UNIVERSITY OF LJUBLJANA | SEB School of Economics and Business

Presentation document

Economics with data science

Academic year 2025/2026

EQUIS ACCREDITED
AACSB ACCREDITED
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UNIVERSITY OF LJUBLJANA | SEB School of Economics and Business

INFORMATION ABOUT THE STUDY PROGRAMME ECONOMICS WITH DATA SCIENCE

General information

Programme	**Economics with data science**
Programme characteristics	
Level of the qualification	Level of the qualification according to the Slovenian Qualifications Framework (SQF), the European Qualifications Framework (EQF) and the European Higher Education Qualifications Framework (QF-EHEA): SQF 8; EQF 7; QF-EHEA second cycle
Name of qualification	Diploma druge stopnje / Master's degree Second cycle Master's study programme in Economics with data science
Field(s) of study:	KLASIUS-SRV: Master's education (second Bologna cycle)/Master (second Bologna cycle) (17003) ISCED: Social and behavioural science (31) KLASIUS-P-16: Economics (0311) Frascati: Social Sciences (5)
Duration of study	2 years (4 semesters)
Scope of ECTS	120 ECTS
UL member	School of Economics and Business, Kardeljeva ploščad 17, 1000 Ljubljana, Slovenija

Study programme learning outcomes

The key objectives and competencies of the Economics with data science programme are as follows:

- Key objective 1: A graduate possesses a high level of knowledge of economic theory and develops the ability to synthesise and apply it.
  - Key sub-objective 1.1: A graduate possesses good knowledge and understanding of macro and micro analysis models as a basis for an in-depth economic analysis.
  - Key sub-objective 1.2: A graduate possesses good knowledge and understanding of macro and micro analysis models as a basis for key strategic decisions at the levels of the national economy, industry and organisation.
  - Key sub-objective 1.3: A graduate is familiar with different notions and modern concepts of globalisation and is able to autonomously understand and critically evaluate the challenges of the global economy, the diversity of markets and participants in international markets as well as the guiding and development policies of international organisations and institutions.
- Key objective 2: A graduate acquires knowledge of econometric, statistical and mathematical methods as well as economic analyses, and the ability to select and employ them.
  - Key sub-objective 2.1: A graduate knows how to analyse problems at the levels of the global economy, national economy, industry, companies and organisation using advanced econometric and statistical methods.
  - Key sub-objective 2.2: A graduate knows how to analyse and interpret problems at the levels of the global economy, national economy, industry, companies and organisations using mathematical methods.

- Key objective 3: A graduate knows how to analyse economic problems and use the acquired results to adopt business decisions (at the level of companies and organisations) or formulate policies at the global level as well as the aggregate level of the economy and industry.
  - Key sub-objective 3.1: A graduate is able to analyse relevant macroeconomic indicators or microeconomic indicators.
  - Key sub-objective 3.2: A graduate is capable of researching socioeconomic relations and identify problems and find appropriate solutions.
  - Key sub-objective 3.3: A graduate is capable of adopting managerial decisions or appropriate decisions at the level of organizations, while being able to consider/ following both growth objectives and the sustainability objectives of companies, organisations, countries.
  - Key sub-objective 3.4: A graduate is capable of analysing and formulating policies for selected industries.
  - Key sub-objective 3.5: A graduate knows how to analyse, synthesise and produce solutions to complex problems in the fields of the international economy, development of global markets and functioning of international economic integrations and analyse aspects of international economics from the perspective of companies and organisations.
- Key objective 4: A graduate is capable of conducting research, advising or preparing expert contributions at a level suitable for publication and dissemination for the purpose of strategic decision-making in organisations, companies and policymaking.
  - Key sub-objective 4.1: A graduate knows how to effectively identify, collect and analyse data that are the basis for data-driven decision-making at various levels (companies and organizations, institutions, government).
  - Key sub-objective 4.2: A graduate knows how to communicate in writing and orally, research results effectively, to advise or prepare expert contributions.

