

STUDY PROGRAMME CURRICULUM CIVIL ENGINEERING

2023/2024

Name of study programme	Civil engineering
Programme characteristics	
Type	master's
Cycle	master
University of Ljubljana members	• Faculty of Civil and Geodetic Engineering, Jamova 2, 1000 Ljubljana, Slovenija

Geo - Hydrotechnics (direction/track)

Year 1, compulsory

	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.	0034917	Mathematics 3	Gašper Jaklič	45	0	30	0	0	75	150	5	1st semester	no
2.	0034918	Finite Element Methods in Civil Engineering	Boštjan Brank	30	0	0	30	0	60	120	4	1st semester	no
3.	0034916	Geotechnics of Infrastructural Facilities	Janko Logar	30	0	15	15	0	60	120	4	1st semester	no
4.	0034920	Hydraulic Modelling	Franci Steinman, Matjaž Četina	45	15	0	45	0	105	210	7	1st semester	no
5.	0034915	Hydrological modelling	Mojca Šraj	30	0	0	60	0	90	180	6	1st semester	no
6.	0038912	Elective course SE		30	0	30	0	0	60	120	4	1st semester	yes
7.	0034921	Seismic Engineering	Matjaž Dolšek	45	0	0	30	0	75	150	5	2nd semester	no

8.	0034922	Modelling of Geotechnical Structures	Boštjan Pulko, Janko Logar	45	0	15	30	0	90	180	6	2nd semester	no
9.	0034924	Numerical modelling of solids	Jože Korelc	45	0	0	45	0	90	180	6	2nd semester	no
10.	0034923	Design of Building Structures	Drago Saje	30	0	0	30	0	60	120	4	2nd semester	no
11.	0034919	Theory of probability and statistics	Marjeta Kramar Fijavž	30	0	30	0	0	60	120	4	2nd semester	no
12.	0038913	Elective course SE		45	0	30	0	0	75	150	5	2nd semester	yes
Total				450	15	150	285	0	900	1800	60		

Year 2, compulsory

				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.	0037993	Project Management	Jana Šelih	30	0	0	30	0	60	120	4	1st semester	no
2.	0037994	River Engineering	Matjaž Mikoš	60	30	15	0	15	120	240	8	1st semester	no
3.	0037995	Hydraulic Structures	Andrej Kryžanowski	60	0	60	0	0	120	240	8	1st semester	no
4.	0037996	Experimental methods in geotechnical engineering	Janko Logar, Matej Maček	45	10	0	30	5	90	180	6	1st semester	no
5.	0038914	Elective course		30	0	30	0	0	60	120	4	1st semester	yes
6.	0037997	Practical Training	Andreja Istenič Starčič	6	0	0	0	80	34	120	4	1st semester, 2nd semester	no
7.	0037998	Torrent Control Engineering	Matjaž Mikoš	45	0	30	0	15	90	180	6	2nd semester	no

8.	0037999	Slope stabilisation	Matej Maček, Matjaž Mikoš	20	5	0	30	5	60	120	4	2nd semester	no
9.	0038000	Rock mechanics and underground structures	Janko Logar, Vojkan Jovičič	45	0	0	45	0	90	180	6	2nd semester	yes
10.	0034965	Master thesis		0	0	0	0	150	150	300	10	2nd semester	no
Total				341	45	135	135	270	874	1800	60		

Electives- Geo - hydrotechnics

				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.	0038005	Hydraulic Machines and Devices	Franc Steinman	30	0	0	30	0	60	120	4	1st semester, 2nd semester	yes
2.	0034914	Hydroelectric power	Andrej Kryžanowski	30	0	30	0	0	60	120	4	1st semester, 2nd semester	yes
3.	0038007	Numerical methods in fluid dynamics	Matjaž Četina	45	0	0	30	0	75	150	5	1st semester, 2nd semester	yes
4.	0034912	Environmental Geotechnics	Matej Maček	30	0	30	0	15	75	150	5	1st semester, 2nd semester	yes
Total				135	0	60	60	15	270	540	18		

Structural Engineering (direction/track)

