

## Concentration in Modern Data Analysis

ISET is proud to announce the launch of The Concentration in Modern Data Analysis (MDA) as part of its MA in Economics program. The concentration aims to provide ISET students with expertise in data (including big data) management and analysis using modern analytical tools. The concentration is currently funded by the *Ministry of Foreign Affairs of Estonia* and is implemented in cooperation with the *University of Tartu*. Students who successfully complete the first year of studies at ISET are eligible to participate in the concentration.

### About the Concentration

The concentration includes *6 core elective courses*:

*Existing courses:*

- Advanced Econometrics (Karine Torosyan, ISET)
- Program Evaluation (Norberto Pignatti, ISET)
- Financial Econometrics (Maksym Obrizan, KSE)

*Added courses:*

- Introduction to Business Data Analytics (Rajesh Sharma, UT)
- Advanced Business Data Analytics (Rajesh Sharma, UT)
- Geospatial data analysis (Anto Aasa, UT)

Students in MDA concentration should take 5 of these courses (15 credits) during the second year (with grade C or higher). MDA students are advised to take all courses related to the concentration.

MDA students will be required to *attend seminars and research workshops* specifically designed for the concentration. MDA students will have a chance to participate in *Data Sharing Practices workshop* organized by ISET with participation of local data collecting and analytical organizations. In addition, at the end of the academic year students have to participate in the annual *Data Hackathon* organized by ISET and UT (held in Tbilisi). Student with promising MPs will be encouraged to present their work during the event.

They will also have to write a *Master Project* (MP) related to the concentration. In the case of double concentration, the topic of the MP has to reflect both concentrations.

ISET will assist students accepted into the concentration to secure an *internship* in the field, so that they build some practical experience before entering the job market. During the academic year, MDA students will have additional opportunities to interact with local data users and institutions operating in the region.

Students accepted for the concentration will not graduate until they satisfy all the requirements of the concentration: passing the required courses with at least a score of C, and successfully completing the Master Project.

**MDA timetable (major events)**

<b>MT1</b>	Student admission into MDA, individual consultations with faculty
<b>MT2</b>	Courses: Advanced Econometrics Introduction to Business Data Analytics (November 5-10) MP proposal Data Sharing Practices workshop
<b>MT3</b>	Courses: Advanced Business Data Analytics (February 3-8)
<b>MT4</b>	Courses: Geospatial Data Analysis (tentatively: March 24-30) Program Evaluation MP submission
<b>MT5</b>	Courses: Financial Econometrics MP defense workshop Data Hackathon

**Brief content of added MDA courses**

Each course will be offered as a 5-day intensive training workshop. Each day there will be 4 academic/contact hours with students, where the first 2 hours will be devoted to learning and discussing problems, relevant techniques, and solutions, while the next 2 hours will be practical, based on case studies. At the end of 5 days course, there will be a theoretical exam and a homework assignment.

***Introduction to Business Data Analytics***

Introduction to business data analytics  
Descriptive analysis  
Opinion mining  
Social network analysis 1  
Social network analysis 2

***Advanced Business Data Analytics***

Customer segmentation  
Customer Lifecycle management - regression problems  
Customer Lifecycle management - classification problems  
Cross-sell/Up-sell recommendations  
A/B Testing

***Geospatial Data Analysis (tentative)***

Introduction  
Geographical Information System (GIS)  
Quantum GIS (QGIS) intro  
Intro to spatial analysis in R  
Express analysis (choice of location)