Coursework

Feedback methods
- Tutorial feedback.
- Office hours.
- Discussion board on Blackboard.

Requisites
ECON10071 Adv Maths

Available as free choice?   Y

Recommended reading
Simon, C. and Blume, L. (2010) *Mathematics for Economists*, International Student Edition, Norton, NY.

Economic History

ECON 10212/20212

Credit rating 10
ECTS credits 5

Unit coordinator: Edward Manderson

Semester 2

School of Social Sciences
Undergraduate

Level 1

FHEQ level ' First part HE study/Bachelors'

Marketing course unit overview

Course unit overview

Aims
The unit aims to:
1. Provide an introduction to key developments in the history of economics.
2. Provide insights into how economic analysis can explain or help to understand important historic events.
3. Examine how economies have operated and functioned in the past, and consider the value of economic history today.

Learning outcomes
At the end of the course unit, it is expect that students will be able to:
1. Explain, discuss and analyse important economic developments in the past.
2. Understand the main economic mechanisms and interactions which took place during these events.
3. Understand economic behaviour within a broader context.

Intellectual skills
Students will develop skills in applying basic economic analysis in a variety of contexts.
Students will develop expertise in evaluating the experience of a diverse range of economies in a rigorous manner. These skills will help prepare students for a range of careers requiring a knowledge of economic analysis and historical change

Practical skills
Students will develop their ability to read economic literature; process and critically evaluate different sources of information; and develop a sustained and coherent

written argument.

Transferable skills and personal qualities
Students will develop presentation and interpersonal skills through participation in tutorial sessions.

Employability skills
Analytical skills

Oral communication

Research

Syllabus
Indicative overview of the syllabus/topics.
Introduction (1 lecture)
        Course overview
        Essay writing advice
History and economics (2 lectures)
Mercantilism, classical economics, and the free trade movement
Class conflict and the marginal revolution
The industrial revolution (2 lectures)
The causes debate: why then, why Britain. Role of the demographic transition, long run productivity growth, and lessons for today
Key innovations: how they happened, the role of patents, trade and skills. Changes in system of innovation over time.
History of economic depressions and recessions (2 lectures)
The Great Depression
Post war period: "les trente glorieuses", the Keynes vs monetarism debates of the 1970s and 80s, the Great Moderation
Economics in historical context (2 lectures)
The history of how economists treat environmental and resource problems from the 18 century through to its emergence as a modern discipline
Lessons of history for economics

Teaching and learning methods
Lectures and tutorial classes.

Assessment methods
Weight   Description
10   Presentation
90   Essay

Feedback methods
- Students will receive feedback from interactions in tutorials, PASS groups, office hours, and a lecture session on essay writing advice.
- Specific and general feedback will also be provided on the group presentation and final essay

Requisites
NONE

Available as free choice?   Y

Recommended reading
Roger Backhouse and Keith Tribe, The History of Economics, 2017
Roger Backhouse, The Penguin History of Economics, Penguin, 2002

Microeconomics 1

ECON 10221/10331

Credit rating 10
ECTS credits 5

Unit coordinator: Daniel Rigby

Semester 1

School of Social Sciences
Undergraduate

Level 1

FHEQ level ' First part HE study/Bachelors'

Marketing course unit overview

Course unit overview

To provide students with an understanding of the quantitative methods and tools that economists use and how they can be appropriately applied and interpreted. These methods and tools are used in practical and academic settings to test economic theories and measure magnitudes that are relevant for economic policy analysis and other decisions. These methods are a key element of the professional training an economist; they will provide a foundation for subsequent study of applied and quantitative topics and are useful in many careers in economics. The course aims to equip students with a number of core competencies including: (i) an awareness of the main empirical approach to economics, (ii) experience in the analysis and use of data and software packages as tools of quantitative and statistical analysis to answer topical economic questions, (iii) an understanding of the nature of uncertainty and methods of making inference in the presence of uncertainty.

The objectives of this course are that students will be able to:

- understand the main techniques of quantitative economics and econometrics, including their strengths and limitations, at a level appropriate for an economics graduate
- understand how these techniques can be applied to test economic theories and measure economic magnitudes, and have some knowledge of methods and results in selected areas of the applied economics literature
- have some practical experience of the application of econometric methods based on practical exercises
- have acquired the necessary skills and knowledge to be able to critically appraise work in the area of applied economics.
- have a good intuitive and theoretical grasp of the dangers, pitfalls and problems encountered in doing applied modelling.
- have the necessary background material so that they are able to go on to study more advanced and technical material in the area of econometrics.
- use the R software package to obtain basic descriptive statistics using real world data and perform introductory econometric analysis.

Aims
The aims of this course are to:
• provide a self-contained introduction to microeconomics;
• introduce a range of microeconomic concepts and analytical tools

Learning outcomes
Intended Learning Outcomes
• ability to understand and make appropriate use of core microeconomic concepts such as revenue and cost, opportunity cost, elasticities, marginal and average values
• understanding of the role and limits of markets
• understanding of the relationship between modern "neoclassical" economics and "classical" schools of economic thought
• ability to analyse the behaviour of firms

Employability skills
Analytical skills

Problem solving

Syllabus

1. **The Capitalist Revolution**
Capitalism, Growth, Demographic Transition
Core Reading: 'The Economy' Chapter 1

1. **Economic Models: Technological Change, Population & Growth**
Malthus, the Industrial Revolution, Introduction to Economic Models, the Nature of Economics
Core Reading: 'The Economy' Chapter 2

1. **Classical Economic Thought**
Smith, Ricardo, Marx

1. **The Marginal Revolution: Scarcity, Work And Choice**
Preferences, Opportunity Costs, Decision-making and scarcity
Core Reading: 'The Economy' Chapter 3

1. **Social Interactions**
Conflict, Co-operation, Institutions, Norms and Behaviour
Core Reading: 'The Economy' Chapter 4

1. **A model of the Firm and its Costs**
Production, Costs, Economies of Scale
Core Reading: 'The Economy' Chapter 7

1. **Demand Elasticity and the Firm as a Price Maker and a Price Taker.**
Demand and its Elasticity; Price-Setting, Competition & Market Power

Core Reading:
'The Economy' Chapter 7
'The Economy' Chapter 8 & 'The Economy' Chapter 11 [sections 11.1-11.3]

1. **Markets, Efficiency & Market failure**
Market Failure. Pollution, Public Goods, Open Access
resources,ImperfectInformation
Core Reading: 'The Economy' Chapter 12

Teaching and learning methods
The material is delivered via the online (Blackboard) provision of material (readings, clips) and Lectures.
The learning process of students is supported by tutorials (exercise questions and discussion based questions) and the provision of further online material (such as discussion boards and practice quizzes).

Assessment methods
Weight   Description
22.5 online test
22.5 online test
55   Essay (1500 words)

Feedback methods
Individual and group work in the tutorials, and feedback thereon.
Online practice tests on Blackboard
Discussion and feedback (from peers and staff) on Blackboard Discussion Boards
Use the 10 minute break following lectures to ask questions of the lecturer

Requisites
NONE

Available as free choice?   Y

Recommended reading
The primary textbook for this course will be:
The CORE project (2017) The Economy. Economics for a Changing World.
Oxford University Press.
See the e-book, and additional resources, at: www.core-econ.org

Microeconomics 2

Unit coordinator: Peter Backus

ECON 10232/20232

Credit rating 10
ECTS credits 5

Semester 2

School of Social Sciences
Undergraduate

Level 1

FHEQ level ' First part HE study/Bachelors'

Marketing course unit overview

Course unit overview

To provide students with an understanding of the quantitative methods and tools that economists use and how they can be appropriately applied and interpreted. These methods and tools are used in practical and academic settings to test economic theories and measure magnitudes that are relevant for economic policy analysis and other decisions. These methods are a key element of the professional training an economist; they will provide a foundation for subsequent study of applied and quantitative topics and are useful in many careers in economics. The course aims to equip students with a number of core competencies including: (i) an awareness of the main empirical approach to economics, (ii) experience in the analysis and use of data and software packages as tools of quantitative and statistical analysis to answer topical economic questions, (iii) an understanding of the nature of uncertainty and methods of making inference in the presence of uncertainty.

The objectives of this course are that students will be able to:

- understand the main techniques of quantitative economics and econometrics, including their strengths and limitations, at a level appropriate for an economics graduate
- understand how these techniques can be applied to test economic theories and measure economic magnitudes, and have some knowledge of methods and results in selected areas of the applied economics literature
- have some practical experience of the application of econometric methods based on practical exercises
- have acquired the necessary skills and knowledge to be able to critically appraise work in the area of applied economics.
- have a good intuitive and theoretical grasp of the dangers, pitfalls and problems encountered in doing applied modelling.
- have the necessary background material so that they are able to go on to study more advanced and technical material in the area of econometrics.
- use the R software package to obtain basic descriptive statistics using real world data and perform introductory econometric analysis.

Aims

This module will introduce students to the basics of industrial organization, individual decision making, the role of markets and how they fail as well as issues around the measurement and study of inequality.

Learning outcomes
Students will develop a build on the Microeconomics learned in Term 1 to more fully be able to study and discuss some of the main ideas and issues in micro.

Employability skills
Analytical skills

Oral communication

Problem solving

Syllabus
Choice Theory 2
- Revisit classic models of individual agent's decision making and newer developments allowing for agent's uncertainty and irrationality.

Understanding Markets 2: Market Failure Due to Market Conditions
- Public goods and the role of the state.
- Funding the provision of public goods with taxes.
- Efficiency loss and gain from taxation.
- The moral limits of markets.

Externalities, Under/Over Provided Goods, Social Costs
- Theory of externalities.
- Applications to (e.g. Environmental and Education policy).

Information Asymmetries
- Moral Hazard.
- Adverse selection.
- Cheap talk and Signaling.
- Applications to Public policy and information provision.

The Distribution of Gains from Markets
- Inequality and redistribution.
- Inequality.
- Measurement.
- Debates and policies.
- Normative issues: Rawls and Nozick.
- Redistribution as a public good.

Political Economy
- Power and Economic Policy.
- Institutions and development.

Teaching and learning methods
Lectures and tutorial classes.

Assessment methods
Weight   Description
55   Essay
20   Presentation
25   6 Online tests

Feedback methods
      Assessment for this module consists of three parts:
1.   Problem sets (32%)
2.   Group Presentation (18%)
3.   Take Home Final Exam (50%)

Requisites
ECON10331 Micro 1 and (ECON10061 Intro Maths or ECON10071 Adv Maths)

Available as free choice?   Y

Recommended reading
The main text for this module is CORE Economics. Students should register (it is free) at www.core-econ.org/.

Other readings will be provided on Blackboard.

Macroeconomics 1

ECON 10241
Credit rating 10
ECTS credits 5

Unit coordinator: ???

Semester 1

School of Social Sciences
Undergraduate

Level 1

FHEQ level ' First part HE study/Bachelors'

Marketing course unit overview

Course unit overview
 To provide students with an understanding of the quantitative methods and tools
 that economists use and how they can be appropriately applied and interpreted.
 These methods and tools are used in practical and academic settings to test
 economic theories and measure magnitudes that are relevant for economic policy
 analysis and other decisions. These methods are a key element of the
 professional training an economist; they will provide a foundation for subsequent
 study of applied and quantitative topics and are useful in many careers in
 economics. The course aims to equip students with a number of core
 competencies including: (i) an awareness of the main empirical approach to
 economics, (ii) experience in the analysis and use of data and software packages
 as tools of quantitative and statistical analysis to answer topical economic
 questions, (iii) an understanding of the nature of uncertainty and methods of
 making inference in the presence of uncertainty.
The objectives of this course are that students will be able to:
* understand the main techniques of quantitative economics and econometrics,
 including their strengths and limitations, at a level appropriate for an economics
 graduate
* understand how these techniques can be applied to test economic theories and
 measure economic magnitudes, and have some knowledge of methods and
 results in selected areas of the applied economics literature
* have some practical experience of the application of econometric methods
 based on practical exercises
* have acquired the necessary skills and knowledge to be able to critically
 appraise work in the area of applied economics.
* have a good intuitive and theoretical grasp of the dangers, pitfalls and
 problems encountered in doing applied modelling.
* have the necessary background material so that they are able to go on to study
 more advanced and technical material in the area of econometrics.
* use the R software package to obtain basic descriptive statistics using real
 world data and perform introductory econometric analysis.

Aims

The aims of this course are:
1. To provide a self-contained introduction to macroeconomics for general social scientists.
2. To cover the preparatory material for more specialist courses in economics in the second and third years.

Learning outcomes
- Demonstrate knowledge of the major macroeconomic issues, policy objectives and national accounts.
- Understand the concept of macroeconomic modelling and how differing approaches fit into the modern debate on pluralism in macroeconomics.
- Demonstrate a detailed understanding of the extended Keynesian income-expenditure model alongside alternative models to represent a macro-economy.
- Understand the role of the commercial and central bank in the creation of money in the economy.
- Use the models covered to analyze a variety of fiscal and monetary policy choices to derive basic normative implications.
- Demonstrate critical awareness of the exchange rate and interest rate mechanism for macroeconomic policy including pathologies such as the recent financial crisis and currency wars and Brexit (2017).

Employability skills

Analytical skills	To provide a detailed and qualified economic perspective of recent and global macroeconomic events. The ability to provide critical analysis of key macroeconomic policy choices by governments and central banks.

Syllabus
Introducing the Macroeconomic Variables Part I:
- Overview of Macroeconomics
- National Income and Economic Growth: Gross Domestic Product
- Comparing Real and Nominal GDP
- Long Run Growth and Short Run Fluctuations in Economic Activity

Introducing the Macroeconomic Variables Part II:
- Unemployment, Inflation and International Trade
- Measuring and Understanding the Components of the Labour Market
- The GDP Deflator and Consumer Price Measures of Inflation
- An Introduction to International Trade

Macroeconomic Modelling:
- Modelling the Macroeconomic Variables
- Two Baseline Models and Economic Schools of Thought: The Three Markets and the Three Agents
- The Circular Flow Model and an Overview of the Keynesian Cross and the AS/AD Model
- Introduction to Economic Policy and a Delineation for the Schools of Economic

Thought

Money and The Financial Markets:
- The Definition of Money
- The Market for Central Bank Money and Monetary Policy
- How Money is Created and the Money Multipliers
- The Theory of Liquidity Preference and Money Market Equilibrium
- The Financial Markets and the Mechanics of Monetary Policy
- An Overview of the Financial Crisis

The Market for Goods and Services:
- The Interest and Exchange Rate Channels
- Components of Gross Domestic Product and the Goods Market
- Fiscal Policy
- The Multiplier and the Crowding Out Effect
- Encompassing the Open Economy
- The Market for International Trade and the Case of Brexit (2016).

The Labour Market:
- A Static View of the Labour Market
- Equilibrium and Disequilibrium Unemployment
- An Introduction to a Dynamic View of the Labour Market and Unemployment Duration
- Introduction to the Phillips Curve and Expectations

The Aggregate Supply Aggregate Demand Model:
- Introduction to the Aggregate Supply and Aggregate Demand Model
- Short Run and Long Run Equilibrium in the AS/AD Model
- Economic Policy Analysis Using the AS/AD model
- The Financial Crisis Revisited and the State of Macroeconomics

Teaching and learning methods
The material is delivered via the online (Blackboard) provision of material (readings, clips) and lectures.
The learning process of students is supported by tutorials (exercise questions and discussion based questions) and the provision of further online material (such as discussion boards and practice quizzes).

Assessment methods
Weight   Description
80   Exam
20   Timed online test

Feedback methods
Home Works
There will be a set of exercises in a separate folder on Blackboard which will be

considered homeworks (or formative assessment). Formative assessment is 'non' compulsory, but highly recommended for your successful progression towards the final assessment. Students should complete their homeworks at home and then see a teaching assistant for feedback on their written attempt.

Feedback and help with the formative assessment can be obtained from your teaching assistant (TA) during their weekly feedback sessions. (please remember to take the written attempt of your homework with you).. See Blackboard for times and locations of feedback sessions.

Please be careful to take note of the period for which the feedback sessions run, normally up and until one week before the beginning of the examination period, and not during holiday periods.

Additional Feedback Opportunities:

After each interaction slide in the interaction lectures there will be response specific feedback given to allow you to measure your progress towards preparation for the final assessment.

Use the 10-15 minute break following lecture slots to ask questions to the lecturer on the material covered during the lecture.

