Univerza v Ljubljani
Fakulteta za gradbeništvo in geodezijo

Presentation of the study programme

2nd cycle master study programme

CIVIL ENGINEERING (MA)

Valid from study year 2020/2021 | Valid study programme from 29/01/2020

University of Ljubljana, Faculty of Civil and Geodetic Engineering

INFORMATION ABOUT THE STUDY PROGRAMME

1. Basic data

Programme name	**Civil Engineering**
Programme characteristics	
Type	master
Cycle	Second cycle
KLASIUS-SRV	Master higher education (second cycle Bologna)/Master higher education (second cycle Bologna) (17003)
ISCED	• architecture, urbanism and civil engineering (58)
KLASIUS-P	(no information)
KLASIUS-P-16	(no information)
Frascati	• Technical sciences (2)
Level SOK	Level SOK 8
Level EOK	Level EOK 7
Level EOVK	Second cycle

Areas/modules/orientations	• No subdivision (study programme)
	• Geotechnics - Hydrotechnics (division)
	• Structural engineering (division)
	  • Interdisciplinary project study of computer-aided design of structures (module)
	  • Engineering modelling (module)
	  • Steel structures (module)
	  • Concrete and masonry structures (module)
	• Building information modelling - BIM A+ (division)
	• Infrastructural engineering (division)
	  • Municipal engineering (module)
	  • Organisation - building informatics (module)
	  • Project (module)
	  • Traffic engineering (module)

Member of University of Ljubljana	• Faculty of Civil and Geodetic Engineering, Jamova 2, 1000 Ljubljana, Slovenia
Duration (years)	2
Number of ECTS per year	60
Implementation of study	full-time, part-time

2. Basic goals of the programme

The basic goal of the 2nd cycle master study programme Civil Engineering is to educate experts with in- depth and specific knowledge and skills from the basic areas of civil engineering, and considering the chosen orientation and elective courses also with special in-depth knowledge from the individual area of civil engineering or the areas related to it.

Within the study, the student will learn about the traditional principles upgraded by the latest findings. The contents will be delivered in a contemporary way with modern technology. Students will also learn about all specifics in Slovenia and Europe resulting from special historic, socio- economical and geographic characteristics. With group work, project work and problem-oriented tasks they will get accustomed to group work, public appearance and

managing customers as well as get actively involved in research. All the acquired theoretic knowledge will be tested to the largest possible extent with appropriate practical work and with solving demanding theoretic or professionally oriented problems and projects, which will facilitate them the inclusion in practical work after the study and to understand the issues related to civil engineering.

Students acquire the necessary in-depth and specific knowledge from the basic natural sciences and computer-information courses, the knowledge from the basic courses related to civil engineering as well as specific knowledge from professional civil engineering courses. Within individual orientations and elective courses students can choose specialisation and prepare for further study within the programmes of the third cycle.

The goal of the programme is to ensure international comparability, mobility and progression, and the graduate can continue study in Europe and get a job within the European Union. The programme is harmonised with the minimum requirements of the FEANI Association, and thus also with the accreditation of the programme for the title Euro-eng. The goal is also to increase the progression of students and to provide better quality by introducing regular study, with the development of general student and teacher tutorship as well as tutorship for specific courses.

Student can test the acquired knowledge in practice within two-weak practical training in construction and similar companies that also represent the target employment areas.

The programme designed in this way results in a graduate with in-depth theoretical and expert knowledge who can find job in construction companies or individually perform the most demanding expert and development tasks from the area of civil engineering in Slovenia and in Europe.