Year 1, compulsory

				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.	0034917	Mathematics 3	Gašper Jaklič	45	0	30	0	0	75	150	5	1st semester	no
2.	0034918	Finite Element Methods in Civil Engineering	Boštjan Brank	30	0	0	30	0	60	120	4	1st semester	no

3.	0034955	Building Physics	Zvonko Jagličič	30	0	15	0	0	45	90	3	1st semester	no
4.	0034956	Non-linear Mechanics	Igor Planinc	45	0	30	15	0	90	180	6	1st semester	no
5.	0034957	Structural Analysis	Tatjana Isaković	30	15	0	30	0	75	150	5	1st semester	no
6.	0034958	Conception of Building Structures	Matija Gams	30	15	0	0	0	45	90	3	1st semester	no
7.	0038915	Elective course SE		30	0	15	15	0	60	120	4	1st semester	yes
8.	0034959	Repair and Testing of Structures	Vlatko Bosiljkov	30	15	0	30	0	75	150	5	2nd semester	no
9.	0034960	Non-linear Analysis of Structures	Jože Korelc	45	0	0	30	0	75	150	5	2nd semester	no
10.	0034961	Computer-Integrated Construction	Žiga Turk	45	0	15	15	0	75	150	5	2nd semester	no
11.	0034919	Theory of probability and statistics	Marjeta Kramar Fijavž	30	0	30	0	0	60	120	4	2nd semester	no
12.	0034963	Geotechnics of Buildings	Boštjan Pulko	60	0	15	30	0	105	210	7	2nd semester	no
13.	0034964	Practical Training	Andreja Istenič Starčič	6	0	0	0	80	34	120	4	2nd semester	no
Total				456	45	150	195	80	874	1800	60		

Year 2, compulsory

				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.	0034966	Project Management	Jana Šelih	30	0	0	30	0	60	120	4	1st semester	no

2.	0034967	Structural Dynamics and Earthquake Engineering	Matjaž Dolšek	60	0	0	45	0	105	210	7	1st semester	no
3.	0034968	Selected Chapters from Concrete and Masonry Structures	Drago Saje, Jože Lopatič, Sebastjan Bratina	45	0	0	45	0	90	180	6	1st semester	no
4.	0170226	Steel Structures	Primož Može	45	0	0	30	0	75	150	5	1st semester	no
5.	0034970	Probability Methods and Reliability of Structures	Goran Turk	30	0	0	30	0	60	120	4	1st semester	no
6.	0038916	Elective course		30	0	15	15	0	60	120	4	1st semester	yes
7.	0034965	Master thesis		0	0	0	0	150	150	300	10	2nd semester	no
8.	0639884	Module - BII - GR GK		75	90	0	135	0	300	600	20	1st semester, 2nd semester	yes
Total				315	90	15	330	150	900	1800	60		

Track/orientation related electives Structural Engineering

	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.	0038456	Numerical modelling of solids	Jože Korelc	45	0	0	45	0	90	180	6	2nd semester	yes
2.	0038457	Coupled problems	Dejan Zupan, Goran Turk	30	0	0	30	0	60	120	4	2nd semester	yes
3.	0038514	Technology of materials with mineral binders	Violeta Bokan-Bosiljkov	45	0	0	45	0	90	180	6	2nd semester	yes
4.	0034927	Advanced construction and building materials	Violeta Bokan-Bosiljkov	15	15	0	30	0	60	120	4	2nd semester	yes
5.	0034928	Fire Safety	Tomaž Hozjan	45	0	0	45	0	90	180	6	2nd semester	yes

