

PART TWO: INFORMATION ON DEGREE PROGRAMMES

GENERAL DESCRIPTION

FACULTY OF CIVIL ENGINEERING

NAME AND ADDRESS

UNIVERSITY OF MARIBOR
FACULTY OF CIVIL ENGINEERING
Smetanova ulica 17
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SLOVENIA

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Acting Dean:

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Mirjana Babić

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Lifelong Learning Programme/Erasmus Coordinators:

Civil Engineering: Assist. Prof. Dr. Simon Šilih

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Architecture: Dr. Kaja Pogačar

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HISTORY

The civil engineering studies started in Maribor in the academic year 1969/61 with the establishment of the Technical College which was founded by a decree passed by the National Assembly on 26 November 1959. In spite of great interest, only 128 students were enrolled in the first term due to lack of space. In the first two terms students attended the same courses; options were given in the second year when students could choose between a course in Civil Engineering and a course in Sanitary Engineering.

In 1973, the Technical College developed into the Higher Technical School and later, in 1985, the Faculty of Technical Sciences was founded. Within the Higher Technical School, the Department of Civil Engineering started its undergraduate studies in the autumn term of 1975. Postgraduate studies leading to master's and doctoral degrees were introduced in 1982. Maribor thus provided possibilities to obtain graduate and post-graduate degrees leading to the titles of Graduated Engineer, Specialist in Science, Master of Science and Doctor of Science.

In the academic year 1993/94, two new programmes were introduced: Traffic Engineering and an interdisciplinary course in Industrial Engineering within Civil Engineering which was a joint programme provided by the Faculty of Technical Sciences and Faculty of Business and Economics.

In 1995, the Faculty of Civil Engineering was founded. The study programmes given by the Faculty are being continually developed and updated, which adds to the enhancement of their quality.

MISSION AND VISION OF THE FACULTY OF CIVIL ENGINEERING

MISSION

At the Faculty, we create, develop and expand engineering know-how in the field of civil engineering and related engineering fields. To the maximum extent and in the best way possible, we transfer the knowledge to our students and the profession, enriching the lives and creative work of the graduates and the economy.

VISION

In civil engineering and the more closely related engineering fields, the Faculty will be recognizable both in Slovenia and internationally; while in specific, narrower fields, it will be comparable even with the world's best faculties. It will develop and execute its educational and research programmes in conformance with the highest standards of engineering and human values, through close collaboration with the profession and related institutions, through responsible and mentor-minded relationship towards students and collegial relationships among co-workers. All of this will, to the maximum extent possible, incite and develop the motivation, potential, knowledge, appreciation, creativity and abilities possessed by students, teaching staff and researchers alike.

BODIES OF THE FACULTY OF CIVIL ENGINEERING

ACTING DEAN OF THE FACULTY OF CIVIL ENGINEERING

Prof. Dr. Miroslav Premrov

Acting Vice Dean for Study Programmes:

Assoc. Prof. Dr. Boštjan KOVAČIČ

Lifelong Learning Programme/Erasmus Coordinators:

Civil Engineering: Assist. Prof. Dr. Simon ŠILIH

Architecture: Dr. Kaja Pogačar

Vice Dean for Science and Research:

Prof. Dr. Bruno CVIKL

Head of Postgraduate Programmes:

Prof. Dr. Andrej UMEK

Vice Dean for Economic and Financial Affairs:

Assoc. Prof. Dr. Stanislav ŠKRABL

Student Vice Dean:

Matej MOHARIČ

Vice Dean for International and Interuniversity Co-operation:

Prof. Dr. Stojan KRAVANJA

General Secretary of the Faculty of Civil Engineering:

Mirjana BABIČ

THE SENATE

The Senate of the Faculty is the most senior academic and professional body, constituted of members of the teaching faculty as representatives of scientific and artistic disciplines and professional fields, as well as student representatives. The Senate is convened and headed by prof. dr. Miroslav Premrov.

MEMBERS OF THE FACULTY SENATE

Prof. Dr. Miroslav PREMROV
Prof. Dr. Ludvik TRAUNER
Prof. Dr. Renata JECL
Assoc. Prof. Dr. Metka SITAR
Prof. Dr. Bruno CVIKL
Prof. Dr. Stojan KRAVANJA
Assist. Prof. Dr. Marjan LEP
Prof. Dr. Mirko PŠUNDER
Prof. Dr. Danijel REBOLJ
Assoc. Prof. Dr. Drago SEVER
Prof. Dr. Tomaž TOLLAZZI
Prof. Dr. Andrej UMEK
Prof. Dr. Borut ZALAR
Assoc. Prof. Dr. Stanislav ŠKRABL

Matic UŽMAH, Student
Doroteja HREN, Student
Aleš ŽIBERT, Student
Matej MOHARIČ, Student

MANAGING BOARD

The Managing Board is the most senior managing body of the Faculty, constituted of the following five members:

Prof. Dr. Miroslav PREMROV – President
Assoc. Prof. Dr. Stanislav ŠKRABL
Prof. Dr. Tomaž TOLLAZZI
Matej MOHARIČ, Student
Mirjana BABIČ – Secretary

PERMANENT COMMITTEE OF THE FACULTY OF CIVIL ENGINEERING

Committee for Study Affairs
Committee for Science and Research
Committee for the Award of Titles
Committee for Promotion
Committee for Information Technology and Publishing
Committee for International Co-operation
Committee for Quality Assurance

Internal organisational units are chairs, institutes and the office of the dean.