Use the course twitter account @Macro1_PM to post questions about the material, course meetings and during the revision period leading up to the final assessment.

The live feed for the course twitter account will also appear on Blackboard.

Requisites
NONE

Available as free choice?   Y

Recommended reading
The Textbook for this course will be:
Paul Middleditch (2018), "**Introduction to Macroeconomics**", Pearson Ed. (Chapters 1 to 8)
Available in Blackwell's Oxford Road, next to Arthur Lewis Building.
The book should provide background reading for lectures and allow students to deepen their knowledge about topics covered or discussed in the lectures.

Macroeconomics 1

ECON 10252

Credit rating 10
ECTS credits 5

Unit coordinator: ???

Semester 2

School of Social Sciences
Undergraduate

Level 2

FHEQ level ' First part HE study/Bachelors'

Marketing course unit overview

Course unit overview

To provide students with an understanding of the quantitative methods and tools that economists use and how they can be appropriately applied and interpreted. These methods and tools are used in practical and academic settings to test economic theories and measure magnitudes that are relevant for economic policy analysis and other decisions. These methods are a key element of the professional training an economist; they will provide a foundation for subsequent study of applied and quantitative topics and are useful in many careers in economics. The course aims to equip students with a number of core competencies including: (i) an awareness of the main empirical approach to economics, (ii) experience in the analysis and use of data and software packages as tools of quantitative and statistical analysis to answer topical economic questions, (iii) an understanding of the nature of uncertainty and methods of making inference in the presence of uncertainty.

The objectives of this course are that students will be able to:

- understand the main techniques of quantitative economics and econometrics, including their strengths and limitations, at a level appropriate for an economics graduate
- understand how these techniques can be applied to test economic theories and measure economic magnitudes, and have some knowledge of methods and results in selected areas of the applied economics literature
- have some practical experience of the application of econometric methods based on practical exercises
- have acquired the necessary skills and knowledge to be able to critically appraise work in the area of applied economics.
- have a good intuitive and theoretical grasp of the dangers, pitfalls and problems encountered in doing applied modelling.
- have the necessary background material so that they are able to go on to study more advanced and technical material in the area of econometrics.
- use the R software package to obtain basic descriptive statistics using real world data and perform introductory econometric analysis.

Aims

The aims of this course are:

1. To provide a self-contained introduction to macroeconomics for general social scientists.
2. To cover the preparatory material for more specialist courses in economics in the second and third years.

Learning outcomes

- Demonstrate knowledge of the major macroeconomic issues, policy objectives and national accounts.
- Understand the concept of macroeconomic modelling and how differing approaches fit into the modern debate on pluralism in macroeconomics.
- Demonstrate a detailed understanding of the extended Keynesian income-expenditure model alongside alternative models to represent a macro-economy.
- Understand the role of the commercial and central bank in the creation of money in the economy.
- Use the models covered to analyze a variety of fiscal and monetary policy choices to derive basic normative implications.
- Demonstrate critical awareness of the exchange rate and interest rate mechanism for macroeconomic policy including pathologies such as the recent financial crisis and currency wars and Brexit (2017).

Employability skills

Analytical skills	To provide a detailed and qualified economic perspective of recent and global macroeconomic events. The ability to provide critical analysis of key macroeconomic policy choices by governments and central banks.

Syllabus

Introducing the Macroeconomic Variables Part I:

- Overview of Macroeconomics
- National Income and Economic Growth: Gross Domestic Product
- Comparing Real and Nominal GDP
- Long Run Growth and Short Run Fluctuations in Economic Activity

Introducing the Macroeconomic Variables Part II:

- Unemployment, Inflation and International Trade
- Measuring and Understanding the Components of the Labour Market
- The GDP Deflator and Consumer Price Measures of Inflation
- An Introduction to International Trade

Macroeconomic Modelling:

- Modelling the Macroeconomic Variables
- Two Baseline Models and Economic Schools of Thought: The Three Markets and the Three Agents

- The Circular Flow Model and an Overview of the Keynesian Cross and the AS/AD Model
- Introduction to Economic Policy and a Delineation for the Schools of Economic Thought

Money and The Financial Markets:
- The Definition of Money
- The Market for Central Bank Money and Monetary Policy
- How Money is Created and the Money Multipliers
- The Theory of Liquidity Preference and Money Market Equilibrium
- The Financial Markets and the Mechanics of Monetary Policy
- An Overview of the Financial Crisis

The Market for Goods and Services:
- The Interest and Exchange Rate Channels
- Components of Gross Domestic Product and the Goods Market
- Fiscal Policy
- The Multiplier and the Crowding Out Effect
- Encompassing the Open Economy
- The Market for International Trade and the Case of Brexit (2016).

The Labour Market:
- A Static View of the Labour Market
- Equilibrium and Disequilibrium Unemployment
- An Introduction to a Dynamic View of the Labour Market and Unemployment Duration
- Introduction to the Phillips Curve and Expectations

The Aggregate Supply Aggregate Demand Model:
- Introduction to the Aggregate Supply and Aggregate Demand Model
- Short Run and Long Run Equilibrium in the AS/AD Model
- Economic Policy Analysis Using the AS/AD model
- The Financial Crisis Revisited and the State of Macroeconomics

Teaching and learning methods
The material is delivered via the online (Blackboard) provision of material (readings, clips) and lectures.
The learning process of students is supported by tutorials (exercise questions and discussion based questions) and the provision of further online material (such as discussion boards and practice quizzes).

melanie.dunn@manchester.ac.uk
Assessment methods
Weight   Description
80   Exam
20   Timed online test

Feedback methods
Home Works
There will be a set of exercises in a separate folder on Blackboard which will be considered homeworks (or formative assessment). Formative assessment is 'non' compulsory, but highly recommended for your successful progression towards the final assessment. Students should complete their homeworks at home and then see a teaching assistant for feedback on their written attempt.
Feedback and help with the formative assessment can be obtained from your teaching assistant (TA) during their weekly feedback sessions. (please remember to take the written attempt of your homework with you).. See Blackboard for times and locations of feedback sessions.
Please be careful to take note of the period for which the feedback sessions run, normally up and until one week before the beginning of the examination period, and not during holiday periods.

Additional Feedback Opportunities:

After each interaction slide in the interaction lectures there will be response specific feedback given to allow you to measure your progress towards preparation for the final assessment.
Use the 10-15 minute break following lecture slots to ask questions to the lecturer on the material covered during the lecture.
Use the course twitter account @Macro1_PM to post questions about the material, course meetings and during the revision period leading up to the final assessment.
The live feed for the course twitter account will also appear on Blackboard.

Requisites
NONE

Available as free choice?   Y

Recommended reading
The Textbook for this course will be:
Paul Middleditch (2018), "**Introduction to Macroeconomics**", Pearson Ed. (Chapters 1 to 8)
Available in Blackwell's Oxford Road, next to Arthur Lewis Building.
The book should provide background reading for lectures and allow students to deepen their knowledge about topics covered or discussed in the lectures.

Macroeconomics 2

ECON 10262/20262

Credit rating 10
ECTS credits 5

Unit coordinator: Akos Valentinyi

Semester 2

School of Social Sciences
Undergraduate

Level 1

FHEQ level ' First part HE study/Bachelors'

Marketing course unit overview

Course unit overview

This course provides an introduction to long run macroeconomic issues such as why some countries so much poorer than other, what drives savings, investment and innovation in the long run. In addition, we will also study the factors that determine unemployment and inflation in the long run. The course keeps a tight connection between economic models and data as it is the feature of modern macroeconomics. To analyse the macroeconomy, we must analyse current data and real-world situations, then apply this knowledge using models and equations. The course provides the necessary tools to analyse long run macroeconomic questions.

Aims

The aims of this course are:
1. To provide a self-contained introduction to long-run macroeconomics including long run economic growth, unemployment and inflation for general social scientists.
2. To cover the preparatory material for more specialist courses in economics in the second and third years.

Learning outcomes

- Demonstrate knowledge of measuring economic growth and the major issues of long-run economic growth.
- Understand the concept of modelling economic growth and how different modelling approaches contribute to our understanding of the growth process.
- Understand how the economics of ideas as the engine of growth necessarily leads to imperfect competition between firms and create monopolies.
- Understand why some countries so much richer then others, and why some countries like China are growing much faster then others and for how long.
- Demonstrate knowledge of the major issues of long-term unemployment and inflation.
- Demonstrate a detailed understanding of the factors that determine long-term unemployment.

- Understand the quantity theory of money as the long-term determinant of inflation and the fiscal causes of high inflation.

Employability skills

Analytical skills
To provide a detailed and qualified economic perspective on economic growth in the UK and elsewhere from the perspective of a global interdependent world. The ability to provide critical analysis of policies that affect economic growth and cross-country income differences. The ability to provide critical analysis of policies that affect unemployment and inflation in the long run. To use models to interpret economic data.

Syllabus

- **An Overview of Long Run Economic Growth.** Some facts of economic growth including that it is a relatively recent phenomenon from historical point of view. How economic growth dramatically improved welfare around the world.
- **A Model of Production.** How to set up a macroeconomic model. How a production function help us to understand the differences in per capita GDP across countries. How too look at economic data through the lens of macroeconomic models.
- **The Solow Growth Model.** How capital accumulates over time helping us to understand economic growth. The role of diminishing returns to capital in explaining differences in growth rates across countries. The limitations of capital accumulation.
- **Growth and Ideas.** Why new ideas - new ways of using existing resources - are key to sustained long-run growth. Why "nonrivalry" makes ideas different from other economic goods in a crucial way. How the economics of ideas leads to monopolies. A new model of economic growth: the Romer model.
- **The Labour Market, Wages, and Unemployment.** How basic supply-and-demand model helps us to understand the labour market. How labour market distortions like taxes and firing costs affect employment in the long-run. How to value your human capital. A key fact: return to university education increased enormously over the past half century.
- **Inflation.** What inflation is and how costly it can be. How the quantity theory of money allow us to understand where inflation comes from. How nominal and real interest rates are related. The important link between fiscal policy and high inflation.

Teaching and learning methods

The material is delivered via the online (Blackboard) provision of material (readings, clips) and Lectures.

The learning process of students is supported by tutorials (exercise questions and discussion based questions) and the provision of further online material (such as discussion boards and practice quizzes).

Assessment methods

Weight   Description
75   Exam
25   Mid-term test

Feedback methods
- Mock exam.
- Tutorials feedback.
- Office hours.
- Revision sessions.
- Discussion boards.

Requisites

(ECON10241 Macro 1) and ((ECON10061 Intro Maths or ECON10071 Adv Maths) and (co-requisite SOST10062 Intro Stats or ECON10072 Adv Stats))

Available as free choice?   Y

Recommended reading
- CORE-ECON open access textbook (few selected chapters).
- Charles Jones, Macroeconomics, 4th edition (Chapter 2-8).

Microeconomics 3

ECON 20021

Credit rating 10
ECTS credits 5

Unit coordinator: Mario Pezzino

Semester 1

School of Social Sciences
Economics
Undergraduate

Level 1

FHEQ level ' Middle part of Bachelors'

Marketing course unit overview

The unit aims to provide students with a rigorous treatment of fundamental microeconomic concepts exposing the class to key economic ideas and theories motivated and explained with the regular use of real world examples.
Students will acquire a deeper and more rigorous understanding of the concepts encountered in Microeconomics 1 and Microeconomics 2. Specifically, students will be taught: (i) consumer theory; (ii) production theory and costs; (iii) perfect competition and monopoly; (iv) strategic interdependence in oligopolistic markets.

Course unit overview

The unit aims to provide students with a rigorous treatment of fundamental microeconomic concepts exposing the class to key economic ideas and theories motivated and explained with the regular use of real world examples.
Students will acquire a deeper and more rigorous understanding of the concepts encountered in Microeconomics 1 and Microeconomics 2. Specifically, students will be taught: (i) consumer theory; (ii) production theory and costs; (iii) perfect competition and monopoly; (iv) strategic interdependence in oligopolistic markets.

Aims

The unit aims to provide students with a rigorous treatment of fundamental microeconomic concepts exposing the class to key economic ideas and theories motivated and explained with the regular use of real world examples.

Learning outcomes

Students will acquire a deeper and more rigorous understanding of the concepts encountered in Microeconomics 1 and Microeconomics 2. Specifically, students will be taught: (i) consumer theory; (ii) production theory and costs; (iii) perfect competition and monopoly; (iv) strategic interdependence in oligopolistic markets.

Knowledge and understanding

Microeconomic theory accompanied by real world applications

Intellectual skills
independent study; critical thinking;

Practical skills
mathematical skills, writing on technical economic concepts, use of word processing software

Transferable skills and personal qualities
problem solving; analysis and synthesis; students will develop presentation and interpersonal skills through participation in tutorial sessions.

Syllabus
Brief overview of the syllabus/topics.
Consumer Theory

- utility functions and constrained maximisation;
- demand functions and elasticity

2.

Production Theory

- production functions; short run - long run production decisions;
- cost functions; supply functions

3.

Perfect Competition and Monopoly

- short run - long run under perfect competition;
- monopoly equilibrium; natural monopoly; welfare analysis

4.

Oligopoly

- elements of game theory

  Bertrand, Cournot, Stackelberg models; monopolistic competition; price leadership

Assessment methods
Other	20%
Written exam	80%

Feedback methods
Online quizzes released on Blackboard
Feedback will also be provided during tutorial classes, on the Discussion Board

(Piazza) and during office hours.

Requisites

ECON10061	Introductory Mathematics	Pre-Requisite	Compulsory
ECON10071	Advanced Mathematics	Pre-Requisite	Compulsory
ECON10232	Microeconomics 2	Pre-Requisite	Compulsory

ECON20021 Prerequisite -
P: ECON10232 AND one of either P: ECON10071 OR ECON10061

Recommended reading
- Bowles, Foley and Halliday, "Microeconomics: competition, conflict and coordination", forthcoming 2018, Oxford U Press
- Varian, "Intermediate Microeconomics: a modern approach", 9th Edition, 2014, Norton.

Microeconomics 4

ECON 20022/30022

Credit rating 10
ECTS credits 5

Unit coordinator: Ralf Becker

Semester 2

School of Social Sciences
Economics
Undergraduate

Level 2

FHEQ level ' Middle part of Bachelors'

Marketing course unit overview

Course unit overview

To provide students with an understanding of the quantitative methods and tools that economists use and how they can be appropriately applied and interpreted. These methods and tools are used in practical and academic settings to test economic theories and measure magnitudes that are relevant for economic policy analysis and other decisions. These methods are a key element of the professional training an economist; they will provide a foundation for subsequent study of applied and quantitative topics and are useful in many careers in economics. The course aims to equip students with a number of core competencies including: (i) an awareness of the main empirical approach to economics, (ii) experience in the analysis and use of data and software packages as tools of quantitative and statistical analysis to answer topical economic questions, (iii) an understanding of the nature of uncertainty and methods of making inference in the presence of uncertainty.

The objectives of this course are that students will be able to:

- understand the main techniques of quantitative economics and econometrics, including their strengths and limitations, at a level appropriate for an economics graduate
- understand how these techniques can be applied to test economic theories and measure economic magnitudes, and have some knowledge of methods and results in selected areas of the applied economics literature
- have some practical experience of the application of econometric methods based on practical exercises
- have acquired the necessary skills and knowledge to be able to critically appraise work in the area of applied economics.
- have a good intuitive and theoretical grasp of the dangers, pitfalls and problems encountered in doing applied modelling.
- have the necessary background material so that they are able to go on to study more advanced and technical material in the area of econometrics.
- use the R software package to obtain basic descriptive statistics using real world data and perform introductory econometric analysis.

Aims

The unit aims to provide students with a rigorous treatment of fundamental microeconomic concepts exposing the class to key economic ideas and theories motivated and explained with the regular use of real world examples.

Learning outcomes

Students will acquire a deeper and more rigorous understanding of the concepts encountered in Microeconomics 1 and Microeconomics 2. Specifically, students will be taught: (i) General Equilibrium Theory; (ii) Decision making under Uncertainty; (iii) Role of Information in Economics; (iv) Market Failures, particular focus on externality, public goods, and coordination failure and institutional responses; and (v) a brief introduction to Behavioural Economics.

Knowledge and understanding

Microeconomic theory accompanied by real world applications

Intellectual skills

independent study; critical thinking

Practical skills

mathematical skills, writing on technical economic concepts, presenting economics concepts and their applications in real world, use of word processing software

Transferable skills and personal qualities

problem solving; analysis and synthesis; students will develop presentation and interpersonal skills through participation in tutorial sessions and presenting a given topic related to microeconomics in the form of oral/poster presentation.