6.	0038504	Prestressed concrete	Jože Lopatič, Sebastjan Bratina	45	0	0	45	0	90	180	6	2nd semester	yes
7.	0038507	Composite structures	Primož Može	30	0	0	30	0	60	120	4	2nd semester	yes
8.	0034929	Engineering Timber Structures	Jože Lopatič	30	0	0	30	0	60	120	4	2nd semester	yes
9.	0034930	Shell Structures	Boštjan Brank	30	0	0	30	0	60	120	4	2nd semester	yes
10.	0038000	Rock mechanics and underground structures	Janko Logar, Vojkan Jovičič	45	0	0	45	0	90	180	6	2nd semester	yes
11.	0038509	Modelling of Geotechnical Structures	Boštjan Pulko, Janko Logar	45	15	0	30	0	90	180	6	2nd semester	yes
12.	0034931	Nonlinear seismic analysis of reinforced concrete bridges	Tatjana Isaković	30	60	0	0	0	90	180	6	2nd semester	yes
13.	0170318	Masonry Structures	Matija Gams, Vlatko Bosiljkov	30	0	30	0	0	60	120	4	1st semester	yes
Total				465	90	30	405	0	990	1980	66		

Interdisciplinarni projektni študij računalniškega podprtega projektiranja konstrukcij (module)

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.	0038452	Interdisciplinary seminar on computer aided design of structures	Matija Gams, Tatjana Isaković	0	90	0	60	0	150	300	10	2nd semester	yes

2.	0038453	Information and Communication Technology for Project Work	Tomo Cerovšek, Žiga Turk	20	10	30	0	0	60	120	4	2nd semester	yes
3.	0041665	Elective course		45	0	45	0	0	90	180	6	2nd semester	yes
		Total		65	100	75	60	0	300	600	20		

Computational engineering (module)

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.	0038456	Numerical modelling of solids	Jože Korelc	45	0	0	45	0	90	180	6	2nd semester	yes
2.	0038457	Coupled problems	Dejan Zupan, Goran Turk	30	0	0	30	0	60	120	4	2nd semester	yes
3.	0038466	Numerical modelling of geotechnical structures	Boštjan Pulko, Janko Logar	45	0	0	30	0	75	150	5	2nd semester	yes
4.	0038007	Numerical methods in fluid dynamics	Matjaž Četina	45	0	0	30	0	75	150	5	1st semester, 2nd semester	yes
		Total		165	0	0	135	0	300	600	20		

Steel Structures (module)

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.	0038455	The Design of Steel Structures - seminar	Primož Može	0	90	0	60	0	150	300	10	2nd semester	yes
2.	0041666	Elective course		45	0	0	45	0	90	180	6	2nd semester	yes

3.	0041667	Elective course		30	0	0	30	0	60	120	4	2nd semester	yes
		Total		75	90	0	135	0	300	600	20		

Massive construction (module)

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.	0038454	The Design of Concrete and Masonry Structures Seminar	Drago Saje, Jože Lopatič, Sebastjan Bratina	0	90	0	60	0	150	300	10	2nd semester	yes
2.	0041668	Elective course		45	0	0	45	0	90	180	6	2nd semester	yes
3.	0041669	Elective GK		30	0	0	30	0	60	120	4	2nd semester	yes
		Total		75	90	0	135	0	300	600	20		

Building Information Modelling - BIM A+ (direction/track)

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.	0034917	Mathematics 3	Gašper Jaklič	45	0	30	0	0	75	150	5	1st semester	no
2.	0034918	Finite Element Methods in Civil Engineering	Boštjan Brank	30	0	0	30	0	60	120	4	1st semester	no
3.	0034994	Geotechnics of Infrastructural Facilities	Janko Logar	45	30	45	0	0	120	240	8	1st semester	no
4.	0034995	Quality Control and Quality Assurance	Jana Šelih	30	0	30	0	0	60	120	4	1st semester	no
5.	0034996	Operative Planning and	Jana Šelih	45	0	15	15	0	75	150	5	1st semester	no