3. General competences

General competences of the graduate of 2nd cycle master study of Civil Engineering are:

- good general information and knowledge about academic areas and scientific methods of work,
- development of abilities to setup, research, understand and creatively solve problems, principles and theories,
- critical reading and understanding of texts, independent search for knowledge and sources,
- development of the ability of critical, analytical and synthetic thinking,
- qualification for the transfer and use of theoretic knowledge into practice and solving of expert and working problems as well as interdisciplinary connections,
- development of professional and ethical responsibility,
- development of scientific literacy, public appearance and communication with customers, delivering and presenting of knowledge and results,
- possibility of using foreign expert language in written and oral communication, communication in international and national scientific circles,
- possibility of using information-communication technology,
- consideration of safety, functional, economical, environmental and ecological aspects at work,
- development of moral-ethical standards (integrity to the work with customers, unbiased advice, independence and expertise according to valid legislation),
- creating objective view to the environment and society.

4. Course-related competences

With the 2nd cycle master study programme Civil Engineering, the graduate acquires mainly the following course-specific competences:

- basic and specific expert knowledge from the area of civil engineering, mainly from the areas of design, organisation, management and execution of construction works and construction manufacturing, construction informatics, ecology, spatial planning and spatial policy,
- independent comprehensive design of demanding structures,
- independent project management in the area of civil engineering,
- understanding interaction of technical and environmental issues with the ability to conceptualise and design environment friendly structures,
- performing demanding tasks from the area of civil engineering independently and within work groups for the activities described in the first indent,
- organisation, management and performance of development activity in the area of civil engineering,

- managing the basic knowledge from the area of civil engineering (natural sciences, mathematics, informatics, mechanics, materials), ability to connect knowledge from different areas and ability for the application of the acquired knowledge,
- use of knowledge in specialised areas of civil engineering (hydraulic engineering, building structures, municipal engineering, organisation – informatics and traffic engineering),
- understanding the general structure of the basic discipline and interconnection of its sub-disciplines,
- use of information-communication technology and systems, most frequently used in practice in the area of civil engineering
- managing construction and similar companies and offices.

5. Conditions for enrolment

The 2nd cycle master study programme Civil Engineering is available to the graduates from:

a) 1st cycle study programme from the area of Civil Engineering, which consists of the whole thematic field of civil engineering,

b) 1st cycle study programme from construction management, traffic or other expert areas, if before the enrolment the candidate completes other study obligations, which are essential for the continuation of the study, totalling 10-60 ECTS; these obligations shall be defined according to the nature of expert area, and the candidates may complete them during the 1st cycle study, in programmes for additional education and by passing exams before the enrolment to the master study

c) higher education professional study programme according to the old study programme of civil engineering

d) higher education professional study programme according to the old study programme of other expert areas, if before the enrolment the candidate completes study obligations, which are essential for the continuation of the study, totalling 10–60 ECTS; candidates may complete them during the 1st cycle study, in programmes for additional education and by passing exams before the enrolment to the master study

6. Selection criteria when enrolment is restricted

In case of restricted enrolment, the following conditions shall be considered: grade obtained in the 1st cycle study (100%).

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

The student can be acknowledged the knowledge that matches the contents and scope of the study in the programme Civil Engineering. The Study Board of the Department of Civil Engineering of UL FGG takes decisions regarding the acknowledgement of knowledge and skills acquired before the enrolment, based on the student's written application, the enclosed certificates and other documents evidencing the successfully acquired knowledge and contents of this knowledge, and in accordance with the Rules on the procedure and criteria for the acknowledgement of informally acquired knowledge and skills, adopted on 29 May 2007 at the 15th meeting of the UL Senate.

For the acknowledgement of knowledge and skills the following shall be considered:
- certificates and other documents evidencing finished courses and other forms of education,
- evaluation of finished products, services, publications and other original works of the student,
- evaluation of knowledge acquired by the student based on self-education or learning from experiences (possibility of completing study obligations without participation at lectures, practical work, seminars),
- adequate work experiences.

Shall the Study Board of the department establish that the acquired knowledge may be acknowledged, this shall be evaluated with the same number of points according to ECTS as the number of points in the subject.

8. Methods of assessment

The assessment methods are in accordance with Statute of University of Ljubljana and listed in the Course Syllabi.

9. Conditions for progression through the programme

Students may enrol to subsequent year, if they complete by the end of the study year the obligations foreseen by the study plan, amounting to at least 45 ECTS.

