



UNIVERSITY
OF LJUBLJANA

SEB

School of Economics
and Business

Presentation document

Economics with data science

Academic year 2025/2026



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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.)

STUDY PROGRAMME CURRICULUM ECONOMICS WITH DATA SCIENCE

Year 1

| | University Course Code | Course title | Lecturers | Contact hours | | | | | Individual student work | Total hours | ECTS | Semesters | Elective |
|----|------------------------|---|---|---------------|---------|-----------|--------------------|----------------------|-------------------------|-------------|------|--------------|----------|
| | | | | Lectures | Seminar | Tutorials | Clinical tutorials | Other forms of study | | | | | |
| 1. | 0090577 | Microeconomics 3 | JELENA ZORIĆ, TANJA ISTENIČ | 45 | 45 | 0 | | 15 | 105 | 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 | | 15 | 105 | 210 | 7 | 1st semester | no |
| 4. | 0643356 | Data Mining | JURIJ JAKLIČ | 21 | 21 | 0 | | 15 | 153 | 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 | | 15 | 105 | 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 | 140 | 1038 | 1800 | 60 | | |

Year 2

| | University Course Code | Course title | Lecturers | Contact hours | | | | | Individual student work | Total hours | ECTS | Semesters | Elective |
|----|------------------------|---|-------------------------|---------------|---------|-----------|--------------------|----------------------|-------------------------|-------------|------|--------------|----------|
| | | | | Lectures | Seminar | Tutorials | Clinical tutorials | Other forms of study | | | | | |
| 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 | JANEZ DOLŠAK, ROK SPRUK | 45 | 30 | 0 | | 15 | 120 | 210 | 7 | 1st semester | no |
| 3. | 0096979 | Specialised programme course 1 | | 42 | 0 | 0 | | 15 | 153 | 210 | 7 | 1st semester | yes |
| 4. | 0090547 | Master's thesis disposition | | 20 | 7 | 0 | | 15 | 168 | 210 | 7 | 1st semester | no |
| 5. | 0096981 | Elective course | | 30 | 0 | 0 | | 27 | 153 | 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 | | 15 | 605 | 630 | 21 | 2nd semester | no |
| | | Total | | 182 | 87 | 0 | 0 | 122 | 1409 | 1800 | 60 | | |

Year 2, Specialised programme courses 1

| | University Course Code | Course title | Lecturers | Contact hours | | | | | Individual student work | Total hours | ECTS | Semesters | Elective |
|----|------------------------|--|---|---------------|---------|-----------|--------------------|----------------------|-------------------------|-------------|------|--------------|----------|
| | | | | Lectures | Seminar | Tutorials | Clinical tutorials | Other forms of study | | | | | |
| 1. | 0093839 | Comparative data analysis of economic and business systems | ALEKSANDAR KEŠELJEVIČ, BOGOMIR KOVAČ, ROK SPRUK | 30 | 0 | 12 | | 15 | 153 | 210 | 7 | 1st semester | yes |
| 2. | 0093840 | Labour Economics 2 | POLONA DOMADENIK MUREN | 42 | 0 | 0 | | 15 | 153 | 210 | 7 | 1st semester | yes |

| | University Course Code | Course title | Lecturers | Contact hours | | | | | Individual student work | Total hours | ECTS | Semesters | Elective |
|-------|------------------------|---|---------------|---------------|---------|-----------|--------------------|----------------------|-------------------------|-------------|------|--------------|----------|
| | | | | Lectures | Seminar | Tutorials | Clinical tutorials | Other forms of study | | | | | |
| 3. | 0093837 | Behaviour economics and strategic conduct | TANJA ISTENIČ | 42 | 0 | 0 | | 15 | 153 | 210 | 7 | 1st semester | yes |
| Total | | | | 114 | 0 | 12 | 0 | 45 | 459 | 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

| | University Course Code | Course title | Lecturers | Contact hours | | | | | Individual student work | Total hours | ECTS | Semesters | Elective |
|----|------------------------|--|---|---------------|---------|-----------|--------------------|----------------------|-------------------------|-------------|------|--------------|----------|
| | | | | Lectures | Seminar | Tutorials | Clinical tutorials | Other forms of study | | | | | |
| 1. | 93836 | Applied international trade | ČRT KOSTEVC, JOŽE DAMIJAN | 30 | 0 | 0 | | 27 | 153 | 210 | 7 | 2nd semester | yes |
| 2. | 90906 | Artificial Intelligence with Deep Learning | DAMJANA KOKOL BUKOVŠEK, SIMONA KORENJAK ČERNE | 18 | 12 | 0 | | 27 | 153 | 210 | 7 | 2nd semester | yes |
| 3. | 93835 | Big Data Analytics | ALEŠ POPOVIČ, JURIJ JAKLIČ, MARKO PAHOR | 30 | 0 | 0 | | 27 | 153 | 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 |

| | University Course Code | Course title | Lecturers | Contact hours | | | | | Individual student work | Total hours | ECTS | Semesters | Elective |
|-----|------------------------|--|---|---------------|---------|-----------|--------------------|----------------------|-------------------------|-------------|------|--------------|----------|
| | | | | Lectures | Seminar | Tutorials | Clinical tutorials | Other forms of study | | | | | |
| 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 | | 27 | 153 | 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 | | 27 | 153 | 210 | 7 | 2nd semester | yes |
| 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 | | 27 | 153 | 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 KEŠELJEVIČ | 30 | 0 | 0 | | 45 | 135 | 210 | 7 | 2nd semester | yes |
| 20. | 90633 | Economics of Real Property | ANDREJA CIRMAN | 24 | 0 | 6 | | 27 | 153 | 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 |

| | University Course Code | Course title | Lecturers | Contact hours | | | | | Individual student work | Total hours | ECTS | Semesters | Elective |
|-----|------------------------|---|---|---------------|---------|-----------|--------------------|----------------------|-------------------------|-------------|------|--------------|----------|
| | | | | Lectures | Seminar | Tutorials | Clinical tutorials | Other forms of study | | | | | |
| 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 |
| 25. | 90613 | Energy Economics | JELENA ZORIĆ, MATEJ ŠVIGELJ, NEVENKA HROVATIN | 24 | 6 | 0 | | 27 | 153 | 210 | 7 | 2nd semester | yes |
| 26. | 90632 | Environmental natural resources 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 |

| | University Course Code | Course title | Lecturers | Contact hours | | | | | Individual student work | Total hours | ECTS | Semesters | Elective |
|-------|------------------------|--|--|---------------|---------|-----------|--------------------|----------------------|-------------------------|-------------|------|--------------|----------|
| | | | | Lectures | Seminar | Tutorials | Clinical tutorials | Other forms of study | | | | | |
| 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 |
| 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 | 1536 | 5259 | 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.