Syllabus

Brief overview of the syllabus/topics.
General Equilibrium and Economic Welfare

a. General Equilibrium: feedback between competitive markets
b. Endowment and mutually beneficial trades
c. Competitive Exchange and comparative advantage
d. Efficiency and Equity

2.

Uncertainty

a. Decision Making under Uncertainty: Expected Utility Theory
b. Risk preferences

c. Investing under Uncertainty: Insurance

3.

Information

a. Asymmetric Information and Adverse Selection
b. Moral Hazards
c. Contracts

4.

Market Failure

a. Coordination Failure and Institutional Responses
b. Externality
c. Public Good

5.

Behavioural Economics

a. Behavioural Economics of Risk: Prospect Theory

   Social Preferences

   Assessment methods
   Weight   Description
   80   exam
   20   Presentation

   Feedback methods

   - Online quizzes released on Blackboard and tutorials
   - Feedback: during tutorial classes, on the Discussion Board, and during office hour

   Requisites
   ECON20021 Micro 3 and (ECON10071 Adv Maths or ECON20071 Adv Maths)

   Available as free choice?   Y

   Recommended reading
   Varian, "Intermediate Microeconomics: a modern approach", 9 Edition, 2014, Norton.

Macroeconomics 3

ECON 20031/30031

Credit rating 10
ECTS credits 5

Unit coordinator: Paul Middleditch

Semester 1

School of Social Sciences
Economics
Undergraduate

Level 2

FHEQ level ' Middle part of Bachelors'

Marketing course unit overview

Course unit overview

To provide students with an understanding of the quantitative methods and tools that economists use and how they can be appropriately applied and interpreted. These methods and tools are used in practical and academic settings to test economic theories and measure magnitudes that are relevant for economic policy analysis and other decisions. These methods are a key element of the professional training an economist; they will provide a foundation for subsequent study of applied and quantitative topics and are useful in many careers in economics. The course aims to equip students with a number of core competencies including: (i) an awareness of the main empirical approach to economics, (ii) experience in the analysis and use of data and software packages as tools of quantitative and statistical analysis to answer topical economic questions, (iii) an understanding of the nature of uncertainty and methods of making inference in the presence of uncertainty.

The objectives of this course are that students will be able to:

- understand the main techniques of quantitative economics and econometrics, including their strengths and limitations, at a level appropriate for an economics graduate
- understand how these techniques can be applied to test economic theories and measure economic magnitudes, and have some knowledge of methods and results in selected areas of the applied economics literature
- have some practical experience of the application of econometric methods based on practical exercises
- have acquired the necessary skills and knowledge to be able to critically appraise work in the area of applied economics.
- have a good intuitive and theoretical grasp of the dangers, pitfalls and problems encountered in doing applied modelling.
- have the necessary background material so that they are able to go on to study more advanced and technical material in the area of econometrics.
- use the R software package to obtain basic descriptive statistics using real world data and perform introductory econometric analysis.

Aims

The aims of this unit are to: (i) to introduce students to macroeconomic theory and policy analysis at an intermediate level; (ii) to develop critical analysis and lay the foundation for economics courses in the final year (iii) to provide the employability skills of describing macroeconomic events and key global issues to non-economists with confidence.

Intellectual skills

(i) problem-solving skills; (ii) the application of analytical models; (iii) the evaluation and critical analysis of arguments, theories and economic policy choices.

Practical skills

(i) assess time series data and draw some macroeconomic perspective and narrative. (ii) comment on economic events and inter-relations between key macro variables.

Transferable skills and personal qualities

(i) select and deploy relevant information from macroeconomic time series data; (ii) communicate ideas and arguments in writing making used of standard macroeconomic model predictions; (iii) apply skills of critical analysis and interpretation.

Syllabus

1. *The Data of Macroeconomics: Movements and Inter-Relations between Macroeconomic Variables; National Income, Unemployment, Inflation, the Balance of Payments and the Interest Rate.*

1. *A Flexible Price Model: The Determination of Aggregate Income, the Role of the Factors of Production, and the Effectiveness of Macroeconomic Policy, Under the Assumption of Flexible Prices.*

1. *Money and The Financial Markets: Monetary Policy, Bond Markets and Interest Rates, Endogenous Money and Monetary Policy Enactment, Financial Innovations and the Financial Crisis.*

1. *The Market for Goods and Services. The Market for Loanable Funds Approach to The Goods Market, Fiscal Policy and Government Debt, Fiscal Multipliers, Open Economy in the Loanable Funds Market. A Heterodox Approach to Macroeconomic Stabilization Policy*

1. *IS/LM Part I: Building the IS/LM model. The Keynesian Cross and the Investment Savings Schedule, The Money Market and the Liquidity Money Schedule.*

1. *IS/LM Part I: Applying the IS/LM model. Using the IS/LM for Economic Policy Analysis, Comparative Statics and the Financial Crisis Revisited.*

1. *The Open Economy IS/LM/BP Model, Using the IS/LM/BP to Understand Trade Policy. Fixed Exchange Rate Regimes, Floating Exchange Rates and Currency Wars.*

Assessment methods
Weight   Description
80   Exam
20   Mid term test

Feedback methods
Homeworks
There will be a set of exercises in a separate folder on Blackboard which will be considered homeworks (formative assessment). Formative assessment is 'non' compulsory, but highly recommended for your successful progression towards the final assessment. Students should complete their homeworks at home and then see a teaching assistant for feedback on their written attempt.
Feedback and help with the formative assessment can be obtained from your teaching assistant during advertised weekly feedback sessions. (please remember to take the written attempt of your homework with you). See Blackboard for times and locations of feedback sessions.

Additional Feedback Opportunities:

After each interaction slide in the interaction lectures there will be response specific feedback given to allow you to measure your progress towards preparation for the final assessment.
Use the 10-15 minute break following lecture slots to ask questions to the lecturer on the material covered during the lecture.
Use the course twitter account @Macro3_PM to post questions about the material, course meetings and during the revision period leading up to the final assessment. The live feed for the course twitter account will also appear on Blackboard.

Requisites
ECON10262 Macro 2

Available as free choice?   Y

Recommended reading
The Textbooks for this course will be:
• Gregory Mankiw (2013), "**Macroeconomics**" Palgrave Macmillan
(Chapters 1,2,3,11,12)

• Paul Middleditch (2018), "**Introduction to Macroeconomics**", Pearson Education.
(Chapters 1,3,4,6,8)

Environmental Economics IIA

ECON 20101

Credit rating 10
ECTS credits 5

Unit coordinator: Daniel Rigby
Unit coordinator: Hei Sing Chan

Semester 1

School of Social Sciences
Economics
Undergraduate

Level 2

FHEQ level ' Middle part of Bachelors'

Marketing course unit overview

The aims of this course are to explore the use of economic analysis to investigate the causes, consequences and possible solutions to problems associated with degradation of environmental resources and the potential unsustainability of certain types of economic activities.

At the end of the course unit, students will be able to understand and explain:

1. how neoclassical economics conceptualises environmental problems in terms of market failure;
2. the theory and practice of valuing, in monetary terms, changes in the stock and flow of environmental resources and use of such values in cost-benefit analysis;
3. the economics of alternative approaches to regulating local and global pollution such as direct controls, green taxes, subsidies, marketable pollution permits and voluntary agreements;
4. key concepts of climate-economy models and its use on informing policy designs

Course unit overview

The aims of this course are to explore the use of economic analysis to investigate the causes, consequences and possible solutions to problems associated with degradation of environmental resources and the potential unsustainability of certain types of economic activities.

At the end of the course unit, students will be able to understand and explain:

1. how neoclassical economics conceptualises environmental problems in terms of market failure;
2. the theory and practice of valuing, in monetary terms, changes in the stock and flow of environmental resources and use of such values in cost-benefit analysis;
3. the economics of alternative approaches to regulating local and global pollution such as direct controls, green taxes, subsidies, marketable pollution permits and voluntary agreements;
4. key concepts of climate-economy models and its use on informing policy designs

Aims
The aim of this module is to explore the use of economic analysis to investigate the causes, consequences and possible solutions to problems associated with degradation of environmental resources and the potential unsustainability of certain types of economic activities.

Learning outcomes
At the end of the course unit, students will be able to understand and explain:
1. how neoclassical economics conceptualises environmental problems in terms of market failure;
2. the theory and practice of valuing, in monetary terms, changes in the stock and flow of environmental resources and use of such values in cost-benefit analysis;
3. the economics of alternative approaches to regulating local and global pollution such as direct controls, green taxes, subsidies, marketable pollution permits and voluntary agreements;
4. key concepts of climate-economy models and its use on informing policy designs

Employability skills
Analytical skills

Problem solving

Syllabus
Topic 1: Economics of Environmental Problems
Topic 2: Environmental Valuation and Cost-Benefit Analysis
Topic 3: Environmental Regulation and Pollution Control
Topic 4: Energy and Climate Change

Teaching and learning methods
Lectures and tutorial classes.

Assessment methods

Weight	Description
20	Lab test
20	Lab test
60	Essay

Feedback methods
- Tutorial feedback.
- Office hours.

- Revision sessions.

Requisites
(ECON10331 Micro 1 or ECON10221 Micro 1 or ECON10171 Micro Analysis 1)
and (ECON10061 Intro Maths or ECON10071 Adv Maths)

Available as free choice? Y

Recommended reading

List of books:
Hanley, Nick, Jason Shogren and Ben White. (2013) Introduction to Environmental
Economics, Second Edition, Oxford University Press. [HSW]
Keohane, Nathaniel O. and Sheila M. Olmstead. (2016) Markets and the
Environment, Second Edition, Island Press. [KO]
Perman, Roger, Yue Ma, Michael Common, David Maddison and James McGilvray.
(2011) Natural Resource and Environmental Economics, Fourth Edition, Addison
Wesley. Or earlier editions [P]
Tietenberg, Tom and Lynne Lewis. (2014) Environmental Economics and Policy,
Sixth Edition, Pearson. [TL]
Edwards-Jones, G, Davies, B and S.Hussain (2000) Ecological Economics: An
Introduction. Blackwell Science. [EJDH]

Reading by topic - * denotes required readings.
Topic 1: Economics of Environmental Problems
Accessible Introductions:
*HSW Ch1 [sections 1.1 -1.2], Ch2
*KO Ch.2, 4, 5
Technical Core:
*Perman
Ch. 4 'Welfare economics and the environment', or equivalent in earlier editions of
the book, eg Ch 5 in 3rd Edition:
Part I Efficiency and optimality
4.1 Economic efficiency
4.2 An efficient allocation of resources is not unique
4.3 The social welfare function and optimality
Part II Allocation in a market economy
4.5 Efficiency given ideal conditions
4.6 Partial equilibrium analysis of market efficiency
4.7 Market allocations are not necessarily equitable
Part III Market failure, public policy and the environment:
4.8 The existence of markets for environmental services
4.9 Public goods
Topic 2: Environmental Valuation and Cost-Benefit Analysis
Valuation:
*HSW Ch.3, Ch.4
*P Ch12 'Valuing the Environment' (or equivalent in earlier editions of the book)
EJDH Ch. 6.
KO Ch.3

Hanley, N and E. Barbier (2009) Pricing Nature. Cost-Benefit Analysis and Environmental Policy. Edward Elgar. Chapters 3-6 (they cover different types of valuation approach, so read accordingly)

Bateman, I et al (2002) "Economic Valuation with Stated Preference Techniques: A Manual" UK Dept for Transport/ Edward Elgar. An accessible "how to" guide which also explains the methods very clearly.

Cost-Benefit Analysis:

*EJDH Ch. 8.

*P Ch11 'Cost-benefit analysis' (or equivalent in earlier editions of the book)

Hanley, N and E. Barbier (2009) Pricing Nature. Cost-Benefit Analysis and Environmental Policy. Edward Elgar. Chapters 2, 7, 13

KO Ch.3

Topic 3: Environmental Regulation and Pollution Control

*KO Ch.8-10

HSW Ch.2.3

TL Ch.14-15

P Ch.5-6

Ellerman, A. Denny, Claudio Marcantonini and Aleksandar Zaklan. (2016). "The European Union Emissions Trading System: Ten Years and Counting."Review of Environmental Economics and Policy, 10(1): 89-107.

Goulder, Lawrence H. (2013). "Markets for Pollution Allowances: What Are the (New) Lessons?" Journal of Economic Perspectives, 27(1), pp.87-102.

Muller, Nicholas Z. and Robert Mendelsohn. (2009). "Efficient Pollution Regulation: Getting the

Econometrics

ECON 20110
Credit rating 20
ECTS credits 10

Unit coordinator: James Lincoln

Full year

School of Social Sciences
Economics
Undergraduate

Level 2

FHEQ level ' Middle part of Bachelors'

Marketing course unit overview

Course unit overview

To provide students with an understanding of the quantitative methods and tools that economists use and how they can be appropriately applied and interpreted. These methods and tools are used in practical and academic settings to test economic theories and measure magnitudes that are relevant for economic policy analysis and other decisions. These methods are a key element of the professional training an economist; they will provide a foundation for subsequent study of applied and quantitative topics and are useful in many careers in economics. The course aims to equip students with a number of core competencies including: (i) an awareness of the main empirical approach to economics, (ii) experience in the analysis and use of data and software packages as tools of quantitative and statistical analysis to answer topical economic questions, (iii) an understanding of the nature of uncertainty and methods of making inference in the presence of uncertainty.

The objectives of this course are that students will be able to:
- understand the main techniques of quantitative economics and econometrics, including their strengths and limitations, at a level appropriate for an economics graduate
- understand how these techniques can be applied to test economic theories and measure economic magnitudes, and have some knowledge of methods and results in selected areas of the applied economics literature
- have some practical experience of the application of econometric methods based on practical exercises
- have acquired the necessary skills and knowledge to be able to critically appraise work in the area of applied economics.
- have a good intuitive and theoretical grasp of the dangers, pitfalls and problems encountered in doing applied modelling.
- have the necessary background material so that they are able to go on to study more advanced and technical material in the area of econometrics.
- use the R software package to obtain basic descriptive statistics using real world data and perform introductory econometric analysis.

Aims

The aims of this course are:

1. To provide students with an understanding of the quantitative methods and tools that economists use and how they can be appropriately applied and interpreted. These methods and tools are used in practical and academic settings to test economic theories and measure magnitudes that are relevant for economic policy analysis and other decisions. These methods are a key element of the professional training an economist; they will provide a foundation for subsequent study of applied and quantitative topics and are useful in many careers in economics.

2. The course aims to equip students with a number of core competencies including: (i) an awareness of the main empirical approach to economics, (ii) experience in the analysis and use of data and software packages as tools of quantitative and statistical analysis to answer topical economic questions, (iii) an understanding of the nature of uncertainty and methods of making inference in the presence of uncertainty.

Learning outcomes

The objectives of this course are that students will be able to:

- understand the main techniques of quantitative economics and econometrics, including their strengths and limitations, at a level appropriate for an economics graduate
- understand how these techniques can be applied to test economic theories and measure economic magnitudes, and have some knowledge of methods and results in selected areas of the applied economics literature
- have some practical experience of the application of econometric methods based on practical exercises
- have acquired the necessary skills and knowledge to be able to critically appraise work in the area of applied economics.
- have a good intuitive and theoretical grasp of the dangers, pitfalls and problems encountered in doing applied modelling.
- have the necessary background material so that they are able to go on to study more advanced and technical material in the area of econometrics.

use the R software package to obtain basic descriptive statistics using real world data and perform introductory econometric analysis.

Employability skills

Analytical skills	Ability to analyse and interpret quantitative data.
Other	A fluency in using IT/computers for statistical research (programming skills).

Syllabus

This course will introduce students to the theory and practice of econometric analysis. Each week part of the lectures will focus on the theoretical underpinnings of econometric analysis, and the remaining part of the lectures and associated example and computer sessions will focus on the practice and application of these ideas, with the aim of providing students with practical and intuitive real world applications of the theory.

- similar linear regression models

- multiple regression analysis
- inference
- functional form and dummy variables
- parameter properties
- asymptotic inference
- omitted variable bias
- instrumental variables
- introduction to panel data
- time-series data and time-series modelling
- heteroscedasticity
- autocorrelation
- structural breaks
- binary dependent variable models
- maximum likelihood
- Bayesian inference

Teaching and learning methods
Lectures and exercise classes.