CHAIRS

- Chair of Geotechnics (Head: Prof. Dr. Ludvik Trauner)
 - Laboratory for Soil Mechanics (Head: Assoc. Prof. Dr. Bojan Žlender)
 - Centre for Geotechnical Research (Head: Assoc. Prof. Dr. Stanislav Škrabl)
- Chair of Hydraulic Engineering (Head: Prof. Dr. Renata Jecl)
 - Centre for Hydraulic Engineering (Head: Matjaž Nekrep Perc, BSc Civil Eng)
- Chair of Mechanics of Structures (Head: Prof. Dr. Andrej Umek)
 - Centre for Mechanics of Structures (Head: Assoc. Prof. Dr. Matjaž Skrinar)
- Chair of Civil Engineering Structures (Head: Prof. Dr. Branko Bedenik)
 - Centre for Structural Analysis (Head: Prof. Dr. Branko Bedenik)
- Chair of Metallic Structures (Head: Prof. dr. Stojan Kravanja)
 - Centre for Metallic Structures (Head: Prof. dr. Stojan Kravanja)
- Chair of Technology of Building (Head: Prof. Dr. Mirko Pšunder)
 - Centre for Building Organisation, Technology and Economics (Head: Assist. Prof. Dr. Andrej Štrukelj)
- Chair of Materials (Head: Assoc. Prof. Dr. Stanislav Škrabl)
 - Laboratory for Materials and Testing of Structures (Head: Samo Lubej, BSc Civil Eng.)
- Chair of Traffic Facilities (Head: Prof. Dr. Tomaž Tollazzi)
 - Centre for Road Building (Head: Assoc. Prof. Dr. Tomaž Tollazzi)
- Chair of Traffic Engineering and Safety in Traffic (Head: Assist. Prof. Dr. Marjan Lep)
 - Centre for Traffic Engineering and Safety in Traffic (Head: Assist. Prof. Dr. Matjaž Šraml)
 - Centre for Mobility Research (Head: Assist. Prof. Dr. Marjan Lep)
- Chair of Traffic Technology and Organisation (Head: Assoc. Prof. Dr. Drago Sever)
 - Centre for Traffic Technology and Organisation (Head: Assoc. Prof. Dr. Drago Sever)
 - Centre for Traffic Economics (Head: Dr. Stanislav Božičnik)
- Chair of Architecture and Spatial Planning (Head: Assoc. Prof. Dr. Metka Sitar)
 - Centre for Urban Planning and Environmental Protection (Head: Assist. Prof. Uroš Lobnik)
- Chair of Construction and Transportation Informatics (Head: Prof. Dr. Danijel Rebolj)
 - Centre for Information Technology in Construction (Head: Nenad Čuš Babič, MSc.)

- Chair of Applied Physics (Head: Prof. Dr. Bruno Cvikl)
 - Centre for Applied Physics (Head: Assoc. Prof. Dr. Dean Korošak)
- Chair of General Subjects (Head: Prof. Dr. Borut Zalar)
 - Centre for Geodesy (Head: Assist. Prof. Dr. Boštjan Kovačič)

INSTITUTES

Institute for Civil and Traffic Engineering
Head: Assoc. Prof. Dr. Stanislav ŠKRABL
Deputy Head: Prof. Dr. Tomaž TOLLAZZI

Institute for Civil Engineering
Head: Prof. Dr. Tomaž TOLLAZZI

Institute for Geotechnics
Head: Prof. Dr. Ludvik TRAUNER

Institute for Traffic Sciences
Head: Assoc. Prof. Dr. Drago SEVER

Institute for Architecture and Spatial Planning
Head: Assoc. Prof. Dr. Metka SITAR

Institutes organise and coordinate the work of centres and laboratories functioning within individual Chairs.

[HOME](#)

The Faculty of Civil Engineering offers undergraduate (1st degree study programmes) and postgraduate study programmes (2nd and 3th degree study programmes):

1st degree study programmes

University study programme

[Civil Engineering](#)

[Traffic Engineering](#)

[Industrial Engineering in Civil Engineering](#)

[Architecture](#)

Professionally Study Programme

[Civil Engineering](#)

[Traffic Engineering](#)

2nd degree Study Programmes

[Civil Engineering](#)

[Traffic Engineering](#)

[Industrial Engineering in Civil Engineering](#)

[Architecture](#)

3th degree study programmes

[Civil Engineering](#)

[Traffic Engineering](#)

[Nuclear Engineering and Technologies](#)

1st D E G R E E S T U D Y P R O G R A M M E S**1 UNIVERSITY STUDY PROGRAMME OF CIVIL ENGINEERING****1.1 QUALIFICATION AWARDED**

The Faculty of Civil Engineering offers under-graduate 1st degree study programme to obtain a university degree in Civil Engineering.

University study programmes last 3 years (6 terms). The courses are devised so as to provide the student with academic knowledge as well as the knowledge of the methodology of scientific and research work. The students who completed study programme and successful diploma defence obtain professional B.Sc. degree titled: DIPLOMIRANI INŽENIR GRADBENIŠTVA (UN) / DIPLOMIRANA INŽENIRKA GRADBENIŠTVA (UN)

1.2 ADMISSION REQUIREMENTS**Duration of studies**

Studies last for 3 years (6 terms of courses) with 180 (6x30) ECTS points.

Enrolment

The enrolment in university study programme Civil Engineering is possible if:

- a. the student has passed matura examination,
- b. the student has passed vocational matura examination in the any secondary school program and the examination in matura subject of mathematics or foreign language, if he has passed Mathematics as the vocational matura examination,
- c. the student has completed any secondary school programme before 01.06.1995.

