Economics: Data Science

Become an economist with hands-on experience in processing and interpreting big data sets. With a strong foundation in statistical modeling and additional training in programming languages, you will obtain the skills to understand the economic value of data and bridge the technical expertise of data engineers and decision makers in any organization. This is a track of MSc Economics.

Program and courses

The track ‘Data Science’ trains economics students in programming languages that are used in firms, the public administration, and research to work with big data and algorithms (such as Python and R), including hands-on exercises that analyze and present big data sets from a variant of fields within economics. Moreover, it offers a deeper understanding of innovation economics, the consequences of datafication, and, thereby, how innovation affects markets, political landscapes, and our societies – and what to do about it as policy maker. Finally, your strong foundation in Econometrics and Economic Analysis gives you the ability to make sense of data from an economist’s perspective.

This is a track of MSc Economics. You can choose to follow the main program or one of the tracks.

You will follow 6 core courses of 24 ECTS in total

- **Applied Economic Analysis 1**
  For an optimal exposure to the practice of the economic analyst, here you will you get an introduction to Python, next to many other skills relevant on the labor market.
- **Applied Economic Analysis 2**
  Here you learn how to work scientifically and how to write a master thesis.
- **Methods: Econometrics 1**
- **Methods: Econometrics 2**
- **Seminar Governance of Innovation**
- **Seminar Data Science for Economics**
Electives

Choose 3 out of the following courses (18 ECTS in total):

- Seminar Labor Economics (recommended for this track)
- Seminar Environmental and Resource Economics
- Seminar The Economics and Finance of Pensions
- Seminar Financial Markets and Institutions
- Seminar Economics and Psychology of Social Norms and Strategic Behavior
- Seminar Growth and Regional Development
- Seminar Taxation
- Seminar Economics and Psychology of Risk and Time
- Seminar Competition Policy
- Seminar Financial Economics
- Free Elective

Choose 1 out of the following methods courses (3 ECTS):

- Methods: Game Theory 1
- Methods: Game Theory 2
- Methods: Experiments and Surveys

Thesis

The Master’s thesis addresses in depth a well-defined economic research question, using theory and empirics, reviewing the existing literature, and contributing to this literature.

Most students write their thesis in the Spring semester. In case you started the program end of January, which is possible but only recommended if you feel very comfortable with quantitative methods, you can write your thesis in the summer (and proceed with coursework in the next Fall semester) or write it in the Fall semester (in line with some coursework).

Examples of thesis subjects are:

- Predicting public opinion emotions through Twitter
- Privacy regulation in theory and practice
- Could the financial crisis be predicted using text analysis?
- Media Power and News Consumption in the US: 2004 and 2012
- Macroeconomic conditions and the demand for information using click data
- Safety and security in smart cities using artificial intelligence: a review
- Algorithmic decision making in justice: predictions using texts of court rulings
This is a temporary information sheet of the new Data Science track of MSc Economics at Tilburg University, starting September 2019. A complete webpage will follow soon. Students can follow the application procedure mentioned on this page in the meantime.

- CCTV cameras and crime: finding the best location
- Can we predict house price dynamics through reviews on airbnb/booking/google maps?

**Career prospects**

Upon graduating, you will have obtained the following title (as stated on your diploma): Master of Science.

Data scientists are highly sought after in today’s economy by all types of private and public organizations, as they enable those organizations to make better decisions (based on data). Students taking this track will become ‘translators’ between data miners (who have a computer science or engineering background) and economic and political decision makers, who rely on advice based on data.

**Application and admission**

**This Master’s program starts:**

End of August and end of January

**Best preparatory programs:**

A Bachelor’s degree in Economics or a similar program (e.g., a degree in Econometrics).

**Pre-Master’s program**

*Only available* for Research University students, not for students from a Dutch University of Applied Sciences (HBO).

**Tuition fees and scholarships**

Please check the information about the tuition fees and the scholarships available for international students.