Exceptionally students may enrol to subsequent year with at least 40 ECTS points collected if they have completed the mandatory contents in accordance with the study programme and they have justifiable reasons as defined by the UL Statute. The Study Board of the Department of Civil Engineering of UL FGG adopts the decisions about the enrolment from the above paragraph.

10. Transfers between study programmes

Transfer involves suspension of the student's educational process in the study programme of the original choice and continuation of education in another 2nd cycle master study programme of Civil Engineering (second programme), where all or part of student's successfully completed work in the original study programme is accepted as completed work.

Transfers are possible from 2nd cycle study programmes and also from undergraduate academic study programmes, until the last year of validity, adopted before 11. 06. 2004 that provide comparable competences and which cover, according to the recognition criteria, at least half of ECTS budgets from the first study programme, related to obligatory courses of the second study programme. Considering the scope of obligations recognised from the first study programme finished in the Republic of Slovenia or abroad, student may enrol to the same or higher year in the second study programme. Students changing their study programme shall comply with the conditions for the enrolment to the second study programme.

Applications of candidates changing their 2nd cycle master study programme of Civil Engineering and their study obligations in the second study programme will be discussed individually by the Study Board of the Department of Civil Engineering. If the candidate is approved at least the number of credit points that represent the condition for the enrolment to a higher year of the 2nd cycle master study programme of Civil Engineering, such candidate is allowed to enrol to a higher (second) year of the 2nd cycle master study programme of Civil Engineering.

11. Conditions for completion of the study

Students finish the study by accomplishing all the prescribed obligations totalling 120 points according to ECTS, including practical training and submission and defence of the Master thesis.

12. Conditions for completion of individual parts of the programme

The study is uniform.

13. Qualification, professional or academic title

- magister inženir gradbeništva (male)
  (second cycle graduate in civil engineering)

- magistrica inženirka gradbeništva (female)
  (second cycle graduate in civil engineering)

- magister inženir informacijskega modeliranja zgradb (BIM)
  (second cycle graduate in building information modelling (BIM))

14. Qualification, professional or academic title (abbreviation)

- mag. inž. grad.
- mag. inž. BIM

SYLLABUS OF STUDY PROGRAMME WITH FORESEEN COURSE COORDINATORS

Geotechnics – Hydrotechnics (division)

1st year, mandatory

				Contact hours									
	Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other study forms	Independent work	Total hours	ECTS	Semester	Elective
1.	1617	Mathematics 3	Gašper Jaklič	45	0	30	0	0	75	150	5	Winter	no
2.	1453	Numerical Methods	Boštjan Brank	30	0	0	30	0	60	120	4	Winter	no
3.	1488	Geotechnics of Infrastructural Facilities	Janko Logar	30	0	15	15	0	60	120	4	Winter	no
4.	1487	Hydraulic Modelling	Franci Steinman, Matjaž Četina	45	15	0	45	0	105	210	7	Winter	no
5.	1587	Hydrological Modelling	Mitja Brilly, Mojca Šraj	30	0	0	60	0	90	180	6	Winter	no
6.	1533	Elective course 1		30	0	30	0	0	60	120	4	Winter	yes
7.	1491	Seismic Engineering	Matjaž Dolšek	45	0	0	30	0	75	150	5	Summer	no
8.	1529	Modelling of Geotechnical Structures	Boštjan Pulko, Janko Logar	45	0	15	30	0	90	180	6	Summer	no
9.	1559	Numerical Modelling of Solids	Jože Korelc	45	0	0	45	0	90	180	6	Summer	no
10.	1458	Design of Building Structures	Drago Saje	30	0	0	30	0	60	120	4	Summer	no
11.	1618	Theory of Probability and Statistics	Marjeta Kramar Fijavž	30	0	30	0	0	60	120	4	Summer	no
12.	1273	Elective course 2		45	0	30	0	0	75	150	5	Summer	yes
		Total		450	15	150	285	0	900	1800	60		