If only a limited number of students are admitted, the candidates from the a) and c) are selected according to the following criteria:

- general performance in matura examination or secondary school leaving examination 60 % points
- general performance in the 3rd and 4th year of the secondary school 40 % points

The candidates from the b) are selected according to:

- general performance in vocational matura examination 40 % points
- general performance in the 3rd and 4th year of the secondary school 40 % points
- degree in matura subject 20 % points

Enrolment places

	Full-time	Part-time
Civil Engineering – University Study Programme	100	20

Part-time Studies

The Centre for Part-time Studies has its seat at the address: Faculty of Civil Engineering, Smetanova 17, tel. (02)2294 310.

Part-time studies will be offered if there are sufficient applicants.

Enrolment conditions for the 2nd academic year

Students progress to the 2nd year if they have collected at least 50 ECTS by the exams of the 1st year, they must pass the exams in following subjects: Mathematics A – Calculus, Mathematics B - Linear Algebra, Physics, Computer and Information science, Architectural Constructions, Statics and Engineering Materials.

Students, who re-enter the 1st year or take a gap year, have to pass all the exams of the 1st year for the enrolment into the 2nd year, so they have to gather all 60 ECTS.

Enrolment conditions for the 3rd academic year

Students progress to the 3rd year if they have passed all the exams of the 1st year and gathered at least 50 ECTS by passed exams of the 2nd year. They must pass exams in following subjects of the 2nd year: Mathematics C - Vector Calculus, Mechanics of solids, Fluid mechanics, Mechanics of beams, Basis of structural design and Soil mechanics.

Students, who repeat the 2nd year or take a gap year, must pass all the exams of the 1st and the 2nd year for the enrolment into the 3rd year.

Re-entering to the academic year

Students, who do not meet conditions for further studies, may re-enter academic year, but only if they have collected at least 30 ECTS by passing exams of the year they want to re-enter. Students may re-enter just one academic year during their studies.

**FURTHER STUDIES ACCORDING TO THE CRITERIA FOR TRANSITION
(FULL-TIMER AND PART-TIME STUDIES)**

To enrol in the 2nd or 3rd year the candidates fill in a form “*Registration for enrolment in the higher educational institute in the academic year 2009/2010 for the parallel studies, for graduates or for further studies according to the criteria for transition*” and they should send it to the Faculty of Civil Engineering.

Transition BETWEEN university study programmes of the first degree

Students of university study programmes of the first degree of Faculty of Civil Engineering, University of Maribor and related university study programmes of the first degree (in the field of civil engineering, architecture, industrial engineering, mechanical engineering), who meet enrolment conditions for undergraduate university study programme Civil Engineering, are determined missing obligations which they have to pass to enrol into the second or third academic year of the new study programme.

Transition from higher professional study programme

- a. Students of higher professional study programme of Faculty of Civil Engineering, University of Maribor and related higher professional study programmes (in the field of civil engineering, architecture, industrial engineering, mechanical engineering) can be enrolled into undergraduate university study programme of Civil Engineering if they meet enrolment conditions and they have passed obligations for the next academic year in their previous study programme. For the enrolment into the second or third academic year of studies they are determined all missing obligations which they have to pass in order to take a diploma in this programme.
- b. Students of higher professional study programme Civil Engineering, who do not meet enrolment conditions for undergraduate university study programme may join this programme by passing conditions for the next academic year in their previous study programme and reach the grade-point average of at least 8.0. For the enrolment into the second or third year of study, the missing obligations are determined, which they have to pass in order to take a diploma in this programme.

Transition from existent university study programme

- a. Transition is possible after the end of the first study year (all passed exams). Students may enrol into the second year of renovated undergraduate university study programme Civil Engineering and finish study in this programme.
- b. Students who do not fulfil enrolment conditions for the second year may enrol into the first year of renovated undergraduate university study programme Civil Engineering and pass missing obligations from the existent study programme in renovated programme. Committee for Study Affairs defines subjects from the study programme in which students have to pass exams to finish the first year in the renovated study programme.
- c. The students of higher academic years of the existent university study programme Civil Engineering who want to enrol into the renovated undergraduate university study programme Civil Engineering are expected to meet transition conditions determined by the Senate of the faculty considering the structure of curriculum of the course taken by students.

Transition from other study programmes of the first degree

At the transition from other study programmes of the first degree to the undergraduate university study programme Civil Engineering, candidates have to hand in verified certificate about passed study obligations of their previous study of higher education institution as well as an official copy of verified and valid curricula for subjects and other contents of their passed study obligation. If study contents from candidates' earlier studies (subjects and other contents) do not cover contents of undergraduate university study programme Civil Engineering completely, a Committee for Study Affairs may define missing obligations from the study programme and deadline in which candidates have to pass these obligations as a condition for the enrolment into a suitable year of the new study programme.

Transition from higher educational study programmes, verified before 1994 and from short-term higher education programmes applied by the Vocational and Technical Education Act

Transitions from higher educational study programmes, verified before 1994, and from short-term higher education programmes applied by the Vocational and Technical Education Act to undergraduate university study programme Civil Engineering are not possible.

Enrolment places

	Full-time	Part-time
Civil Engineering – University Study Programme (2 nd or 3 rd year)	20	20

1.3 EDUCATIONAL AND PROFESSIONAL GOALS

- Education of well versed graduates who will be able to connect different fields innovatively when solving engineering problems.
- Enabling students a transition between related undergraduate programmes.
- Meeting needs of Slovene civil engineering by contents of expected knowledge in the field of civil engineering.
- Offering a study programme which connects all specific knowledge and specialities from the field of civil engineering which enables graduates further studies in postgraduate study programme Civil Engineering or related postgraduate programmes after finishing this programme.