Based on the substantive concept and implementation of the graduate study programme, a graduate *acquires the following* ***general competencies***:

- ability to think logically and in abstract terms, to analyse, synthesise and evaluate,
- ability to identify and resolve problems as well as formulate decisions,
- ability to think critically and comprehensively,
- ability to make independent searches, interpret and use new sources of knowledge in expert and scientific fields,
- ability to contextualise and autonomously upgrade information,
- ability to expertly and effectively use information-communication technologies (ICT) when searching, selecting, processing, presenting and forwarding data and information,
- ability to express in writing and orally their knowledge in an expert field as well as to critically evaluate it,
- good teamworking skills.

Subject-specific competencies gained in the course of the study programme:

- ability to understand economic theory and develop the ability to synthesise and apply it,
- ability to understand macro and micro analysis models and the behaviour of firms and individuals as a basis for an in-depth economic analysis,
- ability to understand macro and micro analysis models as a basis for key strategic decisions at the levels of the national economy, industry, companies and organisations,
- ability to understand econometric, statistical and mathematical methods and economic analyses as well as to select and apply them,
- ability to analyse problems at the levels of the national economy, industry and organisation using advanced data analysis methods,
- ability to analyse and interpret problems at the levels of the national economy, industry and organisation using mathematical methods,
- ability to analyse economic problems and use the acquired results to make business decisions or formulate policies at the aggregate level of the economy and industry,
- ability to analyse relevant macroeconomic indicators at the level of the economy and companies,
- ability to research socioeconomic relations in the modern world,
- ability to adopt managerial decisions or appropriate decisions at the level of organizations, being able to consider/follow both growth goals and goals sustainable behaviour of companies, organisations, countries,
- ability to analyse and formulate policies for selected industries,
- ability to conduct research, advise or prepare expert contributions at a level suitable for publication and dissemination for the purpose of strategic decision-making in organisations and policymaking,
- ability to critically understand the causes and effects in the background of complex economic processes,
- ability to use modern methods for analysing international trade in the globalisation period,
- ability to anticipate the consequences and cope with the challenges of globalisation for individuals, companies and the global economy.

Admissions Criteria

First-year enrolment is open to:

- Graduates of first-level programmes with at least 180 ECTS in the following relevant areas of study: Economics, Business and Administrative Sciences, Mathematics and Statistics, Information and Communication Technologies, or equivalent study programme obtained under current regulations in Slovenia or abroad;
- Graduates of first-level study programmes with at least 180 ECTS in unrelated areas of study or an equivalent study programme obtained under current regulations in Slovenia or abroad, if he/she has completed study obligations that are essential for the continuation of the study programme.

In cases where available spots are limited:

In cases where the number of available spots are limited, candidates are ranked based on their undergraduate GPA (70%) and the exam results of Type 2 and Type 3 undergraduate elective courses (30%).

Enrolment by transition criteria:

Candidate, who passes from one programme to the other, must meet the enrolment requirements of the other. Commission for Academic Affairs of the UL SEB defines possible additional study obligations if the study content of previous studies does not cover the content of the chosen master's study programme.

Title conferred in the original language: magister ekonomskih ved/ magistrica ekonomskih ved

Title conferred in the original language (abbreviated): mag. ekon. ved

Title conferred in English language (and title abbreviated): Master of Science (M.Sc.)

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STUDY PROGRAMME CURRICULUM
ECONOMICS WITH DATA SCIENCE

Year 1

				Contact hours									
	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Semesters	Elective
1.	0090577	Microeconomics 3	JELENA ZORIĆ, TANJA ISTENIČ	45	45	0		30	90	210	7	1st semester	no
2.	0090576	Optimization methods in economics	DAMJANA KOKOL BUKOVŠEK	45	30	0		15	120	210	7	1st semester	no
3.	0090575	Advanced Macroeconomics	IGOR MASTEN, SAŠO POLANEC	45	45	0		30	90	210	7	1st semester	no
4.	0643356	Data Mining	JURIJ JAKLIČ	21	21	0		33	135	210	7	1st semester	no
5.	0090606	Modern political economy	ANDREJ SUŠJAN	45	30	0		15	120	210	7	2nd semester	no
6.	0090578	Econometrics 2	IGOR MASTEN, SAŠO POLANEC	45	45	0		30	90	210	7	2nd semester	no
7.	0090610	Data-driven trade analysis	ČRT KOSTEVC, JOŽE DAMIJAN, KATJA ZAJC KEJŽAR	45	30	0		15	120	210	7	2nd semester	no
8.	0090611	Strategic firm behaviour, competition policy and regulation	JELENA ZORIĆ, MATEJ ŠVIGELJ, NEVENKA HROVATIN, SAŠO POLANEC	45	30	0		15	120	210	7	2nd semester	no
9.	0093766	Skills development 1	MATEJ ČERNE	0	10	0		20	90	120	4	2nd semester	yes
		Total		336	286	0	0	203	975	1800	60		