2nd year, mandatory

				Contact hours									
	Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other study forms	Independent work	Total hours	ECTS	Semester	Elective
1.	1496	Project Management	Jana Šelih	30	0	0	30	0	60	120	4	Winter	no
2.	1651	River Engineering	Matjaž Mikoš	60	30	15	0	15	120	240	8	Winter	no
3.	1517	Hydraulic Structures	Andrej Kryžanowski	60	0	60	0	0	120	240	8	Winter	no
4.	1670	Experimental Methods in Geotechnical Engineering	Matej Maček, Janko Logar	45	10	0	30	5	90	180	6	Winter	no
5.	1533	Elective course 3		30	0	30	0	0	60	120	4	Winter	yes
6.	1468	Practical training	Andreja Istenič Starčič	6	0	0	0	80	34	120	4	Summer, Winter	no
7.	1671	Torrent	Matjaž Mikoš	45	0	30	0	15	90	180	6	Summer	no
8.	1752	Slope Stabilisation	Matjaž Mikoš, Matej Maček	20	5	0	30	5	60	120	4	Summer	no
9.	1626	Rock Mechanics and Underground Structures	Janko Logar, Vojkan Jovičić	45	0	0	45	0	90	180	6	Summer	yes
10.	1481	Master thesis		0	0	0	0	150	150	300	10	Summer	no
		Total		341	45	135	135	270	874	1800	60		

Elective professional courses from Geotechnics - Hydrotechnics

				Contact hours									
	Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other study forms	Independent work	Total hours	ECTS	Semester	Elective
1.	1519	Hydraulic Machines and Devices	Franc Steinman	30	0	0	30	0	60	120	4	Summer, Winter	yes
2.	1550	Hydroelectric Power	Andrej Kryžanowski	30	0	30	0	0	60	120	4	Summer, Winter	yes
3.	1602	Numerical Methods in Fluid Dynamics	Matjaž Četina	45	0	0	30	0	75	150	5	Summer, Winter	yes
4.	1329	Environmental Geotechnics	Matej Maček	30	0	30	0	15	75	150	5	Summer, Winter	yes
		Total		135	0	60	60	15	270	540	18		

Structural engineering (division)

1st year, mandatory

				Contact hours									
	Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other study forms	Independent work	Total hours	ECTS	Semester	Elective
1.	1617	Mathematics 3	Gašper Jaklič	45	0	30	0	0	75	150	5	Winter	no
2.	1453	Numerical Methods	Boštjan Brank	30	0	0	30	0	60	120	4	Winter	no
3.	1465	Building Physics	Zvonko Jagličić	30	0	15	0	0	45	90	3	Winter	no
4.	1463	Non-linear Mechanics	Igor Planinc	45	0	30	15	0	90	180	6	Winter	no
5.	1464	Structural Analysis	Tatjana Isaković	30	15	0	30	0	75	150	5	Winter	no
6.	1623	Conception of Building Structures	Matija Gams	30	15	0	0	0	45	90	3	Winter	no
7.	1533	Elective course 1		30	0	15	15	0	60	120	4	Winter	yes
8.	1466	Repair and Testing of Structures	Vlatko Bosiljkov	30	15	0	30	0	75	150	5	Summer	no
9.	1489	Non-linear Analysis of Structures	Jože Korelc	45	0	0	30	0	75	150	5	Summer	no
10.	1461	Computer-Integrated Construction	Žiga Turk	45	0	15	15	0	75	150	5	Summer	no
11.	1618	Theory of Probability and Statistics	Marjeta Kramar Fijavž	30	0	30	0	0	60	120	4	Summer	no
12.	1462	Geotechnics of Buildings	Boštjan Pulko	60	0	15	30	0	105	210	7	Summer	no
13.	1468	Practical Training	Andreja Istenič Starčič	6	0	0	0	80	34	120	4	Summer	no
		Total		456	45	150	195	80	874	1800	60		