		Monitoring of Projects											
6.	0038914	Elective course		30	0	30	0	0	60	120	4	1st semester	yes
7.	0034997	Real Estate Management	Daniel Kozelj, Maruška Šubic-Kovač	45	0	30	0	0	75	150	5	2nd semester	no
8.	0034923	Design of Building Structures	Drago Saje	30	0	0	30	0	60	120	4	2nd semester	no
9.	0034999	Intelligent Transport Systems	Marijan Žura	30	0	15	0	15	60	120	4	2nd semester	no
10.	0035000	Optimisation Methods in Civil Engineering	izr. prof. dr. Marijan Žura	30	0	15	15	0	60	120	4	2nd semester	no
11.	0034919	Theory of probability and statistics	Marjeta Kramar Fijavž	30	0	30	0	0	60	120	4	2nd semester	no
12.	0116816	Elective course		30	0	30	0	0	60	120	4	2nd semester	yes
13.	0116817	Elective course		45	0	30	0	0	75	150	5	2nd semester	yes
		Total		465	30	300	90	15	900	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.	0118307	Management of information and collaboration in BIM	Tomo Cerovšek	30	15	30	0	0	75	150	5	1st semester	no
2.	0118308	Modelling in Architecture and Engineering	Žiga Turk	30	15	30	0	0	75	150	5	1st semester	no
3.	0116192	Parametric modelling in BIM	Matevž Dolenc, Vlado Stankovski	30	15	30	0	0	75	150	5	1st semester	no

4.	0118310	Advanced BIM data-systems and interoperability	Tomo Cerovšek, Žiga Turk	30	15	30	0	0	75	150	5	1st semester	no
5.	0116194	4D, 5D, 6D Modelling and Applications	Aleksander Srdić, Marijan Žura	30	15	30	0	0	75	150	5	1st semester	no
6.	0118312	BIM based rehabilitation and sustainability analysis	Mitja Košir, Vlatko Bosiljkov	30	15	30	0	0	75	150	5	1st semester	no
7.	0116196	Dissertation		0	0	0	0	450	450	900	30	2nd semester	no
Total				180	90	180	0	450	900	1800	60		

Infrastructural Engineerin (direction/track)

Year 1, compulsory

	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.	0034917	Mathematics 3	Gašper Jaklič	45	0	30	0	0	75	150	5	1st semester	no
2.	0034918	Finite Element Methods in Civil Engineering	Boštjan Brank	30	0	0	30	0	60	120	4	1st semester	no
3.	0034994	Geotechnics of Infrastructural Facilities	Janko Logar	45	30	45	0	0	120	240	8	1st semester	no
4.	0034995	Quality Control and Quality Assurance	Jana Šelih	30	0	30	0	0	60	120	4	1st semester	no
5.	0034996	Operative Planning and Monitoring of Projects	Jana Šelih	45	0	15	15	0	75	150	5	1st semester	no
6.	0038917	Elective course IE		30	0	30	0	0	60	120	4	1st semester	yes
7.	0034997	Real Estate Management	Daniel Kozelj,	45	0	30	0	0	75	150	5	2nd semester	no

			Maruška Šubic-Kovač										
8.	0034923	Design of Building Structures	Drago Saje	30	0	0	30	0	60	120	4	2nd semester	no
9.	0034999	Intelligent Transport Systems	Marijan Žura	30	0	15	0	15	60	120	4	2nd semester	no
10.	0035000	Optimisation Methods in Civil Engineering	izr. prof. dr. Marijan Žura	30	0	15	15	0	60	120	4	2nd semester	no
11.	0034961	Computer-Integrated Construction	Žiga Turk	45	0	15	15	0	75	150	5	2nd semester	no
12.	0034919	Theory of probability and statistics	Marjeta Kramar Fijavž	30	0	30	0	0	60	120	4	2nd semester	no
13.	0034964	Practical Training	Andreja Istenič Starčič	6	0	0	0	80	34	120	4	2nd semester	no
Total				441	30	255	105	95	874	1800	60		

Year 2, compulsory

	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.	0034966	Project Management	Jana Šelih	30	0	0	30	0	60	120	4	1st semester	no
2.	0035003	Road Construction Machinery and Technology	izr. prof. dr. Marijan Žura, Matej Maček	60	0	15	30	0	105	210	7	1st semester	no
3.	0035004	Urban Roads	Peter Lipar	45	0	15	15	0	75	150	5	1st semester	no
4.	0035005	Information Modelling of Buildings	Tomo Cerovšek	30	15	15	30	0	90	180	6	1st semester	no
5.	0038917	Elective course IE		30	0	30	0	0	60	120	4	1st semester	yes