- Adjustment of study programme with Bologna Declaration, which directly enables international comparability and transition.
- Educating an expert profile in the field of civil engineering according to the Europeans guidelines and enabling graduates to continue postgraduate study in institutions in Europe or worldwide as well as to get job chances in EU by international comparability of the programme.
- The goal of the new programme is assuring better future of the students with the emphasis on broader individual work under the mentorship (tutorship) in higher academic years.
- Assuring adjustment of the programme with minimum standards of FEANI due to the wish of later accreditation of the programme for a title Euro-ing. :
 - a. Mathematics and natural sciences at least 20% of all ECTS.
 - b. Higher mathematics (linear algebra, analytical geometry, differential and integral calculus, numerical analysis, operational researches ...) at least 24 ECTS.
 - c. Engineering subjects at least 60% during three-year study and 50% during longer study.
 - d. Non-engineering subjects (communication skills, economics, management, team work, law, safety, environment, languages...) around 10% of all ECTS.

Renovated undergraduate programme is thematically distributed into three modules as follows:

A1 – students gain needed basic knowledge in fundamental subjects in natural science and IT (Mathematics, Physics, Chemistry, Informatics, Geodesy, Engineering ethics...)

A2 – students gain basic knowledge in course subjects of civil engineering (Architecture, Introduction into civil engineering, Materials, Mechanics, Geology and soil mechanics, Fluid mechanics, Statistical analysis of building structures ...). Students are able to use mathematical and engineering methods to solve a simple engineering problem.

A3 – students gain basic knowledge in special civil engineering subjects (Concrete, steel and timber structures, Ground works, Hydrotechnics, Road projecting, Building physics, Building informatics, Economics, Building organisation and technology, Urban planning, ...)

The programme is modern and up-to-date and means complete renovation of previous university programme Civil Engineering according to European guidelines of Bologna Declaration and needs of Slovene and European economy. The new programme will educate modern European engineers who will be able to include into the work in industry at home as well as in European Union.

An important goal of the programme is education and preparation for further studies. The study programme will enable and stimulate students for further studies in postgraduate programme due to broad fundamental and basic expert knowledge which will direct them to choose eligible specialist degree course in postgraduate studies. There they will upgrade fundamental knowledge according to selected study course and specialize their expert knowledge. The result of such a programme will be graduates with wide range of theoretical knowledge and basic expert knowledge enabling them performance of certain tasks from the field of civil engineering. Their undergraduate knowledge will be comparable with the knowledge of undergraduate programmes of related institutions in Europe.

1.4 ACCESS TO FURTHER STUDIES

POSTGRADUATE STUDIES: PROGRAMMES AND OPTIONS

MASTER STUDY PROGRAMMES OF THE 2nd DEGREE

- Civil Engineering,
- Traffic Engineering
- Industrial Engineering within Civil Engineering and
- Architecture.

DOCTORAL STUDY PROGRAMMES OF THE 3rd DEGREE

- Civil Engineering,
- Traffic Engineering and
- Nuclear Engineering and Technologies.

1.5 COURSE STRUCTURE DIAGRAM WITH CREDITS (60 PER YEAR)

No.	Year	Subject	ECTS	ECTS per year
1.	1	Introduction To Civil Engineering and History of Technological Inventions	3	60
2.		Mathematics A - Calculus	8	
3.		Geometric Modelling & Descriptive Geometry	4	
4.		Physics	5	
5.		Computer And Information Science	3	
6.		Architectural Construction	4	
7.		Geology	3	
8.		Mathematics B – Linear Algebra	4	
9.		Digital Modelling	3	
10.		Engineering Materials	7	
11.		Statics	8	
12.		Geodesy	4	
13.		Computer Programming And Database Systems	4	
14.		Sports	-	
16.	2	Mechanics Of Solids	8	60
17.		Mathematics C - Vector Calculus	5	
18.		Fluid Mechanics	5	
19.		Transportation Routes Design	5	
20.		Construction Management	4	
21.		Technical English	3	
21.		Sports	-	
22.		Mechanics Of Beams	6	
23.		Soil Mechanics	6	
24.		Basis Of Structural Design	4	
25.	Structural Analysis	9		
26.	Urban And Regional Planning Fundamentals And Environmental Protection	5		
27.	3	Foundation Engineering	4	60
28.		Concrete Structures	8	
29.		Steel Structures	6	
30.		Timber Structures	4	
31.		Hydrotechnics	4	
32.		Building Physics	4	
33.		Construction Economics	5	
34.		Building Technology	3	
35.		Optional Subjects	18	
36.		Diploma Exam	4	

OPTIONAL SUBJECTS:

Optional subjects that can be chosen from the range of compulsory subjects of other courses or programmes are not explicitly mentioned in a programme because of many reasons:

- a range of optional subjects is dynamic and depends on changes of other programmes
- a range is too extensive,
- interdependence between programmes will be created in this way (also among different faculties and universities!).

Choosing subjects, students will be advised by tutors and mentors who will follow eligible subjects of other courses and programmes and design a range of recommendable optional subjects. In this way students can expect great variety and flexibility.

Within the credit study system Faculty of Civil offers all subjects performed at the faculty. Limitation for students of other faculties of University of Maribor is 5 students per subject. The subject selection will be carried out according to order of registration until all the places are fulfilled.

1.6 FINAL EXAMINATION, IF ANY

Type and level of qualification: Diploma thesis

Official length of study programme: 3 YEARS (90 WEEKS)

The student should present the results of the Diploma Thesis. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: Master's degree

Official length of study programme: 2 YEARS (60 WEEKS)

The student should present the results of the Master's Thesis to professional public before taking the viva examination. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: DOCTOR OF SCIENCE (PH.D.)

Official length of study programme: 3 YEARS (90 WEEKS)

According to paragraph 157 of Statute of University the postgraduate students must publish their doctoral dissertations or their results before promotion in scientific publications or as independent scientific publications in order to be accessible for scientific public.