Assessment methods

Weight	Description
5	Sem 1 Online quizzes x4
5	Sem 2 Online quizzes x4
35	Sem 1 Exam
35	Sem 2 Exam
10	Sem 1 Mid term
10	Sem 2 Mid term

Feedback methods
- Weekly online quizzes
- Tutorial feedback.
- PASS groups.
- Office hours.
- Revision sessions.
- Discussion boards.

Requisites
ECON10071 Adv Maths and ECON10072 Adv Stats

Available as free choice?　Y

Recommended reading
The main textbook for this course is:
Wooldridge, J.M. (2013) Introductory Econometrics: A Modern Approach, 5th ed.,
Cengage (If you can get hold of the 4th edition that is absolutely sufficient.)
Note: **You do not need to buy this book. The following book is available for FREE as a digital download via the University Library (further details will be**

on the course website),

Econometrics, 2 Custom Edition for The University of Manchester, compiled by Andrews, Becker, Golan and Lincoln. ISBN 9781473759565.

This book contains the entire Wooldridge book and some additional chapters on the statistical basis we expect you know. It is also available for less than half the price of the Wooldridge book. It can be purchased from the Blackwells Bookshop.

Mathematical Economics I

ECON 20120
Credit rating 20
ECTS credits 10

Full year

Unit coordinator: Klaus Schenk-Hoppé

School of Social Sciences
Economics
Undergraduate

Level 2

FHEQ level ' Middle part of Bachelors'

Marketing course unit overview

Course unit overview

Economics has made a huge jump forward when it became a more formal science. In particular when economics started to formulate its models using mathematics and to use mathematical tools to solve these models.

This is what the course is about: Mathematical Modelling and Analysis. Both of which constitute core skills of economists. The course unit develops students' knowledge of mathematical and quantitative methods in the context of consumer theory, the theory of the firm, game theory and other subjects.

You will learn how to express an economic idea in mathematical terms. In addition you will learn mathematical methods how to find equilibria, and how to analyse the behaviour of equilibria when exogenous circumstances change. The techniques you will learn on this course are used in almost all branches of economics. The course content is really a universal (mathematical) toolbox for economic modelling.

Although we will look into economic applications, this course is not about learning new economics. You will further your knowledge of economics in the micro, macro, development, etc. economics courses.

The objectives of this course are that students will be able to:
- solve economic optimization problems;
- apply duality theory to construct expenditure and demand functions
- understand and apply methods of comparative statics
- solve simple games, including duopoly games
- solve economic models involving first order one-dimensional and two-dimensional difference equations
- solve economic models involving first order one and two-dimensional differential equations.

Aims
The aim of this course is to develop students' knowledge of the analytical and mathematical techniques used in static and dynamic economic theory.

Learning outcomes
At the end of this course students should be able to:
- solve economic optimization problems;
- apply duality theory to construct expenditure and demand functions
- understand and apply methods of comparative statics
- solve simple games, including duopoly games
- solve economic models involving first order one-dimensional and two-dimensional difference equations
- solve economic models involving first order one and two-dimensional differential equations.

Employability skills

This course help students develop and sharpen the following skills:
a) Intellectual: Critical thinking, Problem solving, Problem posing, conducting and reporting on research, Critical reflection and evaluation, decision-Making.
b) Practical skills: Ability to conduct rigorous analysis of problems, Planning independent research, Mapping and modelling, Peer review.
c) Transferable skills: Applying Subject Knowledge, Research.

Syllabus
<u>Semester 1</u>:
- What is Mathematical Economics about? Learning goals

- Preferences and utility

- Review of (constrained) optimisation

- Incentives and their applications

- Implicit Function Theorem and its applications in micro- and macroeconomics

- Demand theory

- Summary and review

<u>Semester 2</u>:
This part of the course covers Game Theory and Dynamic Systems.

I Game Theory
IA *Static Games*:
-Definition of games, games in normal and strategic forms
-Solution concepts, best responses, Nash equilibrium with pure strategies
-Mixed strategies, Nash equilibrium with mixed strategies, existence of Nash equilibrium
-Applications in economics, Cournot and Bertrand duopoly/oligopoly as a game
IB *Dynamic Games*:
-Game trees, games in extensive form, sequential move, multistage and repeated games
-Solution concepts for dynamic games, subgames, subgame perfection, refinements of Nash equilibrium, subgame perfect Nash equilibrium
-Applications in economics, duopoly/oligopoly with sequential moves, Stackelberg duopoly, investment/capacity decisions and other examples from industrial organization

II Dynamic systems
IIA *Discrete time*:
-First order linear difference equations, steady state, stability and solutions
-Applications in economics, market stability
-First order linear systems of difference equations, steady state, stability and solutions
-Cyclicality of solutions
-Applications in economics, the linear first order macroeconomic model, Samuelson's accelerator model, dynamic Cournot duopoly.
IIB *Continuous time*:
-First order linear differential equations, steady state, stability and solutions
-Applications in economics, the Philips curve
-First order linear systems of differential equations, steady state, stability and solutions
-Cyclicality of solutions
-Applications in economics,dynamic Cournot duopoly in continuous time, continuous time macroeconomic model

Teaching and learning methods
Lectures and tutorial classes.

Assessment methods

Weight	Description
35	S1 Exam
40	S2 Exam
15	5 x online tests (worth 3% each)
10	Mid-term test

Feedback methods
• Tutorial exercises.
• Online tests.

Requisites
ECON10071 Adv Maths and ECON10192 Intro Math Econ

Available as free choice?   Y

Recommended reading
Semester 1:
Reading: Detailed lecture notes are available on Blackboard (one chapter for each hour of lecture). Please read the relevant chapter BEFORE each lecture.
Reading list: The following textbooks are useful references for the material covered during the semester:

*   Hammond, P., and K. Sydsæter, *Mathematics for Economic Analysis*, Prentice Hall, 1995
*   Sydsæter, K., Hammond, P., Seierstad, A. and Strom, A., Further Mathematics for Economic Analysis, Prentice Hall (now in its second edition).
*   Sydsæter, K., Hammond, P., and Strom, A., Essential Mathematics for Economic Analysis, Prentice Hall (now in its fourth edition)
*   Simon, C.P. and Blume, L.E., Mathematics for Economists, W.W. Norton (paperback and hard cover)
*   Jehle, J., and P. Reny, *Advanced Microeconomic Theory*, Addison Wesley, 2 ed., 2000.
*   Nicholson, W., *Microeconomic Theory*, 9 ed., 2005.
*   Rubinstein, A, *Lecture Notes in Microeconomic Theory, Princeton University Press, 2 ed., 2002*

Prerequisite: The students are expected to have a good knowledge of calculus. Among required topics: partial derivatives, the chain rule in several variables, static optimization, etc. Those who feel insecure with the above material (although this is taught in the prerequisite maths modules) should revise it before taking the module. The book of Hammond and Sydsæter "essential mathematics for economic analysis" as well as the advance mathematics unit textbook may serve as good references. Students are expected to revise the mentioned material before semester 1 starts.
Weekly preparation: (1) Read the handout, (2) solve the exercise questions, (3) read the textbook as instructed in the handouts.

Semester 2:
Sets of notes along with exercise sets will be made available on the course website. Further suggested readings are mentioned within those notes. Answers to exercises will be covered during example classes (but WILL NOT be made available by the lecturer). A useful reference for some of the material that will be covered is:

*   *Hammond, P., and K. Sydsæter, Mathematics for Economic Analysis, Prentice Hall, 1995.*

Hal R. Varian, Intermediate Microeconomics a Modern Approach, 8 edition, Norton 2010.

Quantitative Methods

ECON 20222

Credit rating 20
ECTS credits 10

Unit coordinator: Martyn Andrews
Unit coordinator: Ralf Becker

Semester 2

School of Social Sciences
Economics
Undergraduate

Level 2

FHEQ level ' Middle part of Bachelors'

Marketing course unit overview

The aims of this unit are to:

The general purpose of this course is to provide students with a non-technical introduction to the basic methods of econometrics. The focus will be on:

1. enabling students to perform basic data handling (uploading, re-categorising, cleaning) in a statistical software and to implement the statistical techniques taught in the course in that software;
2. giving students a basic understanding and working knowledge of multivariate regression;
3. developing students' understanding of the potential outcomes framework and its implications for drawing causal inference;
4. developing students' understanding of popular techniques of establishing causal relationships;
5. understanding issues arising from non-stationary time-series and gain a beginning understanding of time-series modelling and forecasting

linking the teaching of techniques to real-life problems

Knowledge and Understanding:

At the end of this course students should be able to:

*   Understand how the use of statistics and econometrics can inform substantive discussion
*   Have obtained a firm understanding of summary statistics
*   Understand the basic tenants of regression analysis
*   Understand issues arising from non-stationary time-series
*   Understand the difficulties in establishing causal relationships
*   Understand popular techniques of establishing causal relationships
*   Be able to handle complex dataset and perform basic data-cleaning tasks

Be able to perform statistical analysis in a software package (R)

Course unit overview

The aims of this unit are to:

The general purpose of this course is to provide students with a non-technical introduction to the basic methods of econometrics. The focus will be on:

1. enabling students to perform basic data handling (uploading, re-categorising, cleaning) in a statistical software and to implement the statistical techniques

taught in the course in that software;
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4. developing students' understanding of popular techniques of establishing causal relationships;
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linking the teaching of techniques to real-life problems

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- Understand the difficulties in establishing causal relationships
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Be able to perform statistical analysis in a software package (R)

Aims

The aims of this unit are to:

The general purpose of this course is to provide students with a non-technical introduction to the basic methods of econometrics. The focus will be on:
1. enabling students to perform basic data handling (uploading, re-categorising, cleaning) in a statistical software and to implement the statistical techniques taught in the course in that software;
2. giving students a basic understanding and working knowledge of multivariate regression;
3. developing students' understanding of the potential outcomes framework and its implications for drawing causal inference;
4. developing students' understanding of popular techniques of establishing causal relationships;
5. understanding issues arising from non-stationary time-series and gain a beginning understanding of time-series modelling and forecasting

linking the teaching of techniques to real-life problems

Learning outcomes

Knowledge and Understanding:

At the end of this course students should be able to:
- Understand how the use of statistics and econometrics can inform substantive discussion
- Have obtained a firm understanding of summary statistics
- Understand the basic tenants of regression analysis
- Understand issues arising from non-stationary time-series
- Understand the difficulties in establishing causal relationships

- Understand popular techniques of establishing causal relationships
- Be able to handle complex dataset and perform basic data-cleaning tasks

Be able to perform statistical analysis in a software package (R)

Intellectual skills
(i) problem-solving skills; (ii) ability to analyse and interpret empirical data; (iii) the evaluation and critical analysis of arguments, theories and policies; (iv) synthesise and evaluate data.

Practical skills
(i) ability to analyse and interpret empirical data; (ii) basic working knowledge of statistical software.

Transferable skills and personal qualities
(i) select and deploy relevant information; (ii) communicate ideas and arguments in writing and verbally; (iii) apply skills of analysis and interpretation; (iv) manage time and work to deadlines; (v) use ICT to locate, analyse, organise and communicate information (e.g. internet, on-line databases, search engines, library catalogues, spreadsheets, specialist programs, word processing and presentation software) (vi) ability to work in a small group.

Syllabus
The exact syllabus may vary and the following is indicative
Week 1 - An Introduction to R and RStudio and Summary Statistics I

Understanding the basic workings of R. Importing data. Basic data operations including summary statistics. How to fix problems.
Week 2 - An Introduction to R and RStudio and Summary Statistics II

Slicing data in different dimensions and conditional summary statistics.
Week 3 - Multivariate Regression Analysis - and Applications in R

Assumptions and resulting properties of multivariate regression analysis. Omitted variable bias.
Week 4 - Inference - and Applications in R

Basic inference problem. Test statistics and their distribution under the null hypothesis. P-values. Assumptions and robust inference (as standard!). t-tests and F-tests.
Week 5 - Causal relationships - **Selection issues and applications of regression models**

An introduction into the potential outcomes framework. Introduce selection problems (on observables and un-observables). Understanding that regression helps when selection is on observables. Mention of matching in case the linear functional form is restrictive (no application here). Selection on unobservable as the

source of difficulties.
Week 6 - Randomised Control Trials - and Applications in R

Students to help collecting data with a RCT (e.g. question on tax fairness with different priming information).
Week 7 - Panel data and Difference in Difference - and Applications in R

Cross-Section or Panel structure of data. How to use Panel data to remove time-invariant unobservables.
Week 8 - Regression discontinuity - and Applications in R (this could be dropped)
Week 9 - Correlation, Causation and non-Stationarity

Understanding the characteristics of non-stationary data. Spurious regressions.
Week 10 - Economic forecasting - Understanding the pitfalls

Use Surveys of Professional forecasters to understand variation in forecasts and uncertainty embodied in forecasts. Use AR(1) model to produce basic forecasts. Basic tenants of forecast evaluation. Evaluating forecasts for binary outcomes.

Assessment methods

    Online test (on the use of R) 10%
    End-of-Term in class MC and short answer questions 50%
    Group coursework 40%

Feedback methods
Online quizzes, Practice questions in computer and exercise classes, office hours, discussion board

Requisites

ECON10061	Introductory Mathematics	Pre-Requisite	Compulsory
SOST10062	Introductory Statistics for Economists	Pre-Requisite	Compulsory
ECON10071	Advanced Mathematics	Pre-Requisite	Compulsory
ECON10072	Advanced Statistics	Pre-Requisite	Compulsory

(ECON10071 and ECON10072) or (ECON10061 and SOST10062)

Available as free choice?   Y

Recommended reading
Joshua D. Angrist & Jörn-Steffen Pischke (2014) Mastering 'Metrics: The Path from Cause to Effect, Princeton University Press

Course ID   039306

Business Economics I

ECON 20312

Unit coordinator: Michal Krol

Credit rating 20
ECTS credits 10

Semester 2

School of Social Sciences
Economics
Undergraduate

Level 2

FHEQ level ' Middle part of Bachelors'

Marketing course unit overview

Course unit overview

To provide students with an understanding of the quantitative methods and tools that economists use and how they can be appropriately applied and interpreted. These methods and tools are used in practical and academic settings to test economic theories and measure magnitudes that are relevant for economic policy analysis and other decisions. These methods are a key element of the professional training an economist; they will provide a foundation for subsequent study of applied and quantitative topics and are useful in many careers in economics. The course aims to equip students with a number of core competencies including: (i) an awareness of the main empirical approach to economics, (ii) experience in the analysis and use of data and software packages as tools of quantitative and statistical analysis to answer topical economic questions, (iii) an understanding of the nature of uncertainty and methods of making inference in the presence of uncertainty.

The objectives of this course are that students will be able to:

- understand the main techniques of quantitative economics and econometrics, including their strengths and limitations, at a level appropriate for an economics graduate
- understand how these techniques can be applied to test economic theories and measure economic magnitudes, and have some knowledge of methods and results in selected areas of the applied economics literature
- have some practical experience of the application of econometric methods based on practical exercises
- have acquired the necessary skills and knowledge to be able to critically appraise work in the area of applied economics.
- have a good intuitive and theoretical grasp of the dangers, pitfalls and problems encountered in doing applied modelling.
- have the necessary background material so that they are able to go on to study more advanced and technical material in the area of econometrics.
- use the R software package to obtain basic descriptive statistics using real world data and perform introductory econometric analysis.

Aims
The aim of this course is to develop an understanding of the economic analysis of the behaviour of firms as business institutions and to introduce students to essential elements of competition policy and regulation.

Learning outcomes
At the end of this course students should be able to demonstrate their understanding of: (i) welfare implications of different market structures; (ii) competition policy and its implementation; (iii) different regulatory policies and their implementation.