6.	0038914	Elective course		30	0	30	0	0	60	120	4	1st semester	yes
7.	0034965	Master thesis		0	0	0	0	150	150	300	10	2nd semester	no
8.	0639885	Module - BII - GR NG		120	45	75	60	0	300	600	20	2nd semester	yes
Total				345	60	180	165	150	900	1800	60		

Track/orientation related electives Infrastructural engineering

	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.	0038585	Traffic flow theory and capacity analysis	Marijan Žura	45	0	0	15	0	60	120	4	2nd semester	yes
2.	0034979	Construction planning and road maintenance	izr. prof. dr. Marijan Žura	30	0	15	15	0	60	120	4	2nd semester	yes
3.	0034978	Property Law	Ana Vlahek	30	0	30	0	0	60	120	4	2nd semester	yes
4.	0034981	Real Estate Valuation	Maruška Šubic-Kovač	30	0	30	0	0	60	120	4	2nd semester	yes
5.	0034980	Traffic Ecology	Peter Lipar	30	0	15	15	0	60	120	4	2nd semester	yes
6.	0034976	Urban Planning	Alma Zavodnik Lamovšek	30	0	30	0	0	60	120	4	2nd semester	yes
7.	0038588	Design and construction of steel buildings	Primož Može	30	15	15	0	0	60	120	4	2nd semester	yes
8.	0109879	Engineering works and water Protection	Mario Krzyk, Nataša Atanasova, Sabina Kolbl Repinc	15	15	0	30	0	60	120	4	1st semester, 2nd semester	yes
Total				240	30	135	75	0	480	960	32		

Municipal Engineering (module)

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.	0038559	Municipal and Housing Economics	Daniel Kozelj, Maruška Šubic-Kovač	30	15	45	0	0	90	180	6	2nd semester	yes
2.	0038560	Water supply and sewage systems	Franc Steinman, Mario Krzyk	60	30	0	60	0	150	300	10	2nd semester	yes
3.	0038561	Project from municipal infrastructure	Daniel Kozelj, Maruška Šubic-Kovač	30	0	30	0	0	60	120	4	2nd semester	yes
Total				120	45	75	60	0	300	600	20		

Organisation – Building Informatics (module)

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.	0038562	Process modelling and information systems	Tomo Cerovšek	30	0	15	15	0	60	120	4	2nd semester	yes
2.	0038563	Selected chapters of building informatics	Žiga Turk	45	0	0	45	0	90	180	6	2nd semester	yes
3.	0038564	Management in civil engineering	Jana Šelih	30	0	30	0	0	60	120	4	2nd semester	yes
4.	0038576	Organisational planning of construction	Jana Šelih	30	30	15	15	0	90	180	6	2nd semester	yes
Total				135	30	60	75	0	300	600	20		

Project (module)

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.	0038577	Construction informatics project	Tomo Cerovšek	0	60	0	0	0	60	120	4	2nd semester	yes
2.	0038578	Project from traffic infrastructure	Marijan Žura	0	120	0	0	0	120	240	8	2nd semester	yes
3.	0038579	Project from municipal economics	Daniel Kozelj, Maruška Šubic-Kovač	0	60	0	0	0	60	120	4	2nd semester	yes
4.	0038580	Project from construction organisation and contracting	Jana Šelih	30	30	0	0	0	60	120	4	2nd semester	yes
Total				30	270	0	0	0	300	600	20		

Traffic Engineering (module)

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.	0038581	Road Design	Peter Lipar	30	0	15	0	0	45	90	3	2nd semester	yes
2.	0038582	Road seminar	Peter Lipar	0	60	0	45	0	105	210	7	2nd semester	yes
3.	0038583	Railway design	Marijan Žura, Peter Lipar	30	0	15	0	0	45	90	3	2nd semester	yes
4.	0038584	Railway seminar	Peter Lipar	0	45	0	60	0	105	210	7	2nd semester	yes
Total				60	105	30	105	0	300	600	20		