



## **Presentation of the study programme**

1<sup>st</sup> CYCLE ACADEMIC STUDY BACHELOR DEGREE  
PROGRAMME

**GEODESY AND GEOINFORMATION (BA)**

Valid from 2023/2024 | Valid study programme from 20/01/2023

## INFORMATION ABOUT THE STUDY PROGRAMME

### 1. Basic data

Programme name	<b>Geodesy and Geoinformation</b>
Programme characteristics	
Type	Academic bachelor degree programme
Cycle	First cycle
KLASIUS-SRV	Academic higher education (first Bologna cycle)/Academic higher education (first Bologna cycle) (16204)
ISCED	<ul style="list-style-type: none"> <li>architecture, urbanism and civil engineering (58)</li> </ul>
KLASIUS-P	<ul style="list-style-type: none"> <li>Geodesy and cartography (5813)</li> </ul>
Frascati	<ul style="list-style-type: none"> <li>Technical sciences (2)</li> </ul>
Level SOK	Level SOK 7
Level EOK	Level EOK 6
Level EOVK	First cycle
Areas/modules/orientations	<ul style="list-style-type: none"> <li>No subdivision (study programme)</li> </ul>
Member of University of Ljubljana	<ul style="list-style-type: none"> <li>Faculty of Civil and Geodetic Engineering, Jamova 2, 1000 Ljubljana, Slovenia</li> </ul>
Duration (years)	3
Number of ECTS per year	60
Implementation of study	full time

### 2. Basic goals of the programme

The basic goal of the academic bachelor degree programme *Geodesy and Geoinformation* is to train experts with professional skills and fundamental theoretical and practical knowledge in the fields of geodesy and geoinformation. Within elective courses, students are given the opportunity to improve their knowledge with related areas according to their interest.

Acquired knowledge:

- a broad insight into the historical development and current status of the profession in Slovenia, Europe and beyond,
- to implement and critically assess procedures related to geodesy and geoinformation,
- to further develop and strengthen professional engineering responsibility and
- comparability of the knowledge acquired to similar programmes in the region.

### 3. General competences

General competences acquired by the graduates of the bachelor study programme of *Geodesy and Geoinformation* include the ability to:

- study new technologies and methodologies independently by acquiring the bases of professional responsibility,
- communicate in oral and written form in the native and in foreign languages with special emphasis on the knowledge of foreign language terminology,
- use information and communication technologies in the fields of geodesy and geoinformation,
- connect with other professionals in working teams of different experts from various professional fields,
- manage a small surveying firm engaged in solving professional problems.

### 4. Course-related competences

With the first cycle bachelor study programme *Geodesy and Geoinformation*, the graduate acquires the following course-specific competences:

- knowledge of the role and importance of geodesy and geoinformation in modern society,

- ability to independently solve all kinds of typical surveying tasks in the areas of data capture and quality assessment as well as to make decisions related to the use of spatial information,
- ability to use modern surveying technologies and methodologies to acquire spatial data with appropriate precision or accuracy,
- knowledge of spatial data usage according to their importance, form of records, quality, resources, production and recovery,
- ability to use the measurement results and professional knowledge in:
  - maintenance of basic geodetic systems,
  - less complex building construction,
- administrative procedures to meet the needs of real estate registration,
- participation in planning, design and implementation of interventions in space,
- maintenance of geographic and cartographic systems and preparation of cartographic spatial data and
- cooperation with investors, designers and contractors.

## 5. Condition for enrolment

The conditions for the enrolment into academic first cycle bachelor degree programme Geodesy and Geoinformation are in agreement with articles 38 and 38b for the Higher Education Act, and article 115 of the Statute of the University of Ljubljana. To enrol to the academic bachelor degree programme, the candidates are required to:

- a) pass the general matura exam;
- b) pass vocational matura exam from one of the secondary school programmes Economic Technician, Electrician, Photographic Technician, Geodetic Technician, Geotechnician, Forestry Technician, Civil Engineering Technician, Graphic Technician, Chemical Technician, Agribusiness Technician, Ship Mechanical Technician, Wood Technician, Logistic Technician, Media Technician, Metallurgical Technician, Nature Conservation Technician, Environmental Conservation Technician, Navigation Technician, Mechanical Technician, Electronic Communications Technician, Mechatronic Technician, Optic Technician, Computer Technician, Security Technician, Veterinary Technician and matura exam from mathematics;
- c) finish any of the four-year secondary school programs before 1. 6. 1995.