2nd year, mandatory

				Contact hours									
	Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other study forms	Independent work	Total hours	ECTS	Semester	Elective
1.	1496	Project Management	Jana Šelih	30	0	0	30	0	60	120	4	Winter	no
2.	1497	Structural Dynamics and Earthquake Engineering	Matjaž Dolšek	60	0	0	45	0	105	210	7	Winter	no
3.	1498	Selected Chapters from Concrete and Masonry Structures	Drago Saje, Jože Lopatič, Sebastjan Bratina	45	0	0	45	0	90	180	6	Winter	no
4.	1499	Steel Structures II	Primož Može	45	0	0	30	0	75	150	5	Winter	no
5.	1500	Probabilistic Methods and Reliability of Structures	Goran Turk	30	0	0	30	0	60	120	4	Winter	no
6.	1272	Elective course 2		30	0	15	15	0	60	120	4	Winter	yes
7.	1481	Master thesis		0	0	0	0	150	150	300	10	Summer	no
		Total		240	0	15	195	150	600	1200	40		

Elective professional courses from Structural engineering

				Contact hours									
	Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other study forms	Independent work	Total hours	ECTS	Semester	Elective
1.	1559	Numerical Modelling of Solids	Jože Korelc	45	0	0	45	0	90	180	6	Summer	yes
2.	1560	Coupled Problems	Dejan Zupan, Goran Turk	30	0	0	30	0	60	120	4	Summer	yes
3.	1561	Technology of Material with Mineral Binders	Violeta Bokan-Bosiljkov	45	0	0	45	0	90	180	6	Summer	yes
4.	1562	Advanced Construction and Building Materials	Violeta Bokan-Bosiljkov	15	15	0	30	0	60	120	4	Summer	yes
5.	1552	Fire Safety	Tomaž Hozjan	45	0	0	45	0	90	180	6	Summer	yes
6.	1537	Prestressed Concrete	Jože Lopatič, Sebastjan Bratina	45	0	0	45	0	90	180	6	Summer	yes
7.	1536	Composite Structures	Primož Može	30	0	0	30	0	60	120	4	Summer	yes
8.	1553	Engineering Timber Structures	Jože Lopatič	30	0	0	30	0	60	120	4	Summer	yes
9.	1549	Shell Structures	Boštjan Brank	30	0	0	30	0	60	120	4	Summer	yes
10.	1626	Rock Mechanics and Underground Structures	Janko Logar, Vojkan Jovičić	45	0	0	45	0	90	180	6	Summer	yes
11.	1529	Modelling of Geotechnical Structures	Boštjan Pulko, Janko Logar	45	15	0	30	0	90	180	6	Summer	yes
12.	1740	Nonlinear Seismic Analysis of Reinforced Concrete Bridges	Tatjana Isaković	30	60	0	0	0	90	180	6	Summer	yes
13.	1800	Masonry Structures	Matija Gams, Vlatko Bosiljkov	30	0	30	0	0	60	120	4	Winter	yes
		Total		465	90	30	405	0	990	1980	66		

Interdisciplinary project study of computer-aided design of structures (module)

2nd year

				Contact hours									
	Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other study forms	Independent work	Total hours	ECTS	Semester	Elective
1.	1625	Interdisciplinary Seminar on Computer Aided Design of Structures	Matija Gams, Tatjana Isaković	0	90	0	60	0	150	300	10	Summer	yes
2.	1523	Information and Communication Technology for Project Work	Tomo Cerovšek, Žiga Turk	20	10	30	0	0	60	120	4	Summer	yes
3.	1531	Elective course SE		45	0	45	0	0	90	180	6	Summer	yes
		Total		65	100	75	60	0	300	600	20		

Engineering modelling (module)

2nd year

				Contact hours									
	Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other study forms	Independent work	Total hours	ECTS	Semester	Elective
1.	1559	Numerical Modelling of Solids	Jože Korelc	45	0	0	45	0	90	180	6	Summer	yes
2.	1560	Coupled Problems	Dejan Zupan, Goran Turk	30	0	0	30	0	60	120	4	Summer	yes
3.	1762	Numerical Modelling of Geotechnical Structures	Boštjan Pulko, Janko Logar	45	0	0	30	0	75	150	5	Summer	yes
4.	1602	Numerical Methods in Fluid Dynamics	Matjaž Četina	45	0	0	30	0	75	150	5	Summer, Winter	yes
		Total		165	0	0	135	0	300	600	20		