Syllabus
Lecture 1: Introduction.
Lecture 2-4: Welfare Implications of Monopoly - Oligopoly - Perfect Competition; Price Regulation of Natural Monopoly; see supplementary reading list item (C), Sections 8.1, 8.2, 18.1 and 18.2; and (B) Chapter 12, esp. pp. 258 onwards
Lectures 5-7: Market Concentration and Collusive Behaviour; (C) Chapter 14; (A) Section 23.4; (B) Chapter 14
Lectures 8-10: Horizontal Mergers and Vertical Integration (C) Sections 15.1, 15.2, 17.1, Appendix B; (A) Chapters 18 and 19
Lectures 11-12: Revision/Mock Exam

Assessment methods

Weight	Description
70	Exam
10	Group project presented in class
10	Online test 1
10	Online test 2

Feedback methods
Students are expected to submit answers to a set of multiple-choice questions (via the course Blackboard site) before tutorials. Feedback will be provided automatically, and students who fail the test will not be able to receive feedback and model answers to the tutorial questions via Blackboard. Feedback on the group project will be provided as well.
Students will also have an opportunity to submit questions via an 'online course notebook' and receive feedback the same way, and to attend a revision mock exam session (as part of the final lecture). In addition to generic feedback given in the session, they will then have the opportunity to submit their answers electronically for individual feedback.

Requisites
(ECON10171 Micro Analysis 1 or ECON10221 Micro 1 or ECON10331 Micro 1) and (ECON10061 Intro Maths or ECON10071 Adv Maths)

Available as free choice?   Y

Recommended reading
The following readings are not compulsory, but may support your learning:
Industrial organization competition, strategy, policy / John Lipczynski, John O.S.
Wilson and John Goddard; Harlow, England ; New York : Pearson/Education 4th ed.
2013
on-line access via https://www.dawsonera.com/ (sign-in via UoM Shibboleth, then
use search)
Economics, 6th Edition (2005) by Michael Parkin
on-line access via https://www.dawsonera.com/ (sign-in via UoM Shibboleth, then
use search)
Industrial organization : markets and strategies / Paul Belleflamme, Martin Peitz,
Cambridge Univ. Press 2010

Development Economics IIA

ECON 20321

Credit rating 10
ECTS credits 5

Unit coordinator: Nicholas Weaver

Semester 1

School of Social Sciences
Economics
Undergraduate

Level 2

FHEQ level ' Middle part of Bachelors'

Marketing course unit overview

Course unit overview
To provide students with an understanding of the quantitative methods and tools that economists use and how they can be appropriately applied and interpreted. These methods and tools are used in practical and academic settings to test economic theories and measure magnitudes that are relevant for economic policy analysis and other decisions. These methods are a key element of the professional training an economist; they will provide a foundation for subsequent study of applied and quantitative topics and are useful in many careers in economics. The course aims to equip students with a number of core competencies including: (i) an awareness of the main empirical approach to economics, (ii) experience in the analysis and use of data and software packages as tools of quantitative and statistical analysis to answer topical economic questions, (iii) an understanding of the nature of uncertainty and methods of making inference in the presence of uncertainty.

The objectives of this course are that students will be able to:
- understand the main techniques of quantitative economics and econometrics, including their strengths and limitations, at a level appropriate for an economics graduate
- understand how these techniques can be applied to test economic theories and measure economic magnitudes, and have some knowledge of methods and results in selected areas of the applied economics literature
- have some practical experience of the application of econometric methods based on practical exercises
- have acquired the necessary skills and knowledge to be able to critically appraise work in the area of applied economics.
- have a good intuitive and theoretical grasp of the dangers, pitfalls and problems encountered in doing applied modelling.
- have the necessary background material so that they are able to go on to study more advanced and technical material in the area of econometrics.
- use the R software package to obtain basic descriptive statistics using real world data and perform introductory econometric analysis.

Aims
To familiarise students with models and perspectives which have been used to analyse the process of growth and structural transformation in developing economies. Some basic policy problems facing less developed countries are also introduced. A critical understanding of how different economists have analysed the development process will be expected.

Learning outcomes
At the end of this course unit it is expected that students will be able to demonstrate both an understanding of and ability to critically engage with models and perspectives which have been used to analyse the process of growth and structural transformation in developing economies. Students should also appreciate and be able to address some basic policy problems facing less developed countries. Competing perspectives are part of this course and ability to understand these and take sides in debates is expected.

Employability skills

Analytical skills   Synthesis and analysis of data and information. Critical reflection and evaluation.

Problem solving

Research   Planning, conducting and reporting on research. Undertaking academic research using library, electronic and online resources.

Syllabus
Introduction

Characteristics of Underdevelopment (C3, Thirlwall)

Basic Needs (C3, Thirlwall)

Structural Change (C3, Thirlwall)
•   Stages theories.
•   Industrialisation and Growth:Kaldor's "growth laws".
Theories of Economic Growth (C5, Thirlwall)
•   Classical Smith Ricardo Malthus and Marx.
•   Keynesian: Harrod-Domar.
•   Neo-classical/Endogenous.

Land, Labour and Agriculture (C6, Thirlwall)
•   Role of Agriculture in Development.
•   Lewis Model (and Lewis (1954)).

The Big Debate
•   Resource Allocation in Developing Countries
•   Rival views on the Role of the State and Market (C10, Thirlwall)

Teaching and learning methods
Lectures and tutorial classes.

Assessment methods
Weight   Description
100   Exam

Feedback methods
MCQs in the lecture slot and a mock exam conducted in a lecture slot towards the end of the course. The main forms of feedback on this course are the scores from the MCQs and the mock exam - responses to issues raised on the MCQ sheets and the Mock Exam, office hours and ad hoc meetings with academic staff, discussions in tutorials or at the end of the lecture and via the discussion group in blackboard.

Requisites
(ECON10171 Micro Analysis 1 or ECON10221 Micro 1 or ECON10331 Micro 1) and (ECON10181 Macro Analysis 1 or ECON10241 Macro 1 or ECON10252 Macro 1)

Available as free choice?   Y

Recommended reading
The course uses:
- **Thirlwall, A.P. and Penélope Pacheco-López (2017) Economics of Development: Theory and Evidence. 10th edition.**
- BUT earlier editions are also fine (Thirlwall, A.P. (2011), Economic and Development, 9th edition, Palgrave: Macmillan and eds 6-8 entitled Growth and Development, Palgrave: Macmillan).

We will also read:
- Lewis, W. Arthur (1954) Economic Development with Unlimited Supplies of Labour, Manchester School, May Volume 22, Issue 2, pages 139-191.

Some other articles and books will be referenced in the lectures. These may be made available or referenced on the Blackboard site.

Development Economics IIB

ECON 20332
Credit rating 10
ECTS credits 5

Semester 2

Unit coordinator: Alessia Isopi

School of Social Sciences
Economics
Undergraduate

Level 2

FHEQ level ' Middle part of Bachelors'

Marketing course unit overview

This course aims to develop students' understanding and knowledge of theoretical and empirical Development Economics. It focuses specifically on how the asymmetries in information that characterize markets in general affect even in a more severe way developing economies. Consequently, students will study the new theories for economic growth, the role of foreign aid from donor countries and then, more specifically on the asymmetries, we will analyze the rural vs the urban context, the agricultural sector and the credit market.

Even though it is not necessary to successfully complete the course to be familiar with calculus and some basic econometrics, you will be required to have a basic knowledge of both. If you have any questions or concerns about this at any point during the course, please contact me and we can arrange a meeting or come to my office during my office hours(to be confirmed). I also advice those who have never done Mathematics and/or Econometrics before to see me within the first couple of weeks

Course unit overview

This course aims to develop students' understanding and knowledge of theoretical and empirical Development Economics. It focuses specifically on how the asymmetries in information that characterize markets in general affect even in a more severe way developing economies. Consequently, students will study the new theories for economic growth, the role of foreign aid from donor countries and then, more specifically on the asymmetries, we will analyze the rural vs the urban context, the agricultural sector and the credit market.

Even though it is not necessary to successfully complete the course to be familiar with calculus and some basic econometrics, you will be required to have a basic knowledge of both. If you have any questions or concerns about this at any point during the course, please contact me and we can arrange a meeting or come to my office during my office hours(to be confirmed). I also advice those who have never done Mathematics and/or Econometrics before to see me within the first couple of weeks

Aims

- To familiarise students with the theoretical and empirical aspects of economic development faced by less developed countries (LDCs).
- To provide students with key concepts of Development Economics.
- To provide students with the basic skills required for the development of an independent understanding of the hot issues in Development Economics.

Learning outcomes
At the end of this course students should be able to:
1. Explain the key issues in developing countries making reference to the existing theoretical and empirical literature.
2. Assess critically aid-supported macroeconomic reform policies implemented in LDCs and their micro implications.
3. Demonstrate their understanding of how asymmetries in information affect and condition LDCs in the international economy and of the factors that influence LDCs growth and development prospects.
4. Express ideas coherently in structured essays.

Employability skills

Analytical skills	Synthesis and analysis of data and information. Critical reflection and evaluation. Decision-making.
Problem solving	
Research	Planning independent research. Using library, electronic and online resources.

Syllabus
Lecture 1 Introduction: What is Economic Development? Overview. Overview of the course and of the topics discussed during the course.
Lecture 2 The Family and how the members make decisions.
Lecture 3 Education and the role of Human Capital in the growth process.
Lecture 4 Foreign Aid for Development: the role of International Organizations in LDCs on aid allocation policies and strategies.
Lecture 5 Land and Asymmetries in Information: ownership and tenancy, land rental contracts and the role of incentives
Lecture 6 Rural and Urban: formal and informal sector and the interaction between the two.
Lecture 7 Credit Market and Insurance: theories of informal credit markets.
Lecture 8 Revision Class for the Exam

Teaching and learning methods
Lectures and tutorial classes.

Assessment methods
For information about feedback please follow this link:
http://www.campus.manchester.ac.uk/tlso/map/teachinglearningassessment/assessment/sectionb-thepracticeofassessment/policyonfeedbacktostudents/

Assessment:
86% Exam
14% Mid-term exam

Feedback methods
- Tutorial feedback.
- Office hours.
- Revision sessions.

Requisites
(ECON10171 Micro Analysis 1 or ECON10221 Micro 1 or ECON10331 Micro 1)
and ((ECON10061 Intro Maths and SOST10062 Intro Stats) or (ECON10071 Adv
Maths and ECON10072 Adv Stats))

Available as free choice?   Y

Recommended reading

The basic textbook for this module is:
Debraj, R. (1998), Development Economics, last edition, Princeton University Press.

Additional Readings
Lecture 1: Introduction: What is Economic Development? Overview.
BOOK: Ray (Ch. 2);
Basu, K. and Maertens, A. (2007). The pattern and causes of economic growth in
India. Oxford Review of Economic Policy, 23: 143-167.
Banerjee, A.V. and Du¿o, E. (2007). The Economic Lives of the Poor. The Journal
of Economic Perspectives. 21(1):141-167.
Sen, Amartya. (1988). The Concept of Development. Chapter 1 in Handbook of
Development Economics (1988), Vol. I, edited by Chenery, H. and Srinivasan, T. N.

Lecture 2: The Family and how the members make decisions.
A Cournot-Nash Model of Family Decision Making, The Economic Journal Volume
111,Issue 474,pages 722-748,October 2001
Grandmothers and Granddaughters: Old-Age Pensions and Intrahousehold
Allocation in South Africa, Duflo (2003), World Bank Economic Review.
Gender, Agricultural Production and the Theory of the Household, Chris
Udry,Journal of Political Economy, University of Chicago Press, vol. 104(5), pages
1010-46, October, 1996.

Lecture 3: Education and the role of Human Capital in the growth process.
BOOK: Ray (Ch. 4-5);
Du¿o, E. (2001). Schooling and Labor Market Consequences of School
Construction in Indonesia: Evidence from an Unusual Policy Experiment. American
Economic Review, 91(4): 795-813.
Galor, O. and Zeira, J. (1993). Income Distribution and Macroeconomics. Review of
Economic Studies, 60(1): 35-52.

Lecture 4: Foreign Aid for Development.

Robinson, S. and F. Tarp (2000), A Foreign Aid and Development: Synthesis in F. Tarp and P. Hjertholm (editors), Foreign Aid and Development: Learnt and Directions for the Future, Routledge, London and New York.
Burnside, G. and D. Dollar (2000), "Aid, Policies and Growth", American Economic Review, pp.847-868.
Hansen, H. and F.Tarp, (2000), "Aid effectiveness disputed", Journal of International Development, Vol. 12 (3), pp. 375-98.
Alesina, A. and D. Dollar (2000), "Who Gives Foreign Aid to Whom and Why?", Journal of Economic Growth, Vol.5, No.1, pp.33-63.

Lecture 5: Land and Asymmetries in Information: ownership, tenancy and land rental contracts
BOOK: Ray (Ch. 12)

Banerjee, A., Gertler, P., and Ghatak, M. (2002). Empowerment and Ef¿ciency: Tenancy Reform in West Bengal. Journal of Political Economy, 110(2):239-80.
Besley, T. and Burgess, R. (2000). Land Reform, Poverty Reduction, and Growth: Evidence from India. The Quarterly Journal of Economics, 115(2): 389-430.

Lecture 6: Rural and Urban Context: formal and informal sector and the interaction between the two.
BOOK: Ray (Ch. 10-11)

Lecture 7: Credit Market and Insurance: theories of informal credit markets
BOOK: Ray (Ch. 14-15)

Ghosh, P., Mookherjee, D., & Ray, D, (2000). Credit Rationing in Developing Countries: An Overview of the Theory. Chapter 11 in Readings in the Theory of Economic Development, edited by Mookherjee, D. & Ray, D., London: Blackwell, pages 383-301
Burgess, R., and R. Pande (2005). Do rural banks matter? Evidence from the Indian social banking experiment. American Economic Review 95, no. 3: 780-795.

Lecture 8: Revision Class for the Exa

Economics for Public Policy   ECON 20431

Credit rating 10
 Unit coordinator: Rachel Griffith

ECTS credits 5

Semester 1

School of Social Sciences
Undergraduate
Level 2

FHEQ level ' Middle part of Bachelors'

 Marketing course unit overview

Course unit overview

This course aims to provide students with an understanding of the role that economics has and can play in helping to form and evaluate public policy. We will discuss policy issues of both current and historical relevance, with a focus on the role of economics in helping to provide evidence to inform policymakers and the public about the merits and likely impacts of different policy choices. We will highlight the way that economics can help to elucidate the inherent trade-offs that are involved in taking decisions over taxation, spending, and regulation. Emphasis will be placed on developing students analytical skills and the ability to apply economic tools to critically evaluate policy options.

Aims

The aims of the course are to:
1.   Explore the rationale for public policy interventions in the economy.
2.   Provide an overview of a wide range of areas of applied microeconomics used in public policy, including relevant historical and international experience.
3.   Discuss the role of economics in the political process.
4.   Provide an introduction to the evaluation of economic policies.

Learning outcomes

At the end of this unit, students should be able to:
1.   Demonstrate an understanding of the criteria for successful microeconomic public policy interventions.
2.   Show understanding of the reasons for the variation in policy interventions over time and in different contexts.
3.   Be able to evaluate critically policy proposals, including demonstrating an awareness of sources of empirical evidence.
4.   Be able to express clear economic arguments about policy questions.

Employability skills

Analytical skills	
Problem solving	
Research	
Written communication	

Syllabus

- We consider the economics of what is the scope of public policies and the welfare economics of government intervention.
- We discuss government's role in production and regulation as approaches to achieving public policy aims in markets that are not perfectly competitive. We link the theory and history of the shifting boundary of state and private production.
- Poverty and inequality - one of the most obvious ways the state affects individuals' economic well-being is by providing an economic safety net in the shape of the welfare state. We look at the government's role in redistributing income both between individuals and over an individuals life time.
- We discuss policies that aim to correct classic market failures such as externalities.
- We consider the economics of several current challenges facing governments, such as an ageing population, rising obesity and other topical policy issues.
- We discuss how we can evaluate the effectiveness of policy.
- Government failure - public policies aim to correct market failures; we consider the question of the boundary between market and state when there might also be government failure.

Teaching and learning methods

Lectures - will provide basic material including use of PowerPoint presentations (although note taking will be necessary). All of the lecture presentations and additional material will be posted on the course website.
Workshops - will ask students to discuss lectures and other course material based on pre assigned reading.

Assessment methods

Weight   Description
80   Exam
20   Essay (policy brief of 1500 words)

Feedback methods

Students will receive feedback in tutorials on short written assignments and on presentations made in tutorials.