## 6. Selection criteria when enrolment is restricted

The candidates from item a) will be selected according to:

- general success in final graduate school examination 60%
- general success in the 3<sup>rd</sup> and 4<sup>th</sup> years of the grammar school 40%

The candidates from item b) will be selected according to:

- general success in the final technical school examination 40%
- general success in the 3<sup>rd</sup> and 4<sup>th</sup> years of the secondary school 40%
- success in extra final examination in matura subject of mathematics 20%

## 7. Criteria for recognising knowledge and skills acquired before enrolment in the programme

Knowledge conforming in contents and scope to the teaching contents of the courses in the programme Geodesy and Geoinformation may be acknowledged. The recognition of knowledge and skills acquired before the enrolment is the subject of the decision by the Study Board of the Department of Geodetic Engineering of UL FGG. Decision is based on student's written application, certificates and other documents that prove successful acquisition of knowledge and the contents of the knowledge, and in accordance with the Rules on procedure and criteria for the recognition of informally acquired knowledge and skills, adopted at the 15<sup>th</sup> meeting of the UL Senate from 29.5.2007.

For the acknowledgement of knowledge and skills, the following is considered:

- certificates and other documents evidencing finished courses and other forms of education,
- evaluation of products, services, publications and other works by students,
- evaluation of knowledge acquired by the student self-educational process or empirical learning (possibility of performing study obligations without active participation at lectures, practical, seminars),
- adequate work experiences are taken into account.

Based on the approval of the acquired knowledge, the Study Board of the Department of Geodetic Engineering, UL FGG, will evaluate the knowledge with the same number of ECTS points as the number of ECTS points of the course.

## 8. Methods of the assessment

The assessment methods are in accordance with the [Statute of University of Ljubljana](#) and listed in the Course Syllabi.

## 9. Advancement conditions according to the programme

### Conditions for the advancement from one year to another

Conditions for advancement according to the study programme are harmonised with Article 151 of the Statute of the University of Ljubljana.

Students are allowed to enrol to the second study year after completing by the end of the academic year all the obligations foreseen by the study plan and achieving 60 credit points according to ECTS.

Students are allowed to enrol to the third study year after completing by the end of the academic year all the obligations foreseen by the study plan and achieving at least 54 credit points according to ECTS.

Exceptionally, students may enrol to the next year also when failing to complete all obligations defined by the study programme for the enrolment to the next study year. In this case they should provide justified reasons as defined by Article 153 of the Statute of UL (maternity, longer illness, extreme family and social circumstances, certified status of a person with special needs, active participation in top professional, cultural and sports events, active participation in the university bodies).

Considering the conditions from the above paragraph, students may also enrol to the next year when they accumulate at least 45 credit points according to ECTS. The enrolment according to the above paragraph is subject to the decision by the Study Board of the Department of Geodetic Engineering at UL FGG.

Faculty of Civil and Geodetic Engineering has been offering tutorship and supervision for its students for several years. From the very first year, students have designated supervisors for the specific year, and smaller groups of students can also have individual tutors consisting of teachers or students from higher years, who help them, select orientation, elective courses, etc.

Students with above-average study results are allowed to advance at a faster rate. An adequate decree thereof shall be adopted by the UL FGG Senate of based on a candidate's application and on opinion of the UL FGG Study Board. The decree also defines the principles of faster advancement.

### Conditions for repeated enrolment in the same year

Failing to meet all the obligations defined by the study programme for the advancement in the next year, students may enrol in the same year for the second time. They are entitled to the repeated enrolment only once for the duration of the study, provided that they achieve at least 30 credit points according to ECTS.

## 10. Transfers between study programmes

Transfer between programmes shall mean termination of education in the student's original study programme (first programme) and continuation of education in the first cycle academic study programme of Geodesy and Geoinformation

(second programme), in which a part of the completed study requirements from the first study programme are recognised as completed.

Transfers are possible from the first cycle study programmes and until their expiration. Transfers are possible also from the undergraduate study programmes adopted after June 11<sup>th</sup> 2004, where the competences of the finished studies are comparable and according to the acknowledgement criteria, at least half of the obligations according to ECTS from the first study programme related to compulsory courses of the second study programme can be acknowledged. Considering the scope of acknowledged obligations from the first study programme in the Republic of Slovenia or abroad student may enrol to the same or higher year in the second study programme. Transferring students shall fulfil the conditions for the enrolment to the second study programme.