1.7 EXAMINATION AND ASSESSMENT REGULATIONS

ECTS and institutional grading scale:

ECTS Grade	% of successful students normally achieving the grade	Slovene grading system	Definition
A	10	10	EXCELLENT - outstanding performance with only minor errors
B	25	9	VERY GOOD - above the average standard but with some errors
C	30	8	GOOD - generally sound work with a number of notable errors
D	25	7	SATISFACTORY - fair but with significant shortcomings
E	10	6	SUFFICIENT - performance meets the minimum criteria
FX	-	5	FAIL - some more work required before the credit can be awarded
F	-	1-4	FAIL - considerable further work is required

ECTS credits:

1 full academic year	=	60 credits
1 semester	=	30 credits
1 term/trimester	=	20 credits

1.8 ECTS DEPARTMENTAL CO-ORDINATOR

Committee for ECTS:

- Assist. Prof. Dr. Bojana DOLINAR (Chairman of Committee)
- Assoc. Prof. Dr. Matjaž SKRINAR (member)
- Branko BOHINEC (member)

2 UNIVERSITY STUDY PROGRAMME OF TRAFFIC ENGINEERING

2.1 QUALIFICATION AWARDED

The Faculty of Civil Engineering offers under-graduate 1st degree study programme to obtain a university degree in Traffic Engineering.

University study programmes last 3 years (6 terms). The courses are devised so as to provide the student with academic knowledge as well as the knowledge of the methodology of scientific and research work. The students who completed study programme and successful diploma defence obtain professional B.Sc. degree titled: DIPLOMIRANI INŽENIR PROMETA (UN) / DIPLOMIRANA INŽENIRKA PROMETA (UN)

2.2 ADMISSION REQUIREMENTS

Duration of studies

Studies last for 3 years (6 terms of courses) with 180 (6x30) ECTS points.

Enrolment

The enrolment in university study programme Traffic Engineering is possible if:

- the student has passed matura examination,
- the student has passed vocational matura examination in the any secondary school program and the examination in matura subject of mathematics or foreign language, if he has passed Mathematics as the vocational matura examination,
- the student has completed any secondary school programme before 01.06.1995.

If only a limited number of students are admitted, the candidates from the a) and c) are selected according to the following criteria:

- general performance in matura examination or secondary school leaving examination 60 % points
- general performance in the 3rd and 4th year of the secondary school 40 % points

The candidates from the b) are selected according to:

- general performance in vocational matura examination 40 % points
- general performance in the 3rd and 4th year of the secondary school 40 % points
- degree in matura subject 20 % points

Enrolment places

	Full-time	Part-time
Traffic Engineering – University Study Programme	40	20

Part-time Studies

The Centre for Part-time Studies has its seat at the address: Faculty of Civil Engineering, Smetanova 17, tel. (02)2294 310.

Part-time studies will be offered if there are sufficient applicants.

Enrolment conditions for the 2nd academic year

Students progress to the 2nd year if they have collected at least 50 ECTS by the exams of the 1st year, they must pass the exams in following subjects: Mathematics A - Calculus, Mathematics B - Linear Algebra and Linear Programming, Principles of kinematics and dynamics, Computer and Information science, Transportation System, Selected themes from geography.

Enrolment conditions for the 3rd academic year

Students progress to the 3rd year if they have passed all the exams of the 1st year and gathered at least 50 ECTS by passed exams of the 2nd year. They must pass exams in following subjects of the 2nd year: Mathematics C - Optimization in Several Variables, Transport mechanisms, Transportation Infrastructure, Transportation planning, Traffic flows theory.

Re-entering to the academic year

Students, who do not meet conditions for further studies, may re-enter academic year, but only if they have collected at least 30 ECTS by passing exams of the year they want to re-enter. Students may re-enter just one academic year during their studies.

FURTHER STUDIES ACCORDING TO THE CRITERIA FOR TRANSITION (FULL-TIMER AND PART-TIME STUDIES)

To enrol in the 2nd or 3rd year the candidates fill in a form "Registration for enrolment in the higher educational institute in the academic year 2009/2010 for the parallel studies, for graduates or for further studies according to the criteria for transition" and they should send it to the Faculty of Civil Engineering.

Transition from university study programmes (before the adoption of Higher Education Act in 2004) and from (Bologna) university programmes of the first degree

Students of university study programmes of Faculty of Civil Engineering and related university study programmes of the first degree in the field of engineering and natural sciences and mathematics (Bologna and programmes verified before Higher Education Act in 2004) who pass the

enrolment conditions for the new study programme are determined missing obligations which they have to pass in order to take a diploma in the new programme.

Transition from professional type of higher educational study programmes (before the adoption of Higher Education Act in 2004) and from (Bologna) professional type of higher educational programmes of the first degree

Students of professional type of higher educational study programmes of Faculty of Civil Engineering and related professional type of higher educational programmes of the first degree in the field of engineering and natural sciences and mathematics (Bologna and programmes verified before Higher Education Act in 2004) who pass the enrolment conditions for the new study programme are determined missing obligations which they have to pass in order to take a diploma in the new programme.

Transition from higher educational study programmes, verified before 1994 and from short-term higher education programmes applied by the Vocational and Technical Education Act

Transitions from higher educational study programmes, verified before 1994, and from short-term higher education programmes applied by the Vocational and Technical Education Act to undergraduate university study programme Traffic Engineering are not possible.