Steel structures (module)

2nd year

				Contact hours									
	Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other study forms	Independent work	Total hours	ECTS	Semester	Elective
1.	1526	Design of Steel Structures - Seminar	Primož Može	0	90	0	60	0	150	300	10	Summer	yes
2.	1574	Elective course SE 1		45	0	0	45	0	90	180	6	Summer	yes
3.	1533	Elective course SE 2		30	0	0	30	0	60	120	4	Summer	yes
		Total		75	90	0	135	0	300	600	20		

Concrete and masonry structures (module)

2nd year

				Contact hours									
	Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other study forms	Independent work	Total hours	ECTS	Semester	Elective
1.	1525	Design of Concrete and Masonry Structures - Seminar	Drago Saje, Jože Lopatič, Sebastjan Bratina	0	90	0	60	0	150	300	10	Summer	yes
2.	1531	Elective course SE 1		45	0	0	45	0	90	180	6	Summer	yes
3.	1533	Elective course SE 2		30	0	0	30	0	60	120	4	Summer	yes
		Total		75	90	0	135	0	300	600	20		

Building information modelling - BIM A+ (division)

1st year, mandatory

				Contact hours									
	Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other study forms	Independent work	Total hours	ECTS	Semester	Elective
1.	1617	Mathematics 3	Gašper Jaklič	45	0	30	0	0	75	150	5	Winter	no
2.	1453	Numerical Methods	Boštjan Brank	30	0	0	30	0	60	120	4	Winter	no
3.	1619	Geotechnics of Infrastructural Facilities	Janko Logar	45	30	45	0	0	120	240	8	Winter	no
4.	1455	Quality Control and Quality Assurance	Jana Šelih	30	0	30	0	0	60	120	4	Winter	no
5.	1456	Operative Planning and Monitoring of Projects	Jana Šelih	45	0	15	15	0	75	150	5	Winter	no
6.	1533	Elective course 1		30	0	30	0	0	60	120	4	Winter	yes
7.	1457	Real Estate Management	Maruška Šubic-Kovač	45	0	30	0	0	75	150	5	Summer	no
8.	1458	Design of Building Structures	Drago Saje	30	0	0	30	0	60	120	4	Summer	no
9.	1554	Intelligent Transport Systems	Tomaž Maher	30	0	15	0	15	60	120	4	Summer	no
10.	1485	Optimisation Methods in Civil Engineering	Marijan Žura	30	0	15	15	0	60	120	4	Summer	no
11.	1618	Theory of Probability and Statistics	Marjeta Kramar Fijavž	30	0	30	0	0	60	120	4	Summer	no
12.	1533	Elective course 2		30	0	30	0	0	60	120	4	Summer	yes
13.	1273	Elective course 3		45	0	30	0	0	75	150	5	Summer	yes
		Total		465	30	300	90	15	900	1800	60		

2nd year, mandatory

				Contact hours									
	Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other study forms	Independent work	Total hours	ECTS	Semester	Elective
1.	1786	Management of information and collaboration in BIM	Tomo Cerovšek	30	15	30	0	0	75	150	5	Winter	no
2.	1787	Modelling in Architecture and Engineering	Žiga Turk	30	15	30	0	0	75	150	5	Winter	no
3.	1788	Parametric modelling in BIM	Matevž Dolenc, Vlado Stankovski	30	15	30	0	0	75	150	5	Winter	no
4.	1789	Advanced BIM data-systems and interoperability	Tomo Cerovšek, Žiga Turk	30	15	30	0	0	75	150	5	Winter	no
5.	1790	4D, 5D, 6D Modelling and Applications	Aleksander Srdić, Marijan Žura	30	15	30	0	0	75	150	5	Winter	no
6.	1791	BIM based rehabilitation and sustainability analysis	Mitja Košir, Vlatko Bosiljkov	30	15	30	0	0	75	150	5	Winter	no
7.	1792	Master thesis		0	0	0	0	450	450	900	30	Summer	no
		Total		180	90	180	0	450	900	1800	60		

