



## Course and Examination Fact Sheet: Spring Semester 2020

8,268: Quantitative Economic Policy

ECTS credits: 4

### Overview examination/s

(binding regulations see below)

Decentral - Presentation (in groups - all given the same grades) (60%)

Decentral - Presentation (in groups - all given the same grades) (40%)

### Attached courses

Timetable -- Language -- Lecturer

[8,268,1.00 Quantitative Economic Policy](#) -- Englisch -- [Valladares-Esteban Arnau](#)

### Course information

#### Course prerequisites

Students are expected to have a solid background in Microeconomics, Macroeconomics, and Statistics.

#### Learning objectives

The main objective of the course is to introduce students to the methodology and techniques used to quantitatively and structurally evaluate economic policies. At the end of the course, students are able to understand the scope of policy evaluation and the complementarity between reduced-form and structural modelling. They are also able to program (in Julia) and to use the fundamental techniques in computational economic methods.

#### Course content

In recent years, the increase in the availability of data and the implementation of new techniques, such as randomised control trials (RCTs), have generated a new playing field for the quantitative evaluation of policies. Some of these advances, such as those granted by RCTs, focus on the short run or static effects of policies. However, a complete policy evaluation often faces the challenge of addressing its impact on dynamic decisions (which may result in unexpected long-run outcomes) or its repercussion on market dynamics (the so-called general equilibrium effects). The improvement in computer performance of the last decades has allowed researchers to develop structural quantitative models that can shed light on these dynamic, long-run, general-equilibrium effects. These models are mathematical descriptions of the world that are solved and simulated in a computer in order to use them as laboratories to test the effects of policies.

In this course, students learn the basic concepts and techniques to develop structural models for policy evaluation. The course consists of three parts. In the first part, students learn key programming concepts and become familiar with the Julia programming language. In the second part of the course, students learn basic tools of computational methods such as Monte Carlo simulation or Dynamic Programming. In the third part, students learn to solve and simulate a life-cycle model of human capital accumulation that is used to discuss the effects on income inequality of changes in income taxation. An overview of the recent developments in income inequality research is presented and discussed.

#### Course structure

The course consists of sessions of 2 or 4 hours a week spread throughout the semester. There is a session almost every week (except during the midterm break).



## Course literature

- Lectures in Quantitative Economics (website) by Thomas J. Sargent and John Stachurski.
- Dynamic Economics by Jérôme Adda and Russell Cooper. MIT Press 2003.

## Additional course information

Arnau Valladares-Esteban is an Assistant Professor at the Department of Economics and the Swiss Institute for Empirical Economic Research of the University of St. Gallen. His research focuses on labour issues, such as labour market dynamics and earnings inequality, approached from a macro-quantitative perspective. After completing a PhD in Economics at the Barcelona Graduate School of Economics, Arnau worked as a Lecturer in Economics at the University of Southampton.

## Examination information

### Examination sub part/s

#### 1. Examination sub part (1/2)

##### Examination time and form

Decentral - Presentation (in groups - all given the same grades) (60%)

##### Remark

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##### Examination-aid rule

Practical examination

No examination-aid rule is necessary for such examination types. The rules and regulations of the University of St. Gallen apply in a subsidiary fashion.

##### Supplementary aids

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##### Examination languages

Question language: English

Answer language: English

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#### 2. Examination sub part (2/2)

##### Examination time and form

Decentral - Presentation (in groups - all given the same grades) (40%)

##### Remark

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##### Examination-aid rule

Practical examination

No examination-aid rule is necessary for such examination types. The rules and regulations of the University of St. Gallen apply in a subsidiary fashion.

##### Supplementary aids

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##### Examination languages

Question language: English

Answer language: English

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## Examination content

The examination of this course consists of replicating an academic paper which has provided a significant contribution to the literature. There are two presentations to assess the performance of students:

1. Paper content and replication strategy (40%): At about the midpoint of the semester students give a presentation in which they explain the content of the paper they are replicating (what does it do, why is it important, which methodology is used, etc.) and the strategy they plan to implement in order to replicate the results of the paper.
2. Replication results and lesson (60%): At the end of the course, students present the outcome of their replication exercise and reflect on what they have learned by working on the replication.

## Examination relevant literature

All the relevant material is posted at the Canvas site of the course at the beginning of the semester.

### Please note

Please note that this fact sheet alone is binding and has priority over any other information such as StudyNet (Canvas), personal databases or faculty members' websites and information provided in their lectures, etc.

Any possible references and links within the fact sheet to information provided by third parties are merely supplementary and informative in nature and are outside the University of St.Gallen's scope of responsibility and guarantee.

Documents and materials that have been submitted no later than the end of term time (CW21) are relevant to central examinations.

Binding nature of the fact sheet:

- Information about courses and examination time (central/decentral) and examination type starting from the beginning of the bidding on 23 January 2020
- Information about examinations (examination aid regulations, examination content, examination-relevant literature) for decentral examinations after the 4th semester week on 16 March 2020
- Information about examinations (examination aid regulations, examination content, examination-relevant literature) for central examinations as from the starting date for examination registration on 6 April 2020

Please consult the fact sheet again after these deadlines have expired.