2.3 EDUCATIONAL AND PROFESSIONAL GOALS

- Education of well versed graduates who will be able to connect different fields innovatively when solving engineering problems.
- Education of graduates in the field of traffic engineering who could take a job in Europe and worldwide after finishing studies.
- Adjustment of study programme with Bologna Declaration, which directly enables international comparability and transition.
- The goal of the new programme is assuring better future of the students with the emphasis on broader individual work under the mentorship (tutorship) in higher academic years.
- Assuring adjustment of the programme with minimum standards of FEANI due to the wish of later accreditation of the programme for a title Euro-ing. :
 - a. Mathematics and natural sciences at least 20% of all ECTS.
 - b. Higher mathematics (linear algebra, analytical geometry, differential and integral calculus, numerical analysis, operational researches ...) at least 24 ECTS.
 - c. Engineering subjects at least 60% during three-year study and 50% during longer study.
 - d. Non-engineering subjects (communication skills, economics, management, team work, law, safety, environment, languages...) around 10% of all ECTS.

Renovated undergraduate programme is thematically distributed into three modules as follows:

A1 – students gain needed basic knowledge in fundamental subjects in natural science and IT (Mathematics, Physics, Chemistry, Informatics, Geodesy, Environmental Protection...)

A2 – students gain basic knowledge in course subjects of Traffic engineering (introduction to traffic, transportation systems, selected themes from geography, transportation infrastructure, mechanics, spatial planning, transportation planning, traffic flows theory, transportation mechanisms, Traffic law, materials, ...).

A3 – students gain basic knowledge in special traffic engineering subjects (Organisation and technology of traffic, transportation routes design, traffic safety, transportation telematics and informatics) and basic knowledge in civil engineering subjects.

An important goal of the programme is education and preparation for further studies. The study programme will enable and stimulate students for further studies in postgraduate programme due to broad fundamental and basic expert knowledge which will direct them to choose eligible specialist degree course in postgraduate studies. There they will upgrade fundamental knowledge according to selected study course and specialize their expert knowledge.

The result of such a programme will be graduates with wide range of theoretical knowledge and basic expert knowledge enabling them performance of certain tasks from the field of civil engineering. Their undergraduate knowledge will be comparable with the knowledge of undergraduate programmes of related institutions in Europe.

2.4 ACCESS TO FURTHER STUDIES

POSTGRADUATE STUDIES: PROGRAMMES AND OPTIONS

MASTER STUDY PROGRAMMES OF THE 2nd DEGREE

- Civil Engineering,
- Traffic Engineering
- Industrial Engineering within Civil Engineering and
- Architecture.

DOCTORAL STUDY PROGRAMMES OF THE 3rd DEGREE

- Civil Engineering,
- Traffic Engineering and
- Nuclear Engineering and Technologies.

2.5 COURSE STRUCTURE DIAGRAM WITH CREDITS (60 PER YEAR)

No.	Semester	Subject	ECTS	ECTS per
1.	1.	Mathematics A - Calculus	8	60
2.		Geometric Modelling & Descriptive Geometry	4	
3.		Computer And Information Science	3	
4.		Geology	3	
5.		Basics Of Legal System	3	
6.		Transportation System	5	
7.		Selected Themes From Geography	4	
8.	2.	Digital Modelling	3	
9.		Mathematics B - Linear Algebra And Linear Programming	4	
10.		Engineering Materials	7	
11.		Principles Of Kinematics And Dynamics	3	
12.		Geodesy	4	
13.		The Bases Of The Environmental Methodical Planning	5	
14.		Computer Programming And Database Systems	4	
15.	3.	Technical Mechanics	6	60
16.		Mathematics C - Optimization In Several Variables	5	
17.		Geotechnics For Transportation Eng.	5	
18.		Transport Mechanisms (In Traffic)	6	
19.		Physics	5	
20.		Transportation Infrastructure	3	
21.	4.	Statistics	5	60
22.		Transportation Planning	6	
23.		Traffic Flows Theory	6	
24.		Transport Economics	7	
25.		Urban And Regional Planning Fundamentals	3	
26.		Transport Technology	3	
27.	5.	Technical English	3	60
28.		Hydrotechnics For Transportation Eng.	6	
29.		Engineering Structures In Traffic	5	
30.		Transportation Facilities Construction And Pavement Structures	4	
31.		Transport Organisation	3	
32.		Traffic Safety	4	
33.		Transportation Routes Design I	5	
34.	6.	Transport Infrastructure Management	4	60
35.		Transportation Informatics And Telematics I	5	
36.		Optional Subjects	18	
37.		Diploma Exam	3	

OPTIONAL SUBJECTS:

Analysis Of Road Traffic Accidents And Measures For Road Safety Assurance	6
Urban Traffic	6
Maintenance And Assessment Of Motor Vehicles (MAMV)	6
Cableway Devices	6

Optional subjects that can be chosen from the range of compulsory subjects of other courses or programmes are not explicitly mentioned in a programme because of many reasons:

- a range of optional subjects is dynamic and depends on changes of other programmes
- a range is too extensive,
- interdependence between programmes will be created in this way (also among different faculties and universities!).

Choosing subjects, students will be advised by tutors and mentors who will follow eligible subjects of other courses and programmes and design a range of recommendable optional subjects. In this way students can expect great variety and flexibility.

Within the credit study system Faculty of Civil offers all subjects performed at the faculty. Limitation for students of other faculties of University of

Maribor is 5 students per subject. The subject selection will be carried out according to order of registration until all the places are fulfilled.

2.6 FINAL EXAMINATION, IF ANY

Type and level of qualification: Diploma thesis

Official length of study programme: 3 YEARS (90 WEEKS)

The student should present the results of the Diploma Thesis. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: Master's degree

Official length of study programme: 2 YEARS (60 WEEKS)

The student should present the results of the Master's Thesis to professional public before taking the viva examination. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: DOCTOR OF SCIENCE (PH.D.)