Infrastructural engineering (division)

1st year, mandatory

				Contact hours									
	Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other study forms	Independent work	Total hours	ECTS	Semester	Elective
1.	1617	Mathematics 3	Gašper Jaklič	45	0	30	0	0	75	150	5	Winter	no
2.	1453	Numerical Methods	Boštjan Brank	30	0	0	30	0	60	120	4	Winter	no
3.	1619	Geotechnics of Infrastructural Facilities	Janko Logar	45	30	45	0	0	120	240	8	Winter	no
4.	1455	Quality Control and Quality Assurance	Jana Šelih	30	0	30	0	0	60	120	4	Winter	no
5.	1456	Operative Planning and Monitoring of Projects	Jana Šelih	45	0	15	15	0	75	150	5	Winter	no
6.	1533	Elective course 1		30	0	30	0	0	60	120	4	Winter	yes
7.	1457	Real Estate Management	Maruška Šubic-Kovač	45	0	30	0	0	75	150	5	Summer	no
8.	1458	Design of Building Structures	Drago Saje	30	0	0	30	0	60	120	4	Summer	no
9.	1554	Intelligent Transport Systems	Tomaž Maher	30	0	15	0	15	60	120	4	Summer	no
10.	1485	Optimisation Methods in Civil Engineering	Marijan Žura	30	0	15	15	0	60	120	4	Summer	no
11.	1461	Computer-Integrated Construction	Žiga Turk	45	0	15	15	0	75	150	5	Summer	no
12.	1618	Theory of Probability and Statistics	Marjeta Kramar Fijavž	30	0	30	0	0	60	120	4	Summer	no
13.	1468	Practical Training	Andreja Istenič Starčič	6	0	0	0	80	34	120	4	Summer	no
		Total		441	30	255	105	95	874	1800	60		

2nd year, mandatory

				Contact hours									
	Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other study forms	Independent work	Total hours	ECTS	Semester	Elective
1.	1496	Project Management	Jana Šelih	30	0	0	30	0	60	120	4	Winter	no
2.	1474	Road Construction Machinery and Technology	Marijan Žura, Matej Maček	60	0	15	30	0	105	210	7	Winter	no
3.	1475	Urban Roads	Peter Lipar	45	0	15	15	0	75	150	5	Winter	no
4.	1479	Information Modelling of Buildings	Tomo Cerovšek	30	15	15	30	0	90	180	6	Winter	no
5.	1533	Elective course 2		30	0	30	0	0	60	120	4	Winter	yes
6.	1533	Elective course 3		30	0	30	0	0	60	120	4	Winter	yes
7.	1481	Master thesis		0	0	0	0	150	150	300	10	Summer	no
		Total		225	15	105	105	150	600	1200	40		

Elective professional courses from division Infrastructural engineering

				Contact hours									
	Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other study forms	Independent work	Total hours	ECTS	Semester	Elective
1.	1494	Traffic Flow Theory and Capacity Analysis	Tomaž Maher	45	0	0	15	0	60	120	4	Summer	yes
2.	1557	Construction planning and road maintenance	Marijan Žura	30	0	15	15	0	60	120	4	Summer	yes
3.	1482	Property Law	Ana Vlahek	30	0	30	0	0	60	120	4	Summer	yes
4.	1555	Real Estate Valuation	Maruška Šubic-Kovač	30	0	30	0	0	60	120	4	Summer	yes
5.	1493	Traffic Ecology	Tomaž Maher	30	0	15	15	0	60	120	4	Summer	yes
6.	1397	Urban Planning	Alma Zavodnik Lamovšek	30	0	30	0	0	60	120	4	Summer	yes
7.	1473	Design and Construction of Steel Buildings	Primož Može	30	15	15	0	0	60	120	4	Summer	yes
8.	1775	Engineering works and water Protection	Mario Krzyk, Nataša Atanasova, Sabina Kolbl Repinc	15	15	0	30	0	60	120	4	Summer, Winter	yes
		Total		240	30	135	75	0	480	960	32		