Requisites

(ECON10171 Micro Analysis 1 or ECON10221 Micro 1 or ECON10331 Micro 1)

and (ECON10181 Macro Analysis 1 or ECON10241 Macro 1 or ECON10252 Macro 1)

Available as free choice?   Y

Recommended reading

Gruber, Jonathan, *Public Finance and Public Policy*

- plus various readings to be made available via Blackboard

Microeconomic Analysis 3   ECON 20501/30501

Credit rating 10
ECTS credits 5

Unit coordinator: Horst Zank

Semester 1

School of Social Sciences
Undergraduate

Level 2

FHEQ level ' Middle part of Bachelors'

Marketing course unit overview

Course unit overview
To provide students with an intermediate level understanding of microeconomic topics that are at the core of neoclassical microeconomic theory and fundamental for the understanding and development of new, more advanced models for consumers and firms. A particular focus is on the notion of welfare in a basic economy where all agents have full information about the behaviours of other agents in the market economy. To achieve that a deep and concise understanding of the model of consumed choice and demands is required, a clear understanding of the decision process of firms in the short run (decision to produce or not) and long run (decision to enter a market or not). Finally, the unit addresses welfare issues when consumers and producers are present in an economy.

Aims
The aims of this unit are to: (i) provide students with rigorous understanding of the core neoclassical microeconomics involving consumers, producers, markets and notions of partial and general equilibrium.

Learning outcomes
At the end of this unit students should be able to: (i) demonstrate a clear understanding of preferences, choice, utility and demand; (ii) demonstrate a clear understanding of inputs, outputs, production, cost and supply; and (iii) perfect competition in a market and general equilibrium and welfare.

Employability skills

Analytical skills	Critical reflection and evaluation. Decision-making.
Oral communication	Participation in classes; expressing in own words to specialists and laymen what behavioural forces lead to particular economic outcomes.
Problem solving	Many exercises at easy/medium and advanced level.
Written communication	Ongoing learning and testing of basic fundamental

concepts of microeconomics.

Other   General foundations for neo-classical Microeconomics. Using economic modelling tools and techniques. Understanding role of incentives and strategic thinking. Planning and implementing independent study using library, electronic and online resources. Work to set deadlines.

Syllabus
I. Preferences, Choices, Utility, Demand:
- a. Definition of Relations, Rationality and Properties of Preferences
- b. Existence of a Utility& Properties of Utility; Ordinal versus Cardinal
- c. Consumer Problem
- d. Demand; Marginal Rates of Substitution, Indirect Utility/Expenditure
- e. Income and Substitution Effect; Law of Demand
- f. Consumer Surplus; Elasticities; Slutsky Equation; Market Demand
- g. Equilibrium in Exchange Economy, Pareto Optimality, Welfare Theorems.

II. Production, Costs, Supply
- a. Inputs and Outputs; Technology
- b. Firms and their Objective
- c. Price Taking Firms, Cost Function/Marginal/Average Costs, MRTS, Law of Supply/Demand
- d. Returns to scale, elasticity of output,

III. General Equilibrium and Welfare
- a. The Robinson Crusoe Economy, Optimality and Walrasian Equilibrium
- b. Competitive Equilibrium, Def. Walrasian Equilibrium Price,
- c. Existence of Equilibrium
- d. First Welfare Theorem
- e. Second Welfare Theorem

Teaching and learning methods
The material is delivered via the online (Blackboard) provision of material (readings) and lectures.
The learning process of students is supported by tutorials (exercise questions and discussion based questions) and the provision of ongoing short unseen tests on the course material covered (thereby facilitating ongoing independent learning).

Assessment methods
Weight   Description
60   Exam
40   8 In class tests

Feedback methods
Students can also receive further feedback from lectures, tutorials & office hours, and after the corresponding interim tests.

Requisites
ECON10172 Micro Analysis 2 and ECON10071 Adv Maths and ECON10192 Intro to Math Econ

Available as free choice?   N

Recommended reading
Core Reading:
- Nicholson, Walter and Christopher Snyder, Intermediate Microeconomics and its Applications, Cenage Learning, 2015.
- Varian, Hal. R., Intermediate Microeconomics with Calculus, Norton, 2014.

Advanced Reading:
- Jehle, G.A. and P.J. Reny, Advanced Microeconomic Theory, Addison-Wesley, 2011.
- Riley, John G., Essential Microeconomics, Cambridge UP, 2012.

Very Advanced Reading:
- Mas-Colell, A., M. Whinston, J. Green, Microeconomic Theory, MIT Press, 1995.

Articles:
- Ackerman, Frank (1997) "Consumed in Theory: Alternative Perspectives on the Economics of Consumption," Journal of Economic Issues 31 (3), 651-664.
- Arrow, Kenneth J. (1959) "Rational Choice Functions and Orderings," Economica, New Series 26 (102), 121-127.
- Arrow, Kenneth J. (1963) "Uncertainty and the Welfare Economics of Medical Care," American Economic Review 53 (5), 941-973.
- Waldfogel, Joel (1993) "The Deadweight Loss of Christmas," American Economic Review 83 (5), 1328-1336.

Microeconomic Analysis 4

ECON 20512/30512

Credit rating 10
ECTS credits 5

Unit coordinator: W Chiu

Semester 2

School of Social Sciences
Undergraduate

Level 2

FHEQ level ' Middle part of Bachelors'

Marketing course unit overview

Course unit overview

To provide students with an understanding of the quantitative methods and tools that economists use and how they can be appropriately applied and interpreted. These methods and tools are used in practical and academic settings to test economic theories and measure magnitudes that are relevant for economic policy analysis and other decisions. These methods are a key element of the professional training an economist; they will provide a foundation for subsequent study of applied and quantitative topics and are useful in many careers in economics. The course aims to equip students with a number of core competencies including: (i) an awareness of the main empirical approach to economics, (ii) experience in the analysis and use of data and software packages as tools of quantitative and statistical analysis to answer topical economic questions, (iii) an understanding of the nature of uncertainty and methods of making inference in the presence of uncertainty.

The objectives of this course are that students will be able to:

- understand the main techniques of quantitative economics and econometrics, including their strengths and limitations, at a level appropriate for an economics graduate
- understand how these techniques can be applied to test economic theories and measure economic magnitudes, and have some knowledge of methods and results in selected areas of the applied economics literature
- have some practical experience of the application of econometric methods based on practical exercises
- have acquired the necessary skills and knowledge to be able to critically appraise work in the area of applied economics.
- have a good intuitive and theoretical grasp of the dangers, pitfalls and problems encountered in doing applied modelling.
- have the necessary background material so that they are able to go on to study more advanced and technical material in the area of econometrics.
- use the R software package to obtain basic descriptive statistics using real world data and perform introductory econometric analysis.

Aims

This course aims to introduce students to rigorous analysis of the workings of the factor (labour and capital) markets and how uncertainty and asymmetric information affect the decision making process of market actors.

Learning outcomes
At the end of this course unit it is expected that you will be able to demonstrate your understanding of:
1. Labor demand and supply.
2. Intertemporal choice.
3. Capital market and real interest rate.
4. Expected utility theory.
5. Concept of risk aversion.
6. Optimal insurance purchasing.
7. Risky asset investment.
8. Economics of asymmetric information.

Employability skills

Analytical skills	Abstract and numerical reasoning.
Problem solving	Applying knowledge to unfamiliar problems.
Written communication	Using words, mathematics, and diagrams to explain, solve problems, and make arguments. Producing documents with text, mathematics, and diagrams. Academic writing.

Syllabus
Factors Markets

Labor demand and supply

Intertemporal choice

Capital Market and real interest rate

Uncertainty

Decisions under risk

Expected utility Theory

Concept of risk aversion

Optimal insurance purchasing

Risky asset investment

Asymmetric Information

Adverse selection

Moral hazard

Signalling

Teaching and learning methods
The material is delivered via the online (Blackboard) provision of material (readings, clips) and lectures.
The learning process of students is supported by tutorials (exercise questions and discussion based questions) and the provision of further online material (such as discussion boards and practice quizzes).

Assessment methods
Weight   Description
80   Exam
20   Mid-term test

Feedback methods

- Formative Assessment (assessment that does not contribute to your grade) and other feedback opportunities
- Weekly tutorial: A Problem set containing questions designed to reinforce understanding of material covered in the lectures is assigned for each tutorial. Students are asked to attempt the questions before attending each tutorial and get questions answered during the tutorial.
- Sample Exam Paper

Requisites
ECON20501 Micro Analysis 3

Available as free choice?   N

Recommended reading

Nicholson, Walter and Christopher Snyder, *Intermediate Microeconomics and its Applications*, Cenage Learning, 2015.
Varian, Hal. R., *Intermediate Microeconomics with Calculus*, Norton, 2014.

Macroeconomic Analysis 3

ECON 20521/30521

Credit rating 10
ECTS credits 5

Unit coordinator: Raffaele Rossi

Semester 1

School of Social Sciences
Undergraduate

Level 2

FHEQ level ' Middle part of Bachelors'

Marketing course unit overview

Course unit overview

To provide students with an understanding of the quantitative methods and tools that economists use and how they can be appropriately applied and interpreted. These methods and tools are used in practical and academic settings to test economic theories and measure magnitudes that are relevant for economic policy analysis and other decisions. These methods are a key element of the professional training an economist; they will provide a foundation for subsequent study of applied and quantitative topics and are useful in many careers in economics. The course aims to equip students with a number of core competencies including: (i) an awareness of the main empirical approach to economics, (ii) experience in the analysis and use of data and software packages as tools of quantitative and statistical analysis to answer topical economic questions, (iii) an understanding of the nature of uncertainty and methods of making inference in the presence of uncertainty.

The objectives of this course are that students will be able to:

* understand the main techniques of quantitative economics and econometrics, including their strengths and limitations, at a level appropriate for an economics graduate
* understand how these techniques can be applied to test economic theories and measure economic magnitudes, and have some knowledge of methods and results in selected areas of the applied economics literature
* have some practical experience of the application of econometric methods based on practical exercises
* have acquired the necessary skills and knowledge to be able to critically appraise work in the area of applied economics.
* have a good intuitive and theoretical grasp of the dangers, pitfalls and problems encountered in doing applied modelling.
* have the necessary background material so that they are able to go on to study more advanced and technical material in the area of econometrics.
* use the R software package to obtain basic descriptive statistics using real world data and perform introductory econometric analysis.

Aims

The aims of this unit are to:
1. Introduce students to introduction to simple macroeconomic dynamics.
2. Understand the the implications of intertemporal decision making for consumption, investment and government policy.
3. Develop critical analysis and lay the foundation for macroeconomic courses in the third year.
4. Provide the employability skills of describing macroeconomic events and key global issues to non-economists with confidence.

Knowledge and understanding
(i) have developed their understanding of modern macroeconomic theory and policy in particular with respect to intertemporal decision making and economic growth.

Intellectual skills
(i) problem-solving skills; (ii) skills of analysis, and the application of analytical models; (iii) the evaluation and critical analysis of arguments, theories and policies; (iv) synthesise and evaluate data.

Practical skills
(i) independently locate and assess relevant literature, and to draw on these to develop understanding and to construct arguments.

Transferable skills and personal qualities
(i) select and deploy relevant information; (ii) communicate ideas and arguments in writing; (iii) apply skills of analysis and interpretation; (iv) manage time and work to deadlines; (v) use ICT to locate, analyse, organise and communicate information (e.g. internet, on-line databases, search engines,
library catalogues, spreadsheets, specialist programs, word processing and presentation software).

Employability skills
Analytical skills

Problem solving

Syllabus
Economic Growth:
• Economic growth Malthus and Solow (Williamson, ch. 6).
• Income disparity among countries and Endogenous Growth (Williamson, ch. 7).

intertemporal Macroeconomics (Two-Period Model):
• Household's intertemporal budget constraint and consumption decisions (Williamson, ch. 8).
• Credit Market Imperfections: Credit Frictions, Financial Crises (Williamson, ch.9).
• Public and Private Budget Constraints (Williamson, ch. 10).

- Taxation and Deficit Financing: Public Debt and Seignorage (Williamson, ch. 10).

Teaching and learning methods
The material is delivered via the online (Blackboard) provision of material (readings, clips) and Lectures.
The learning process of students is supported by tutorials (exercise questions and discussion based questions) and the provision of further online material (such as discussion boards and practice quizzes).

Assessment methods
Weight   Description
70   Exam
30   Mid-term test

Feedback methods
- Tutorial feedback.
- Office hours.
- Revision sessions.

Requisites
ECON10182 Macro Analysis 2

Available as free choice?   N

Recommended reading
Stephen D. Williamson, (2014) Macroeconomics, fifth edition, Person.

Macroeconomic Analysis 4

ECON 20532/30532

Credit rating 10
ECTS credits 5

Semester 2

Unit coordinator: Michele Berardi

School of Social Sciences
Undergraduate

Level 2

FHEQ level ' Middle part of Bachelors'

Marketing course unit overview

Course unit overview

The course uses a unifying framework, the overlapping generations model, to analyse questions pertaining to the nature and role of money in an economy, the co-existence between money and other assets with different rates of returns, the relationship between money and prices and the link between money and public debt.

Aims

The unit aims to introduce students to a number of theories and models of modern macroeconomics, with particular attention to the role played by money and prices in the economy. Students will learn to use a unified theoretical framework to address important questions in macroeconomics and will develop a deep understanding of the role of money, banks and financial intermediation in an economy.

Learning outcomes
At the end of the course student should have developed their understanding of key aspects of modern macroeconomic theory and policy.

Employability skills

Intellectual skills: critical thinking; problem posing, synthesis and analysis of data and information; critical reflection and evaluation.

Practical skills: using library; electronic and online resources.

Transferable skills: information retrieval; numeracy; time management.

Syllabus

Textbook: Bruce Champ, Scott Freeman and Joseph Haslag, **Modeling Monetary Economies**. Cambridge University Press, 4th Edition.

Part I: Money
  The role of money
  Inflation, the Phillips curve and the Lucas Critique
Part II: Banking
  Banking and financial intermediation
  Central banks, money supply and output
  Bank risk, bank panics and moral hazard
Part III: Government debt
  Public debt and inflation

Teaching and learning methods
The material is delivered via the online (Blackboard) provision of material (readings, clips) and lectures.
The learning process of students is supported by tutorials (exercise questions and discussion based questions) and the provision of further online material (such as discussion boards and practice quizzes).

Assessment methods
Weight   Description
100   Exam

Feedback methods
Students can receive further feedback from tutorials and office hours.

Requisites
ECON20521 Macro Analysis 3

Available as free choice?   Y

Recommended reading
Bruce Champ, Scott Freeman and Joseph Haslag, Modeling Monetary Economies.
Cambridge University Press, 4th Edition.

Advanced Microeconomics

ECON 30001

Credit rating 20
ECTS credits 10

Semester 1

Unit coordinator: Craig Webb

School of Social Sciences
Economics
Undergraduate

Level 3

FHEQ level ' Last part of a Bachelors'

Marketing course unit overview

Course unit overview
The unit covers a range of topics of Microeconomics at the advanced undergraduate level. Topics can include choice under risk and uncertainty, asymmetric information, valuing information, screening, moral hazard, elements of contract theory and mechanism design, game theoretic applications such as auctions and bargaining, and methods of experimental economics.

Aims
The unit aims to:
Expose students to topics in Microeconomics at the advanced undergraduate level.

Knowledge and understanding
Students will have an understanding of the central topics of advanced Microeconomics.

Intellectual skills
Abstract reasoning, economic modelling and problem solving, analytical skills, evaluation and critical analysis of arguments, theories and policies

Practical skills
Providing formal proofs, problem solving, writing formal arguments and explanations, developing a clear and succinct writing style, independently locate and assess relevant literature and to draw on these to develop understanding and to construct arguments.

Transferable skills and personal qualities
precision, able to follow and provide logical arguments, producing digital documents

with equations and diagrams, working consistently towards deadlines, responding to feedback to consolidate understanding.

Syllabus
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Teaching and learning methods
Lectures and exercise classes.

Assessment methods
Weight   Description
30   Problem Set
70   Exam

Feedback methods

Requisites
(ECON20022 Micro 4 or ECON20512 Micro Analysis 4) and (ECON10071 Adv Maths or ECON20071 Adv Maths)

Available as free choice?   N

Recommended reading
Advanced Microeconomic Theory, Jehle and Reny.
Microeconomic Theory, Mas-Colell, Whinston and Green.
Information Economics, Birchler and Butler.
Lecture Notes in Microeconomics, Rubinstein.

Advanced Macroeconomics

ECON 30002

Credit rating 10
ECTS credits 5

Unit coordinator: Raffaele Rossi

Semester 2

School of Social Sciences
Economics
Undergraduate

Level 3

FHEQ level ' Last part of a Bachelors'

Aims

The course focuses on the role of information, expectations and beliefs in macroeconomic. These elements have been increasingly recognized in recent years as playing a key role in shaping macroeconomic outcomes and determining the effects of monetary and fiscal policies.