Year 2

				Contact hours									
	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Semesters	Elective
1.	0090645	Economics of knowledge, technology and growth	TJAŠA REDEK	45	30	0		15	120	210	7	1st semester	no
2.	0643359	Applied Economics with Machine Learning	ROK SPRUK	45	30	0		15	120	210	7	1st semester	no
3.	0096979	Specialised programme course 1		42	0	0		33	135	210	7	1st semester	yes
4.	0090547	Master's thesis disposition		20	7	0		13	170	210	7	1st semester	no
5.	0096981	Elective course		30	0	0		45	135	210	7	2nd semester	yes
6.	0093778	Skills development 2	MATEJ ČERNE	0	10	0		20	90	120	4	2nd semester	yes
7.	0090548	Master's thesis		0	10	0		0	620	630	21	2nd semester	no
		Total		182	87	0	0	141	1390	1800	60		

Year 2, Specialised programme courses 1

				Contact hours									
	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Semesters	Elective
1.	0093839	Comparative data analysis of economic and business systems	ALEKSANDAR KEŠELJEVIĆ, BOGOMIR KOVAČ, ROK SPRUK	30	0	12		33	135	210	7	1st semester	yes
2.	0093840	Labour Economics 2	POLONA DOMADENIK MUREN	42	0	0		33	135	210	7	1st semester	yes
3.	0093837	Behaviour economics and strategic conduct	TANJA ISTENIČ	42	0	0		33	135	210	7	1st semester	yes
		Total		114	0	12	0	99	405	630	21		

Student selects one Specialised programme course from courses Comparative Data Analysis of Economic and Business Systems, Labour Economics 2, Behaviour Economics and Strategic Conduct and Managerial Economics. In case of low enrolment in the programme, UL SEB determines the course that will be implemented.

Year 2, Elective course

				Contact hours									
	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Semesters	Elective
1.	93836	Applied international trade	ČRT KOSTEVC, JOŽE DAMIJAN	30	0	0		45	135	210	7	2nd semester	yes
2.	90906	Artificial Intelligence with Deep Learning	DAMJANA KOKOL BUKOVŠEK, SIMONA KORENJAK ČERNE	18	12	0		45	135	210	7	2nd semester	yes
3.	93835	Big Data Analytics	ALEŠ POPOVIČ, JURIJ JAKLIČ, MARKO PAHOR	30	0	0		45	135	210	7	2nd semester	yes
4.	90623	Business Cycles Models	IGOR MASTEN, SAŠO POLANEC	30	0	0		45	135	210	7	2nd semester	yes
5.	643386	Business intelligence and analytics	JURIJ JAKLIČ	30	30	15		15	120	210	7	2nd semester	yes
6.	90909	Business Simulations and Modelling	MOJCA INDIHAR ŠTEMBERGER, TOMAŽ TURK	30	0	0		45	135	210	7	2nd semester	yes
7.	90640	Corporate Governance	MATJAŽ KOMAN, POLONA DOMADENIK MUREN	30	0	0		45	135	210	7	2nd semester	yes
8.	90622	Corruption and development	JOŽE DAMIJAN	30	0	0		45	135	210	7	2nd semester	yes
9.	90612	Cultural economics	BOGOMIR KOVAČ	30	0	0		45	135	210	7	2nd semester	yes
10.	90638	Current issues of economic and institutional development in Europe	POLONA DOMADENIK MUREN, TJAŠA REDEK	30	0	0		45	135	210	7	2nd semester	yes
11.	90629	Demography	JOŽE SAMBT	30	0	0		45	135	210	7	2nd semester	yes