Municipal engineering (module)

2nd year

				Contact hours									
	Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other study forms	Independent work	Total hours	ECTS	Semester	Elective
1.	1243	Municipal and Housing Economics	Maruška Šubic-Kovač	30	15	45	0	0	90	180	6	Summer	yes
2.	1627	Water supply and sewage systems	Franc Steinman	60	30	0	60	0	150	300	10	Summer	yes
3.	1564	Project from Municipal Infrastructure	Maruška Šubic-Kovač	30	0	30	0	0	60	120	4	Summer	yes
		Total		120	45	75	60	0	300	600	20		

Organisation - building informatics (module)

2nd year

				Contact hours									
	Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other study forms	Independent work	Total hours	ECTS	Semester	Elective
1.	1476	Process Modelling and Information Systems	Tomo Cerovšek	30	0	15	15	0	60	120	4	Summer	yes
2.	1477	Selected Chapters of Building Informatics	Žiga Turk	45	0	0	45	0	90	180	6	Summer	yes
3.	1459	Management in Civil Engineering	Jana Šelih	30	0	30	0	0	60	120	4	Summer	yes
4.	1628	Organisational Planning of Construction	Jana Šelih	30	30	15	15	0	90	180	6	Summer	yes
		Total		135	30	60	75	0	300	600	20		

Project (module)

2nd year

				Contact hours									
	Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other study forms	Independent work	Total hours	ECTS	Semester	Elective
1.	1569	Construction Informatics Project	Tomo Cerovšek	0	60	0	0	0	60	120	4	Summer	yes
2.	1570	Project from Traffic Infrastructure	Marijan Žura	0	120	0	0	0	120	240	8	Summer	yes
3.	1571	Project from Municipal Economics	Maruška Šubic-Kovač	0	60	0	0	0	60	120	4	Summer	yes
4.	1631	Project from Construction Organisation and Contracting	Jana Šelih	30	30	0	0	0	60	120	4	Summer	yes
		Total		30	270	0	0	0	300	600	20		

Traffic engineering (module)

2nd year

				Contact hours									
	Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other study forms	Independent work	Total hours	ECTS	Semester	Elective
1.	1577	Road Design	Peter Lipar	30	0	15	0	0	45	90	3	Summer	yes
2.	1566	Road Seminar	Peter Lipar	0	60	0	45	0	105	210	7	Summer	yes
3.	1567	Railway Design	Marijan Žura, Peter Lipar	30	0	15	0	0	45	90	3	Summer	yes
4.	1568	Railway Seminar	Tomaž Maher	0	45	0	60	0	105	210	7	Summer	yes
		Total		60	105	30	105	0	300	600	20		

15. Possibilities of elective courses and mobility

The division Structural Engineering foresees two external elective courses (4+4 ECTS in the second and third semesters), and students shall select a master module consisting of additional professional electives from the area of structural engineering.

The division Geotechnics - Hydrotechics foresees three external elective courses (4+5 ECTS in the second and 4 ECTS in the third semester).

The division Infrastructural Engineering foresees three elective courses (4 ECTS in the second and 4+5 ECTS in the third semester). Further on, the division foresees four elective master modules in the fourth semester. Due to large variety of the syllabus at Infrastructural Engineering, students are recommended to select only electives from the division Infrastructural Engineering.

Students may choose external elective courses in any study programme of the UL or from other universities.

Students may transfer 30 ECTS of the programme (one semester, regardless of obligatory or elective units) from any programme from the area of civil engineering of any faculty in Slovenia or from abroad, provided that the UL FGG has a valid bilateral agreement with such institution.