Official length of study programme: 3 YEARS (90 WEEKS)

According to paragraph 157 of Statute of University the postgraduate students must publish their doctoral dissertations or their results before promotion in scientific publications or as independent scientific publications in order to be accessible for scientific public.

2.7 EXAMINATION AND ASSESSMENT REGULATIONS

ECTS and institutional grading scale:

ECTS Grade	% of successful students normally achieving the grade	Slovene grading system	Definition
A	10	10	EXCELLENT - outstanding performance with only minor errors
B	25	9	VERY GOOD - above the average standard but with some errors
C	30	8	GOOD - generally sound work with a number of notable errors
D	25	7	SATISFACTORY - fair but with significant shortcomings
E	10	6	SUFFICIENT - performance meets the minimum criteria
FX	-	5	FAIL - some more work required before the credit can be awarded
F	-	1-4	FAIL - considerable further work is required

ECTS credits:

1 full academic year	=	60 credits
1 semester	=	30 credits
1 term/trimester	=	20 credits

2.8 ECTS DEPARTMENTAL CO-ORDINATOR

Committee for ECTS:

- Assist. Prof. Dr. Bojana DOLINAR (Chairman of Committee)
- Assoc. Prof. Dr. Matjaž SKRINAR (member)
- Branko BOHINEC (member)

3 UNIVERSITY STUDY PROGRAMME OF INDUSTRIAL ENGINEERING IN CIVIL ENGINEERING

3.1 QUALIFICATION AWARDED

The Faculty of Civil Engineering offers under-graduate 1st degree study programme to obtain a university degree in Industrial Engineering in Civil Engineering

University study programmes last 3 years (6 terms). The courses are devised so as to provide the student with academic knowledge as well as the knowledge of the methodology of scientific and research work. The students who completed study programme and successful diploma defence obtain professional B.Sc. degree titled: DIPLOMIRANI GOSPODARSKI INŽENIR (UN) / DIPLOMIRANA GOSPODARSKA INŽENIRKA (UN)

3.2 ADMISSION REQUIREMENTS

Duration of studies

Studies last for 3 years (6 terms of courses) with 180 (6x30) ECTS points.

<i>Manners and forms of studies (choose):</i>	<input checked="" type="checkbox"/> full study	<input type="checkbox"/> part time study	<input type="checkbox"/> distant study
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The study of Industrial Engineering will be performed in the form of full study only.

Expected number of enrolment places – course Civil Engineering:	50.
Expected number of enrolment places – course Mechanical Engineering:	60.
Expected number of enrolment places – course Electrical Engineering:	40.

Full study will be performed at faculties according to study calendar determined by University of Maribor.

a) *Conditions for promotion within a programme:* Industrial Engineering – Civil Engineering

Conditions for the enrolment into 2nd year

Students may enrol into the 2nd year if they have collected at least 50 ECTS from the exams of the 1st year, the following exams must be passed: Mathematics A, Mathematics B, Physics, IT, Statics, Architecture and Principles of economics.

Conditions for the enrolment into 3rd year

Students may enrol into the 3rd year if they have passed all the exams of the 1st year and collected at least 50 ECTS from the exams of the 2nd year, the following exams of the 2nd year must be passed: Mechanics of solids, Construction statics, Organisation of building production, Technology of building production, Basics of organization and management. Students, who repeat the 2nd year or take a gap year, must do all the exams from the 1st and the 2nd year for the enrolment into 3rd year.

Enrolment under extraordinary conditions:

On the basis of legitimate reasons, enrolment under extraordinary conditions into the next year can be approved by the Students Affair Committee that set a term in which a student must meet requirements. Legitimate reasons are determined by the Statute of University of Maribor.

Repetition of the year:

Students, who have not met requirements, can repeat a year if they have collected at least 30 ECTS by passed exams of the year they want to repeat. Because of unfulfilled obligations, students may repeat a year only once in the whole study.

Prolongation of student status:

Status may be prolonged for a year if students do not enrol into next year due to legitimate reasons or do not graduate within 12 months after the last semester.

Students, who give a birth during studies, have a right to prolong their study status for a year for each child.

Advisement and direction during studies:

Faculty of Civil Engineering already has a system of tutoring and mentoring for students of Industrial Engineering - Civil Engineering. We also plan to offer a similar system to help students within a new undergraduate university study programme Industrial Engineering - Civil Engineering according to Point 9, Article 7 of Accreditation measurements. The student will have their own representatives – tutors since the first year.

b) *Provisions for transition between programmes*

Industrial Engineering - Civil Engineering

Transition between programmes is possible within university programmes of the 1st degree of Faculty of Civil Engineering according to Higher Education Act and Transition measures as well as other regulations. If students want to enrol into undergraduate university study programme Industrial Engineering - Civil Engineering (according to Bologna declaration) from other study programmes, they must obey rules which are valid for the course into which they want to enrol (number of enrolment places, etc.). Transition between study programmes means cessation of students' education in their previous study programme and further education in a new study programme.

Transition from university study programmes of the first degree (according to Bologna declaration) and from undergraduate university study programmes (before Higher Education Act, verified in 2004)

c) Transition from existent university programme Industrial Engineering - Civil Engineering

Students of university study programme Industrial Engineering - Civil Engineering (before Higher Education Act, verified in 2004) may enrol into a new undergraduate university study programme Industrial Engineering - Civil Engineering if they meet enrolment conditions for certain year of this programme of the first degree, defined in 4.9 of this application. Students, who do not meet enrolment conditions for a certain year, must fulfil missing requirements if they want to graduate in a new programme. Transition conditions are determined by Students Affair Committee of Faculty of Civil Engineering considering the structure of the curriculum of the previous students' programme.

d) Transition from university study programme Civil Engineering of the first degree and related sciences

Students of the university study programme Civil and Mechanical Engineering of the first degree (according to Bologna declaration) enrol into corresponding year of undergraduate university study programme of the first degree Industrial Engineering - Civil Engineering (according to Bologna declaration) if they meet enrolment conditions according to 4.9 of this application. Additional study requirements for the transition into corresponding year of suggested university study programme are imposed by Students Affair Committee of Faculty of Civil Engineering for each candidate individually. Candidates must hand in a copy of verified and valid curricula for subjects and other contents of their previous studies.

