



JÖNKÖPING UNIVERSITY  
*International Business School*

Jönköping, 30<sup>th</sup> May 2022

**Dear Applied Economics and Data Analysis student,**

I would like to take this opportunity to welcome you to our two-year Master programme in Economics, *Applied Economics and Data Analysis*, and provide you with some initial information regarding your programme as well as your first two courses. I am very happy that you chose this programme, and I can assure you that I, together with my colleagues, will do our best to provide you with a great learning experience here at JIBS.

The programme aims to build your competencies to work with economic issues and analyse large quantities of data, including programming skills. The education prepares you for positions demanding specialised analytical and methodological skills in economics. As a result, you as a graduate will have the skills to work closely with decisions of various types of organisations. You will be able to process and analyse data and present results to your colleagues and managers. These skills are important both in the private and public sector. After completing the programme, you will thus be well prepared for positions requiring either practical or scientific knowledge.

The programme starts up on Monday the 22<sup>nd</sup> of August with a formal roll call. Then, these two courses are the first ones you will take.

**Advanced Microeconomics**

This course will provide you with an introduction to the behaviour of economic agents and institutions by using standard concepts of noncooperative game theory and applies these concepts to describe and analyse market failures. Topics covered in the course are, e.g.:

- Static and dynamic games
- External effects
- Market power
- Monopoly pricing
- Adverse selection, signalling, screening
- Principal-agent problems

The coverage of the analytical tools in this course enables you to immediately apply such tools to concrete problems and extend your microeconomic foundations needed for later courses in the programme.

The literature used in the course consists of one book – Munoz-Garcia, Felix (2017). *Advanced Microeconomic Theory: An Intuitive Approach with Examples*, MIT Press – as well as additional articles supplied at the course introduction.



**Assistant Professor Andrea Schneider** ([andrea.schneider@ju.se](mailto:andrea.schneider@ju.se)),  
the examiner and main teacher in this course.  
Office: B5010

More information about the course, including the course syllabus can be found [here](#). The schedule for your programme can be found [here](#) by choosing the Applied Economics and Data Analysis.

In parallel to this course, you also take a course in mathematics, which provides a good base for later courses in both economics and econometrics.

### **Advanced Mathematics for Economics:**

In this course you are presented with mathematical tools for economic and statistical theory, including matrix algebra and dynamic mathematical systems. It also focuses on mathematical concepts useful for economics courses at the master's level or above. The contents of this course include:

- Matrix algebra: addition, multiplication, and inversion of matrices, eigenvalues, eigenvectors
- Constrained optimization with inequality constraints
- The envelope theorem
- Difference equations
- Differential equations

The literature used in the course consists of one book – Chiang, Alpha C. and Wainwright, Kevin C. (2005) *Fundamental Methods of Mathematical Economics*, 4th edition, McGraw Hill [ISBN: 007-123823-9], or later edition - and supplementary material that is provided by the teacher.



**Professor Scott Hacker** ([scott.hacker@ju.se](mailto:scott.hacker@ju.se)),  
the examiner and main teacher in this course.  
Office: B5029

More information about the course, including the course syllabus can be found [here](#) and the schedule for your programme is given above.

I – Anna Nordén – as programme director is responsible for the overall coordination of the programme courses, ensuring high programme quality and also functions as a speaking partner for you as a student, and the faculty. You are more than welcome to get in touch with me with questions regarding the programme at any time. Questions regarding the individual courses are better sent directly to the course examiners.



**Assistant Professor Anna Nordén** ([anna.norden@ju.se](mailto:anna.norden@ju.se))  
Program Director of Applied Economics and Data Analysis  
Office: B5056

**We look forward to seeing you at JIBS in August!**

**Anna and the teaching team of *Applied Economics and Data Analysis***