The aim of this unit is to give students an understanding of the role played by information, beliefs and expectations in macroeconomics. Alternative theories of expectations formation and information acquisition and processing will be studied, with an emphasis on their policy implications. Students will learn and understand the consequences for macroeconomic outcomes of different information structures and of different assumptions about the degree of rationality of economic agents

Learning outcomes

Students will acquire knowledge and understanding of:
1. Different theories of expectations formation.
2. Ttheir implications in terms of policy effectiveness.
3. The problem of coordination and its implications for macroeconomics.
4. Rationality and irrationality in markets.
5. The role of information.

Employability skills

Analytical skills

Problem solving

Other   Information retrieval. Presentation. Numeracy. Literacy.

Syllabus

List of topics covered and related required readings:

Rational Expectations and Their Policy Implications (2 hours)
- Thomas Sargent and Neil Wallace, 1976. Rational Expectations and the Theory of Economic Policy. Journal of Monetary Economics 2, 169-183.
- Robert E. Lucas, 1976. Econometric Policy Evaluation: A Critique. Carnegie-Rochester Conference Series on Public Policy 1, 19-46.

Self-Fulfilling Expectations and the Business Cycle (2 hours)
- Costas Azariadis, 1981. Self-fulfilling prophecies. Journal of Economic Theory 25, 380-396.
- Roger E. Farmer and Michael Woodford, 1997. Self-fulfilling prophecies and the business cycle. Macroeconomic Dynamics 1, 740-769.

Self-Confirming Equilibria and Their Relevance for Policymakers (2 hours)
- Drew Fudenberg and David K. Levine. 2009. Self-confirming equilibrium and the Lucas critique. Journal of Economic Theory 144, 2354-2371.
- In-Koo Cho, Noah Williams and Thomas J. Sargent, 2002. Escaping Nash Inflation. Review of Economic Studies 69, 1-40.

Rational Inattention and Monetary Economics (1 hours)
- Christopher Sims, 2003. Implications of Rational Inattention. Journal of Monetary Economics 50, 665-690.
- Christopher Sims, 2010. Rational Inattention and Monetary Economics. In: Handbook of Monetary Economics, Volume 3B, North Holland.

Coordination Problems and Global Games: Bank Runs and Currency Attacks (3 hours)
- Stephen Morris and Hyun Song Shin, 1998. Unique equilibrium in a model of self-fulfilling currency attacks. American Economic Review 88, 587-597.
- Stephen Morris and Hyun Song Shin, 2003. Global Games: Theory and Applications. In: Advances in Economics and Econometrics (Proceedings of the Eighth World Congress of the Econometric Society), edited by M. Dewatripont, L. Hansen and S. Turnovsky; Cambridge University Press (2003).
- http://www.princeton.edu/~smorris/pdfs/Morris-GlobalGamesTheoryandApplications.pdf.
- George-Marios Angeletos, Christian Hellwig and Alessandro Pavan, 2007. Dynamic Global Games of Regime Change: Learning, Multiplicity, and the Timing of Attacks. Econometrica 75, 711-756.

Bubbles: Rational or Irrational? (3 hours)
- Diba, B.T., Grossman, H.I., 1988. The Theory of Rational Bubbles in Stock Prices. The Economic Journal 98, 746-754.
- Olivier J. Blanchard, 1979. Speculative bubbles, crashes and rational expectations. Economics Letters 3, 387-389. (Tutorial T6)
- Jean Tirole, 1985. Asset Bubbles and Overlapping Generations. Econometrica 53, 1499-1528.
- Markus K. Brunnermeier, 2008. Bubbles. In: New Palgrave Dictionary of Economics, Second Edition, 2008

(https://scholar.princeton.edu/sites/default/files/bubbles_survey_0.pdf).

Efficient Markets? (2 hours)
- Sanford J. Grossman and Joseph E. Stiglitz, 1980. On the impossibility of informationally efficient markets. American Economic Review 70, 393-408.

Revision Class (1 hours)

Teaching and learning methods
Lectures and exercise classes.

Assessment methods
Weight	Description
30	Mid term exam
70	Final Exam

Feedback methods
- Tutorials.
- Office hours.
- Revision sessions.
- Discussion boards.

Requisites
 (ECON20532 Macro Analysis 4 or ECON20032 Macro 4) and (ECON10071 Adv Maths or ECON20071 Adv Maths)

Available as free choice?   Y

Recommended reading
No single textbook covers the material required in this module. We will be mainly using journal articles and papers, available through the Library or posted on Backboard. Lecture notes will also be provided.

Besides the specific (compulsory) readings listed for each class (see above), additional non-compulsory (but very interesting) readings are:

Books:
- Evans, G.W., Honkapohja, S., 2001. Learning and Expectations in Macroeconomics. Princeton University Press.
- Farmer, R.E., 1993. The Macroeconomics of Self-Fulfilling Prophecies. MIT Press, Cambridge, MA.
- Sargent, Thomas, 1999. The Conquest of American Inflation. Princeton University Press, Princeton.
- Veldkamp, L., 2001. Information choice in macroeconomics and finance.

Princeton University Press.

Journal articles:
- Angeletos, G. M., Pavan, A., 2007. Efficient Use of Information and Social Value of Information. Econometrica 75, 1103-42.
- Angeletos, G.-M., La'O, J., 2013. Sentiments. Econometrica 81, 739-79.
- Angeletos, G.-M., Werning, I., 2006. Crises and Prices: Information Aggregation, Multiplicity and Volatility. American Economic Review 96, 1720-36.
- Anufriev, M., Hommes, C. H., 2012. Evolutionary selection of individual expectations and aggregate outcomes, American Economic Journal: Microeconomics 4, 35-64.
- Benhabib, J., Farmer, R., 1999. Indeterminacy and sunspots in macroeconomics, in: The Handbook of Macroeconomics, John Taylor and Michael Woodford, eds., North Holland.
- Bikhchandani, S., Hirshleifer, D., Welch, I., 1992. A theory of fads, fashion, custom, and cultural change in informational cascades. Journal of Political Economy 100, 992-1026.
- Cass, D., Shell, K., 1983. Do sunspots matter? Journal of Political Economy 91, 193-227.
- Cole, H., Kehoe, T., 2000. Self-Fulfilling Debt Crises. Review of Economic Studies 67, 91-116.
- Dilip, A., Brunnermeier, M., 2003. Bubbles and Crashes. Econometrica 71, 173-204.
- Evans, G.W., Ramey, G., 2006. Adaptive expectations, underparameterization and the Lucas critique. Journal of Monetary Economics 53, 249-264.
- Farmer, R. E., 1990. The Lucas Critique, Policy Invariance and Multiple Equilibria. Review of Economic Studies 105, 43-60.
- Fudenberg, D., Levine, D.K., 1993. Self-Confirming Equilibrium. Econometrica 61, 523-546.
- Hellwig, M., 1980. On the Aggregation of Information in Competitive Markets. Journal of Economic Theory 22, 477-98.
- Hommes, C. H., 2009. Bounded rationality and learning in complex markets. In: Handbook of Economic Complexity, Edited by J. Barkley Rosse, Jr., Cheltenham: Edward Elgar.
- Lansing, K.J., 2010. Rational and near-rational bubbles without drift. Economic Journal 120, 1149-1174.
- Lucas, R.E., 1972. Expectations and the Neutrality of Money. Journal of Economic Theory 4, 103-124.
- Lux, T., 1995. Herd Behaviour, Bubbles and Crashes. The Economic Journal 105, 881-896.
- Mackowiak, B., Wiederholt, M., 2009. Optimal Sticky Prices under Rational Inattention. American Economic Review 99, 769-803.
- Mankiw, N.G., Reis, R., 2002. Sticky Information versus Sticky Prices: A Proposal to Replace the New Keynesian Phillips Curve. Quarterly Journal of Economics 117, 1295-328.
- McGough, B., 2006. Shocking Escapes. Economic Journal, 116, 507-28.
- Reis, R., 2006. Inattentive Producers. Review of Economic Studies 73, 793-821.
- Tirole, J., 1982. On the possibility of speculation under rational expectations. Econometrica 50, 1163-1181.

Dissertation in Economics

ECON 30100

Credit rating 20
ECTS credits 10

Unit coordinator: Edward Manderson

Full year

School of Social Sciences
Economics
Undergraduate

Level 3

FHEQ level ' Last part of a Bachelors'

Marketing course unit overview
The unit aims to:
- Enable students to identify a researchable issue or topic of their interest in the field of economics.
- Allow students to conduct independent research engaging with primary and/or secondary literature sources.
- Write a detailed thesis that develops an in-depth discussion and analysis, and that provides insight and furthers understanding of the chosen issue or topic.

Course unit overview
The unit aims to:
- Enable students to identify a researchable issue or topic of their interest in the field of economics.
- Allow students to conduct independent research engaging with primary and/or secondary literature sources.
- Write a detailed thesis that develops an in-depth discussion and analysis, and that provides insight and furthers understanding of the chosen issue or topic.

Aims
The unit aims to:
1.
   Enable students to identify a researchable issue or topic of their interest in the field of economics.
2.
   Allow students to conduct independent research engaging with primary and/or secondary literature sources.
3.
   Write a detailed thesis that develops an in-depth discussion and analysis, and that provides insight and furthers understanding of the chosen issue or topic.

Learning outcomes

A student who writes an Economics dissertation towards his/her PPE degree will:

1. Gain a deep knowledge and understanding of the chosen topic.
2. Learn to define a research question.
3. Identify and effectively use appropriate sources.
4. Conduct independent research and develop an in-depth analysis.
5. Use word processing software to communicate research outcomes in written form and also give effective oral presentations of research progress using powerpoint.
6. Use meetings with supervisor to good effect.
7. Deploy the scholarly apparatus of Bibliography and footnotes effectively.
8. Use initiative to solve problems.
9. Develop written and presentation skills.
10. Effectively organise time and work towards a deadline.

Employability skills

Analytical skills	Synthesis and analysis of data and information. Critical reflection and evaluation.
Problem solving	
Research	Planning, conducting and reporting on research. Planning independent research using library, electronic and online resources.
Other	Information retrieval. Presentation. Numeracy. Literacy. Computer literacy. Time management. Applying subject knowledge. Research. Improving own learning.

Teaching and learning methods

- Individual study under the guidance of dissertation supervisors.
- Around eight hours of group contact time, including an introduction to the dissertation, a session on study skills and using the libary's resources, and presentation sessions with Q&A.

Assessment methods

Final Dissertation: 7000-8000 words (100%).

Feedback methods

- Oral presentations in group sessions with feedback provided in the form of Q&A discussion.
- Regular meetings with supervisor.
- Submission of draft dissertation to supervisor.

Requisites
This course unit is available to PPE students <u>only</u>.

Available as free choice?   N

The Chinese Economy

ECON 30101

Credit rating 10
ECTS credits 5

Unit coordinator: Xiaobing Wang

Semester 1

School of Social Sciences
Economics
Undergraduate

Level 3

FHEQ level ' Last part of a Bachelors'

Marketing course unit overview

Course unit overview

To provide students with an understanding of the quantitative methods and tools that economists use and how they can be appropriately applied and interpreted. These methods and tools are used in practical and academic settings to test economic theories and measure magnitudes that are relevant for economic policy analysis and other decisions. These methods are a key element of the professional training an economist; they will provide a foundation for subsequent study of applied and quantitative topics and are useful in many careers in economics. The course aims to equip students with a number of core competencies including: (i) an awareness of the main empirical approach to economics, (ii) experience in the analysis and use of data and software packages as tools of quantitative and statistical analysis to answer topical economic questions, (iii) an understanding of the nature of uncertainty and methods of making inference in the presence of uncertainty.

The objectives of this course are that students will be able to:

* understand the main techniques of quantitative economics and econometrics, including their strengths and limitations, at a level appropriate for an economics graduate
* understand how these techniques can be applied to test economic theories and measure economic magnitudes, and have some knowledge of methods and results in selected areas of the applied economics literature
* have some practical experience of the application of econometric methods based on practical exercises
* have acquired the necessary skills and knowledge to be able to critically appraise work in the area of applied economics.
* have a good intuitive and theoretical grasp of the dangers, pitfalls and problems encountered in doing applied modelling.
* have the necessary background material so that they are able to go on to study more advanced and technical material in the area of econometrics.
* use the R software package to obtain basic descriptive statistics using real world data and perform introductory econometric analysis.

Aims

The aims of this course are:

1. To provide an overview of the Chinese economy.
2. To discuss the different perspectives on the current issues of the Chinese economy.
3. To evaluate the problems and potentials of Chinese economy.
4. To familiarise students with the economic/business environment in China.
5. To apply economic theories to a real economy.

Learning outcomes

On completion of this course, successful students will be able to:

1. Gain an understanding of Chinese economic history.
2. Explore the degree and characteristics of China's transition and economic development.
3. Identify the major economic problems China is facing today and consider potential solutions.
4. Be familiar with and have a clear understanding of the current hot discussions about China.

Employability skills

Analytical skills	Skills of analysis, and the application of analytical models. The evaluation and critical analysis of arguments, theories and policies. Synthesise and evaluate data.
Research	Independently locate and assess relevant literature, and to draw on these to develop understanding and to construct arguments.
Other	Manage time and work to deadlines.

Syllabus

Topic 1: Chinese Economic History before 1949.
Topic 2: Economic Development from 1949 to 1978 and the Reforms since 1978.
Topic 3:International Trade.
Topic 4: Banking and Financial System in China.
Topic 5: Income Distribution in China.
Topic 6: Labour Market in China.
Topic 7: Growth Accounting and Growth Potential.

Teaching and learning methods

Lectures and exercise classes.

Assessment methods

Weight   Description
90   Exam
10   In-class tests

Feedback methods
- Tutorial discussion.
- Q&As.
- Revision sessions.
- Office hours.
- Discussion boards.

Requisites

(ECON10221 Micro 1 and ECON10252 Macro 1) or (ECON10331 Micro 1 and ECON10241 Macro 1) or (ECON10171 Micro Analysis 1 and ECON10181 Macro Analysis 1)

Available as free choice?   Y

Recommended reading
- Naughton, Barry., (2007), The Chinese Economy: Transitions and Growth, Cambridge, Mass.: MIT Press.
- Lin, Justin Yifu., (2011), Demystifying the Chinese Economy, Cambridge, Cambridge University Press.

Natural Resource Economics

ECON 30232

Credit rating 10
ECTS credits 5

Unit coordinator: Prasenjit Banerjee

Semester 2

School of Social Sciences
Economics
Undergraduate

Level 3

FHEQ level ' Last part of a Bachelors'

Marketing course unit overview

Course unit overview

To provide students with an understanding of the quantitative methods and tools that economists use and how they can be appropriately applied and interpreted. These methods and tools are used in practical and academic settings to test economic theories and measure magnitudes that are relevant for economic policy analysis and other decisions. These methods are a key element of the professional training an economist; they will provide a foundation for subsequent study of applied and quantitative topics and are useful in many careers in economics. The course aims to equip students with a number of core competencies including: (i) an awareness of the main empirical approach to economics, (ii) experience in the analysis and use of data and software packages as tools of quantitative and statistical analysis to answer topical economic questions, (iii) an understanding of the nature of uncertainty and methods of making inference in the presence of uncertainty.

The objectives of this course are that students will be able to:

*   understand the main techniques of quantitative economics and econometrics, including their strengths and limitations, at a level appropriate for an economics graduate
*   understand how these techniques can be applied to test economic theories and measure economic magnitudes, and have some knowledge of methods and results in selected areas of the applied economics literature
*   have some practical experience of the application of econometric methods based on practical exercises
*   have acquired the necessary skills and knowledge to be able to critically appraise work in the area of applied economics.
*   have a good intuitive and theoretical grasp of the dangers, pitfalls and problems encountered in doing applied modelling.
*   have the necessary background material so that they are able to go on to study more advanced and technical material in the area of econometrics.
*   use the R software package to obtain basic descriptive statistics using real world data and perform introductory econometric analysis.

Aims
This course explores the use of natural resources from an economic perspective. The goal is to examine economic theories of natural resource scarcity and sustainability, conflicts and environmental degradation from natural resource use. It aims to provide the students with an analytical understanding of the neoclassical economics analysis of the exploitation of
natural resources and markets for non renewable resources (e.g. minerals and oil), and renewable resources (e.g. fisheries and elephants/ivory).