The Study Board of the Department of Geodetic Engineering will examine applications of candidates for the transfer to the first cycle academic study programme Geodesy and Geoinformation and the scope of acknowledged obligations in the study programme individually. If in the procedure of acknowledging obligations for the purpose of the transfer the candidate is approved, the candidate may enrol to the higher year of the first cycle academic study programme Geodesy and Geoinformation. For this, the candidate should have at least the amount of credit points and those points that are required for the enrolment to a higher year of the first cycle academic study programme of Geodesy and Geoinformation.

## **11. Conditions for completion of the study**

Students finish the study by accomplishing the foreseen obligations totalling 180 credit points according to ECTS, including practical training and diploma thesis.

## **12. Conditions for completion of individual parts of the programme**

The study is uniform.

## **13. Qualification, professional or academic title (male)**

- diplomirani inženir geodezije (UN)

## **14. Qualification, professional or academic title (female)**

- diplomirana inženirka geodezije (UN)

## **15. Qualification, professional or academic title (abbreviation)**

- dipl. inž. geod. (UN)

## SYLLABUS OF STUDY PROGRAMME WITH FORESEEN COURSE COORDINATORS

### 1<sup>st</sup> year, mandatory

	Code	Course title	Lecturers	Contact hours					Independent work	Total hours	ECTS	Semesters	Elective
				Lectures	Seminar	Tutorials	Clinical tutorials	Other study forms					
1.	0033791	Mathematics I	Marjeta Kramar Fijavž, Gašper Jaklič	75	0	75	0	0	150	300	10	Winter	no
2.	0643055	Physics for geodesy	Jure Kokalj	75	15	45	0	0	135	270	9	Winter	no
3.	0033794	Software tools in geodesy	Krištof Oštir	0	45	30	0	0	75	150	5	Winter	no
4.	0165922	Introduction to geodetic engineering	Simona Savšek	30	0	0	30	0	60	120	4	Winter	no
5.	0165923	Geodetic computations	Miran Kuhar	30	0	0	30	0	60	120	4	Winter	no
6.	0033793	Mathematics II	Marjeta Kramar Fijavž, Ganna Kudryavtseva	60	0	60	0	0	120	240	8	Summer	no
7.	0033795	Civil engineering and Infrastructure	Peter Lipar, Simona Savšek	30	0	30	0	0	60	120	4	Summer	no
8.	0033797	Topographic surveying and mapping	Miran Kuhar, Tomaž Ambrožič	60	0	0	60	0	120	240	8	Summer	no
9.	0033798	Statistical methods in geodesy	Dejan Zupan, Goran Turk	30	0	30	0	0	60	120	4	Summer	no
10.	0165924	Adjustment computations I	Bojan Stopar	30	0	30	0	0	60	120	4	Summer	no
Total				420	60	300	120	0	900	1800	60		

**2<sup>nd</sup> year, mandatory**

				Contact hours											
	Code UL	Course title	Lecturers	Lectures	Seminar	Tutorials		Clinical tutorials	Other study forms	Independent work	Total hours	ECTS	Semesters	Elective	
1.	0033803	Adjustment computations II	Bojan Stopar	30	0	30	0	0	60	120	4	Winter	no		
2.	0536492	Spatial planning	Alma Zavodnik Lamovšek	30	0	0	30	0	60	120	4	Summer	no		
3.	0033801	Geodesy	Bojan Stopar	30	0	0	30	0	60	120	4	Winter	no		
4.	0033802	Cartography	Dušan Petrovič	60	0	60	0	0	120	240	8	Winter	no		
5.	0033804	Geoinformatics I	Anka Lisec	45	0	0	45	0	90	180	6	Winter	no		
6.	0033805	Introduction to data	Krištof Oštir, Matevž Dolenc	30	0	0	30	0	60	120	4	Winter	no		
7.	0536497	Photogrammetry I	Dejan Grigillo	30	0	0	45	0	75	150	5	Winter	no		
8.	0033807	Precise classical geodetic measurements	Dušan Kogoj	60	0	0	75	0	135	270	9	Summer	no		
9.	0033809	GNSS in geodesy	Bojan Stopar, Polona Pavlovčič Prešeren	60	0	0	60	0	120	240	8	Summer	no		
10.	0033808	Introduction to law	Aleš Novak, Matej Accetto, Tilen Štajnpihler Božič	30	0	30	0	0	60	120	4	Summer	no		
11.	0038943	Elective course I (UL FGG or UL)		30	0	30	0	0	60	120	4	Summer	yes		
		Total		435	0	150	315	0	900	1800	60				