				Contact hours									
	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Semesters	Elective
12.	90619	Economic analysis of law	MITJA KOVAČ	30	0	0		45	135	210	7	2nd semester	yes
13.	90636	Economic Analysis of Market Institutions	BOGOMIR KOVAČ	30	0	0		45	135	210	7	2nd semester	yes
14.	90644	Economic Demography	JOŽE SAMBT	30	0	0		45	135	210	7	2nd semester	yes
15.	90620	Economic Measurement	JOŽE SAMBT	30	0	0		45	135	210	7	2nd semester	yes
16.	90637	Economic Philosophy	BOGOMIR KOVAČ	30	0	0		45	135	210	7	2nd semester	yes
17.	90614	Economics of education	POLONA DOMADENIK MUREN	30	0	0		45	135	210	7	2nd semester	yes
18.	90615	Economics of Local Communities	IRENA OGRAJENŠEK	30	0	0		45	135	210	7	2nd semester	yes
19.	90631	Economics of Public Choice	ALEKSANDAR KEŠELJEVIĆ	30	0	0		45	135	210	7	2nd semester	yes
20.	90633	Economics of Real Property	ANDREJA CIRMAN	24	0	6		45	135	210	7	2nd semester	yes
21.	90617	Economics of regulation	JELENA ZORIĆ, MATEJ ŠVIGELJ, NEVENKA HROVATIN	30	0	0		45	135	210	7	2nd semester	yes
22.	90618	Economics of Telecommunications	MATEJ ŠVIGELJ, NEVENKA HROVATIN, TOMAŽ TURK	30	0	0		45	135	210	7	2nd semester	yes
23.	90634	Economics of transition	POLONA DOMADENIK MUREN, TJAŠA REDEK	30	0	0		45	135	210	7	2nd semester	yes
24.	90616	Emerging markets economics	TJAŠA REDEK	30	0	0		45	135	210	7	2nd semester	yes

				Contact hours									
	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Semesters	Elective
25.	90613	Energy Economics	JELENA ZORIĆ, MATEJ ŠVIGELJ, NEVENKA HROVATIN	24	6	0		45	135	210	7	2nd semester	yes
26.	90632	Environmental natural recources economics and sustainable development	BOGOMIR KOVAČ	30	0	0		45	135	210	7	2nd semester	yes
27.	90621	European agenda for growth and employment	MATJAŽ KOMAN, POLONA DOMADENIK MUREN, TJAŠA REDEK	30	0	0		45	135	210	7	2nd semester	yes
28.	90627	Game Theory and Information Economics	SAŠO POLANEC	30	0	0		45	135	210	7	2nd semester	yes
29.	90628	Game Theory in Dynamic Systems	LILJANA FERBAR TRATAR	30	0	0		45	135	210	7	2nd semester	yes
30.	90635	Health Economics 2	PETRA DOŠENOVIĆ BONČA	30	0	0		45	135	210	7	2nd semester	yes
31.	90642	Industrial Organization 2	JELENA ZORIĆ, NEVENKA HROVATIN, SAŠO POLANEC	30	0	0		45	135	210	7	2nd semester	yes
32.	90625	Input-Output Analysis Models	MIROSLAV VERBIČ	30	0	0		45	135	210	7	2nd semester	yes
33.	90624	Managing in the Context of Bounded Rationality	MARKO JAKLIČ	30	0	0		45	135	210	7	2nd semester	yes
34.	90641	National accounting and input-output analysis	JOŽE SAMBT	30	0	0		45	135	210	7	2nd semester	yes
35.	90626	Post-Keynesian Economic Theory	ANDREJ SUŠJAN, MAKS TAJNIKAR	30	0	0		45	135	210	7	2nd semester	yes

				Contact hours									
	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Semesters	Elective
36.	90643	Regional Economics	TJAŠA REDEK	30	0	0		45	135	210	7	2nd semester	yes
37.	90639	Stochastic Systems	LILJANA FERBAR TRATAR	30	0	0		45	135	210	7	2nd semester	yes
38.	90630	Time-Series and Panel Data Econometrics	IGOR MASTEN, SAŠO POLANEC	30	0	0		45	135	210	7	2nd semester	yes
		Total		1116	48	21	0	1680	5115	7980	266		

Students may choose any elective course within the UL SEB or any other UL higher education institution which is properly accredited and has at least 7 ECTS and it is a course within second cycle programme. For the programme Economics with Data Science, students are offered the following courses as a priority: Artificial Intelligence with Deep Learning, Business Simulations and Modelling and Business intelligence and analytics.