Learning outcomes
At the end of this course students should be able to:
1. demonstrate their understanding of some of the fundamental relationships between economic activity and the 'natural environment';
2. demonstrate their understanding of the optimal rate of use of non renewable natural resources and the role of the interest rate, extraction costs and backstop technologies on the price and supply path;
3. use bioeconomic models & demonstrate their understanding of the optimal rate of use of renewable natural resources and role of property rights regimes.

Intellectual skills
Critical thinking, Problem solving, Problem posing, Decision-Making;

Practical skills
Planning independent research and study using library, electronic and online resources,

Transferable skills and personal qualities
Information Retrieval, Numeracy, Literacy, Computer Literacy, Time Management Applying Subject Knowledge, Improving own Learning;
Other attributes: Willingness to update knowledge; Listening; Commercial Awareness, Stress Tolerance, Self-confident, Independence, Self-management, etc.

Employability skills
Analytical skills

Problem solving

Research	Planning independent research and study using library, electronic and online resources.
Other	Information retrieval. Numeracy. Literacy. Computer literacy. Time-management Applying subject knowledge.

Improving own learning.

Syllabus
Topic 1. Introduction
Topic 2. Economics of Non-Renewable resources
Topic 3. Economics of Renewable Resources
Topic 4: Dynamic Optimization (Optimal Control Technique)
Topic 5. Management Mechanisms
Topic 6. Other related issues (e.g., Forest economics, Ecological Economics)

Teaching and learning methods
Lectures and tutorial classes.

Assessment methods

Assess Weight	Description
75	Exam
15	Group work
10	Excel exercisement methods

Feedback methods
- Mock exam.
- Tutorial feedback.
- Office hours.
- Discussion boards.

Requisites
(ECON20021 Micro 3 or ECON20501 Micro Analysis 3) and (ECON10071 Adv
Maths or ECON20071 Adv Maths)

Available as free choice?   Y

Recommended reading
- Conrad, J (1999) Resource Economics. CUP.
- T. Tietenberg, Environmental and Natural Resource Economics, Pearson /
  Addison Wesley.
- R. Perman, Y. Ma, J. McGilvray, M. Common (2003), Natural Resource and
  Environmental Economics (3rd Ed. Or 4th Ed.).

Mathematical Economics II

ECON 30290

Credit rating 20
ECTS credits 10

Unit coordinator: Prof. Igor Evstigneev

Full year

School of Social Sciences
Economics
Undergraduate

Level 3

FHEQ level ' Last part of a Bachelors'

Course unit overview

The main theme of this course is game theory. Nowadays, game theory became the most important modelling tool in economic analysis, and this subject plays a key role in any modern economics curriculum. The objective of this course is to introduce students into this important field of mathematical economics.

We present a necessary minimum---a "critical mass"---of game-theoretic models and concepts that could be included into a 3rd year economics course. The main emphasis is on those aspects of game theory that have direct links to economic modelling. Although we have to introduce general game-theoretic notions and frameworks, we try to set reasonable limits on pursuing generalities. We attempt to explain the key ideas within the most simple settings and present every topic in the most simple way, retaining at the same time necessary key details.

Most of the material of the course deals with the classical topics in non-cooperative games and their economic applications, e.g., industrial organization and various aspects of competitive market behaviour. Among other themes, brief introductions to the basic models of evolutionary game theory and cooperative games are given. Less traditional topics are related to the analysis of determinacy, unbeatable/winning strategies and their applications. The course contains many examples and problems, most of which are presented in example classes, take-home tests and tutorials.

The whole 2nd semester part of the course is concerned with specialized game-theoretic models related to auctions and mechanism design, which have remarkable applications in economics.

This course uses only elementary mathematical techniques suitable for undergraduate economics students. However, it is of a genuinely mathematical nature: it involves rigorous reasoning -- theorems, assumptions, proofs, etc. It is addressed to students inclined to mathematics, who wish to enjoy the depth and elegance of the mathematical approach to economic modelling. This character of the course requires students' intensive work and active learning.

In view of the specific character of this course, lecture podcasts are typically not available for students, and attendance at lectures is therefore particularly important. However, students registered with the DAS Service may, via their Support Plan, request that podcasts be made available to them.

Aims

The general aim of this course is to introduce students to the basic game-theoretic principles and techniques employed in economic modelling. The first semester part of the course reviews fundamental themes and concepts in game theory. The second semester part focuses on auctions and mechanism design.

Learning outcomes

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

- formalize real world situations in terms of either optimization problems or games;
- demonstrate the understanding of the main solution concepts in game theory;
- use in economic modelling various game-theoretic frameworks (static and dynamic games, games of complete information, Bayesian games, etc.);
- be familiar with the basic principles of evolutionary game theory and its applications in economics.

Employability skills

Mathematical modelling and quantitative methods in economics underpin both advanced research and effective policy. To understand social dynamics, economic behaviour and the effects of social interventions researchers and practitioners have to be able to deploy a broad range of analytic skills. The course develops skills of this kind and thereby helps preparing the students for a future career in the realms of economics and finance

Syllabus
Semester 1:

The focus of the 1st semester part of the course is on general concepts and frameworks of game theory in the context of mathematical economics. Topics include:

- Simultaneous move games and dynamic games with perfect information. Nash equilibrium and subgame perfect Nash equilibrium. Games with communication. Contracts, implementable allocations and correlated equilibria. The economic models of Cournot, Stackelberg, Bertrand, Hotelling, Bertrand-Edgeworth, the "Monopoly Union" model, and Rubinstein's bargaining model. Unbeatable strategies and determinacy.
- Two stage games with imperfect information and repeated games. Economic models of bank runs. Infinitely repeated games. The Folk Theorem.
- Incomplete information. Static Bayesian games. Bayesian Nash equilibrium. Cournot and Bertrand models with asymmetric information. Simplest models of auctions. Dynamic Bayesian games. Perfect Bayesian Nash equilibrium. Signalling models.
- Learning and fictitious play. Evolutionary game theory. Evolutionary stable strategies. Replicator dynamics. Evolutionary stable steady states.

Semester 2:

The second semester part focuses on game-theoretic models for auctions and mechanism design.

We follow the book "Auction Theory" by V. Krishna. We cover:
- Auctions with Private Independent Values.
- Mechanism Design.
- Applications.

Teaching and learning methods
Semester 1: 16 lectures, 4 exercise classes (within the lecture time slots) and 2 small-group tutorial/feedback meetings

Semester 2: Lectures and exercise classes.

Assessment methods

Weight	Description
10	Assignments
40	Exam (Semester 1)
40	Exam (Semester 2)
5	Take-home test 1
5	Take-home test 2

Feedback methods
Semester 1:
- Students can get feedback and revision support at small-group tutorial meetings and
  weekly office hours.

Semester 2:

- Tutorial feedback.
- Office hours.
- Mock Exam

Requisites
ECON20120 Math Econ

Available as free choice? Y

Recommended reading
Semester 1:

- R. Gibbons, "A Primer in Game Theory", 1992.
- M. Maschler, E. Solan, and S. Zamir, "Game Theory", Cambridge University Press, 2013.

This reading is supplementary to the lectures and is optional. The 1st Semester part of the module is self-contained, and no external texts or resources are required to fulfil its objectives. Electronic pdf copies of all course materials (lecture notes/slides, exercises and answers) will be posted to the web during the semester. They are sufficient for studying and revising the course.

Semester 2:

- V Krishna, "Auction Theory" (2002). Textbook.
- M. Maschler, E. Solan, and S. Zamir, "Game Theory", Cambridge University Press, 2013.
- K Sydsaeter et al, "Essential Mathematics for Economic Analysis" (FT Press, 2008).
- K Sydsaeter et al, "Further Mathematics for Economic Analysis" (FT Press, 2008).

The textbook by V. Krishna is an essential reading material for the 2nd Semester part of the course. Short lecture summaries will be supplied after each lecture, but they shouldn't and cannot replace thorough reading, preparation for class and self work. The other books on the list are recommended, and fully sufficient, for revising the course and preparing the examination.

1st Semester
16 lectures, 4 example classes and 2 tutorial/feedback meetings

2nd Semester
16 lectures and 7 example classes

Micro Econometrics

ECON 30342

Credit rating 10
ECTS credits 5

Semester 1

Unit coordinator: ???

School of Social Sciences
Economics
Undergraduate

Level 3

FHEQ level ' Last part of a Bachelors'

Marketing course unit overview

Course unit overview
The aims of this course are: to further students' appreciation and working knowledge of techniques used in contemporary economic modelling, and so develop the tools required to analyse datasets covering a distribution of individuals, households or firms observed at a single point in time or over time multiple time periods. The course will be of interest to those studying microeconomics or related areas (e.g. labour economics, public economics, and development economics) and/or finance. The course will be useful to students who wish to pursue more advanced applied economics courses later in their career.
After completing this unit, ECON30341 students will: (i) demonstrate a clear understanding of how the regression model is used when analysing cross-section data; (ii) know how to use, and interpret the output from the econometric package STATA; (iii) understand what is meant by a causal effect; (iv) appreciate the various difficulties in estimating causal effects, particularly in the presence of unobserved heterogeneity, and understand the way in which econometric methods, in combination with economic models, can address these difficulties when dealing with cross-sectional and panel data.

Aims
The aims of this course are: to further students' appreciation and working knowledge of techniques used in contemporary economic modelling, and so develop the tools required to analyse datasets covering a distribution of individuals, households or firms observed at a single point in time or over time multiple time periods. The course will be of interest to those studying microeconomics or related areas (e.g. labour economics, public economics, and development economics) and/or finance. The course will be useful to students who wish to pursue more advanced applied economics courses later in their career.

Learning outcomes

After completing this unit, you will:
1. Demonstrate a clear understanding of how the regression model is used when analysing cross-section data.
2. Know how to use, and interpret the output from the econometric package STATA.
3. Understand what is meant by a causal effect.
4. Appreciate the various difficulties in estimating causal effects, particularly in the presence of unobserved heterogeneity, and understand the way in which econometric methods, in combination with economic models, can address these difficulties when dealing with cross-sectional data.

Employability skills

Analytical skills   Synthesis and analysis of data and critical reflection and evaluation.

Other   Computer literacy and the application of theoretical knowledge.

Syllabus
Course content includes:
examples of cross-section data; revision of the multiple regression model (focusing on dummy regressors); revision of omitted variables bias; raw and conditional differentials; parameter stability tests and Oaxaca' decomposition; understanding interaction effects; the linear probability model and the logit/probit model; pooling cross-sections across time; basic panel data methods; estimating policy effects, the difference-in-difference estimator; the simple Instrumental Variables estimator.

Teaching and learning methods
Lectures and tutorial classes.

Assessment methods

Weight	Description
80	Exam
20	Mid-term test

Feedback methods
* Tutorial feedback.
* Office hours.

Requisites
ECON31031 Econometrics

Available as free choice?   Y

Recommended reading
The main reading is:

- **Wooldridge's book (chapters 1-7, 13, 15).**

But the following book contains the entire Wooldridge book and some additional chapters on the statistical basis we expect you know. It is much cheaper and better value than the Wooldridge book alone. It is used on many of the econometrics courses at Manchester. It can be purchased from the Blackwells Bookshop.

- **Econometrics, Custom Edition for The University of Manchester, compiled by Andrews, Becker, Cortes, Masters, Mazza and Backus. ISBN 978-1-4737-2064-0.**

The course follows this text very closely, but may also refer to:

- Stock, J.H. and Watson, M.M. Introduction to Econometrics, Pearson, third edition (chapters 10-11-12) and additional references.

PDF files of the slides should be available for download from the course BB site before each lecture.

Mathematical Finance

Unit coordinator: Prof. Igor Evstigneev

ECON 30382

Credit rating 10
ECTS credits 5

Semester 2

School of Social Sciences
Economics
Undergraduate

Level 3

FHEQ level ' Last part of a Bachelors'

Course unit overview

Mathematical Finance is an area at the interface of Mathematical Economics and Finance concerned with the mathematical modelling of financial markets. A remarkable feature of Mathematical Finance is that its theoretical highlights (such as the Black-Scholes formula) turned out to be extremely important in practice. They have created new markets---primarily markets for derivative securities---based on concepts and theory developed by academics. Nowadays, the turnovers of these markets are measured in billions. This is perhaps the only example in the history of Economics when principles that have led to the emergence of a new economic reality were discovered by mathematicians "on the tip of the pen".

Standard courses on Mathematical Finance rely upon advanced mathematical techniques, first of all, stochastic calculus. This course is one of very few exceptions. It introduces students to the whole wealth of ideas of Mathematical Finance using only elementary mathematics understandable for 3rd year economics students. The course served as one of the main sources for the textbook by I.V. Evstigneev, T. Hens and K.R. Schenk-Hoppé "Mathematical Financial Economics: A Basic Introduction" (Springer, 2015), which is suggested as the main reading for students.

The syllabus covers classical topics, such as mean-variance portfolio analysis and no-arbitrage theory of derivative securities pricing. A less standard but very important topic, which is typically not covered in introductory courses on Mathematical Finance, is capital growth theory (Kelly, Cover and others). Absolutely new material, reflecting research achievements of recent years, is an introduction to new dynamic equilibrium models of financial markets combining behavioural and evolutionary principles.

Although this course assumes the knowledge of only elementary mathematical techniques suitable for undergraduate economics students, it involves rigorous reasoning---theorems, assumptions, proofs, etc., and is addressed to students inclined to mathematics. In view of the specific character of the course, lecture podcasts are typically not available for students, and attendance at lectures is

therefore particularly important. However, students registered with the DAS Service may, via their Support Plan, request that podcasts be made available to them.

Aims

The purpose of the course is to present fundamental ideas and tools developed at the interface of Mathematical Economics and Finance. A central goal is to demonstrate the use of these tools in contexts where they are indispensable and widely exploited. The course will expose students to quantitative techniques and theory that will be useful to any actor in the financial industry: a portfolio manager, a risk management consultant, or a financial analyst.

Learning outcomes

By the end of this course students will be able to:
1. Understand and apply the basic theory, tools, and terminology of Mathematical Finance.
2. Formalise real world situations by using models and techniques suggested by the theory.
3. Solve numerically typical problems related to asset pricing and risk management.

Employability skills

The demand for highly skilled experts in finance and financial economics continues to increase rapidly in the modern economy. This demand exists in the public sector (central banks, international organisations, academic institutions) and especially in the private sector (commercial banks, investment companies, hedge funds). This course is designed primarily for those students who wish to pursue a future career in the realms of financial economics and finance. It combines an introduction to fundamental principles of investment science with a solid training in the quantitative methods and theory needed for the analysis of financial markets.

Syllabus

The following topics are covered:
- The Markowitz mean-variance portfolio theory.
- Capital Asset Pricing Model (CAPM).
- Factor models: Ross-Huberman arbitrage pricing theory (APT).
- One-period and multiperiod discrete-time models of securities markets.
- Hedging strategies and pricing by no-arbitrage.
- Fundamental Theorem of Asset Pricing.
- Pricing European and American options in binomial models.
- The Black-Scholes formula (via binomial approximation).
- Growth-optimal investments and the Kelly portfolio rule.
- Evolutionary models of financial markets.

Teaching and learning methods
16 Lectures, 2 exercise classes and 2 tutorial/feedback meetings.

Assessment methods
Weight   Description
80   Exam
10   Take home test 1
10   Take home test 2

Feedback methods
Students can get feedback and additional support at small-group tutorial meetings and weekly office hours.

Requisites
ECON20120 Math Econ

Available as free choice?   Y

Recommended reading
- I. Evstigneev, T. Hens and K.R. Schenk-Hoppé, Mathematical Financial Economics, Springer, 2015.
- H. H. Panjer (Editor), Financial Economics, The Actuarial Foundation of the USA, 1998.
- D. Luenberger, Investment Science, Oxford University Press, 1998.
- S. Ross, An introduction to Mathematical Finance, Cambridge University Press, 1999.
- S. R. Pliska, Introduction to Mathematical Finance: Discrete Time Models, Blackwell Publ.,
- 1997.
- H. Föllmer and A. Schied, Stochastic Finance: An Introduction in Discrete Time, Walter de Gruyter, 2002.

This reading is supplementary to the lectures and is optional. The course is self-contained, and no external texts or resources are required to fulfill its objectives. Electronic pdf copies of all course materials (lecture notes/slides, exercises and answers) will be posted to the web during the semester.