**3<sup>rd</sup> year, mandatory**

	Code UL	Course title	Lecturers	Contact hours					Independent work	Total hours	ECTS	Semesters	Elective
				Lectures	Seminar	Tutorials	Clinical tutorials	Other study forms					
1.	0033813	Rural planning	Alma Zavodnik Lamovšek	30	0	0	30	0	60	120	4	Winter	no
2.	0033814	Economics and management in geodesy	Marjan Čeh, Marko Hočevár	45	0	30	0	0	75	150	5	Winter	no
3.	0033811	Engineering surveying I	Božo Koler	45	0	0	45	0	90	180	6	Winter	no
4.	0033812	Remote sensing I	Krištof Oštir	30	0	30	0	0	60	120	4	Winter	no
5.	0033815	Property law	Gregor Dugar	30	0	30	0	0	60	120	4	Winter	no
6.	0038944	Elective course II (UL FGG or UL)		60	0	45	0	0	105	210	7	Winter or summer	no
7.	0033817	Real property records and cadastres	Anka Lisec	60	0	0	50	10	120	240	8	Summer	no
8.	0033816	Real estate management and evaluation	Maruška Šubic-Kovač	30	15	45	0	0	90	180	6	Summer	no
9.	0038944	Elective course III (UL FGG or UL)		60	0	45	0	0	105	210	7	Winter or summer	no
10.	0033818	Practical training	Matevž Dolenc, Simona Savšek	6	0	0	0	80	34	120	4	Summer	no
11.	0033810	Diploma work		0	0	0	0	75	75	150	5	Summer	no
Total				396	15	225	125	165	874	1800	60		



**Elective courses**

	Code UL	Course title	Lecturers	Contact hours					Independent work	Total hours	ECTS	Semesters	Elective
				Lectures	Seminar	Tutorials	Clinical tutorials	Other study forms					
1.	0033788	Field work	Tomaž Ambrožič	0	0	0	0	90	90	180	6	Summer	yes
2.	0038952	Programming	Krištof Oštir, Matevž Dolenc	15	0	45	0	0	60	120	4	Winter or summer	yes
3.	0033786	Standards in surveying and engineering	Božo Koler, Dušan Kogoj	15	30	15	0	0	60	120	4	Winter or summer	yes
4.	0038953	Hydrography and toponomy	Dušan Petrovič	30	0	30	0	0	60	120	4	Winter or summer	yes
5.	0038954	Measurement and description of space*	Polona Pavlovčič Prešeren	30	0	20	0	10	60	120	4	Winter or summer	yes
6.	0033789	Basic computing methods for engineers	Gašper Jaklič	15	0	0	45	0	60	120	4	Summer	yes
7.	0033787	Selected topics from geodetic surveying	Aleš Marjetič, Polona Pavlovčič Prešeren	15	15	0	45	0	60	120	4	Winter	yes
8.	0538889	Close range photogrammetry	Mojca Kosmatin Fras	30	0	0	30	0	60	120	4	Summer	yes
Total				120	30	110	90	100	450	900	30		

\* the course is intended as an optional for students from other faculties (social sciences...)

## 16. Possibilities of elective courses and mobility

Elective courses are foreseen: one in the 3<sup>rd</sup> semester (4 ECTS), two in the 5<sup>th</sup> semester (4 ECTS each) and one in the 6<sup>th</sup> semester (6 ECTS). The study programme itself proposes only two professional elective courses plus Sports Education, and appropriate selection would be e.g. Field Work in the 6<sup>th</sup> semester and Computer Programming either in the 3<sup>rd</sup> or 5<sup>th</sup> semester, together with other available elective courses. Among elective courses, UL FGG recommends beside Sports Education also courses from the area of municipal or traffic infrastructure and hydrology. Among elective courses from other members of UL, UL FGG proposes especially courses from the areas of law, economy, administration, communicology, foreign languages, geomorphology, computer science, sensors, etc.

Student may transfer 30 credit points of the programme (one study semester, regardless of mandatory and elective units) from any other area of geodesy and geoinformation, provided there exists an adequate agreement signed with UL FGG.