Transition from undergraduate higher professional study programmes (after Bologna Declaration) and from higher professional programmes (before Higher Education Act, adopted in 2004)

- Students of higher professional study programmes (according to Bologna declaration) and higher professional programmes (before Higher Education Act, adopted in 2004) of Civil and Mechanical Engineering may enrol into proposed university study programme of the first degree if they meet enrolment conditions, determined by 4.6 of this application. Candidates take a year of suggested course of university programme if they meet transfer conditions for the next year in their previous study programme by handing in evidence; the Students Affair Committee determines missing obligations which they must meet if they want to graduate in a new programme.
- Students of higher professional programmes (according to Bologna declaration) and higher professional programmes (before Higher Education Act, verified in 2004) of Civil and Mechanical Engineering, who do not meet enrolment conditions for a proposed university study programme according to 4.6, may enrol into this programme if they meet transfer conditions for the next year in their previous study programme and reach grade-point average of passed exams at least 8. Candidates enrol into corresponding year of proposed course of university study programme on the basis of submitted evidence; the Students Affair Committee determines missing obligations which they must meet if they want to graduate in a new programme.

Transition from other study programmes into undergraduate university study programme Industrial Engineering - Civil Engineering

- At transition from other study programmes (before and after Higher Education Act, verified in 2004) of the first degree into undergraduate university study programme Industrial Engineering - Civil Engineering, candidates must hand in a verified evidence of fulfilled study obligations from previous higher educational or high educational institution where they were enrolled and official copy from verified and valid curricula. If the contents (subjects and other obligations of the study programme) from the previous studies do not correspond to contents of undergraduate programme Industrial Engineering - Civil Engineering (according to Bologna declaration), the Students Affair Committee determines missing obligations and the term for candidates to meet these requirements in order to enrol into corresponding year of undergraduate study programme Industrial Engineering - Civil Engineering.

e) Transition from short-term higher education programmes

Transition from short-term higher education programmes according to Vocational Education Act (before Higher Education Act, verified in 2004)

Graduates of short-term higher education programmes (Vocational Education Act) can not be enrolled into undergraduate university programme of the first degree of Industrial Engineering - Civil Engineering directly. They have to absorb corresponding high educational professional programme.

Transition from short-term higher education programmes, adopted before 1994

Graduates of higher vocational programmes, adopted before 1994 from the study field of civil and mechanical engineering cannot be enrolled into undergraduate university programme of the first degree of Industrial Engineering - Civil Engineering directly. They have to absorb corresponding high educational professional programme.

3.3 EDUCATIONAL AND PROFESSIONAL GOALS

The basic aim of modernisation of the study programme Industrial Engineering is to develop a concept at under-graduate university study level which will be designed so that

- it will be comparable to similar study programmes in Western Europe regarding its range, content structure and duration,
- its flexibility will enable students an easy transfer between programmes and greater subject selectivity within a programme,
- it will include contents which will create a profile of graduates interesting for a market as well as their employability and mobility within European work market,
- it will be tightly connected to needs of society, especially economy, taking into consideration its structure and its conjunction to European market and needed competences of graduates,
- it will assure proper knowledge enabling graduates efficient inclusion into work market as well as motivation and skills to join lifelong education,
- it will be structured in such a way that students can autonomously develop their own methods of gaining knowledge at faculties and also take over greater responsibility to expand their knowledge in the field of engineering, economic and business,
- it will assure such a content selectivity that will enable students to develop a certain level of specialization of professional competences in order to have better chances of employment and transfer between study programmes,
- it will assure students possibility to cumulate performed responsibilities at various high school institutions and to transfer between study programmes,
- it will be easier to acknowledge knowledge and skills, gained at other high education institutions, particularly in the frame of various international exchange study programmes,
- a conceptual programme structure will follow the demand on wholesome study load (according to Criteria for Credit Assignment of Programmes),
- it will enable active involvement of students into a process of designing a study programme and will encourage active forms of studying and teaching,
- the programme will enable proper integration of knowledge within a system of engineering and economic business knowledge (specialization, integration, modularity) from the point of view of a profile of a graduate in each study course taking into account student's interest for selected study course and work market needs.

Subject specific competences

A subject competence is an activity developed to such extent that enables efficient work in a certain working process. A subject competence means indirect usage of specific and applicative knowledge and develops at simulations, study cases and indirect usage of problem solving knowledge.

Industrial Engineering – Civil Engineering

In the frame of subject-specific competences, the students in university undergraduate study programme Industrial Engineering – Civil Engineering will obtain:

- general knowledge from natural sciences, especially mathematics, physics and constructional chemistry,
- general knowledge from IT,
- general basic and in-depth technical knowledge from the field of civil engineering,
- basic knowledge from the field of economy, organisation, marketing, law and management,
- integral knowledge from the field of construction economy, organisation and management which will design a profile of a graduate,
- autonomous and creative performing of management in construction companies in the frame of management in technical and commercial sectors of these companies,
- planning and managing of construction projects in engineering companies, for investors, in management and elsewhere,
- management of constructional projects in terms of proper quality, punctuality and economy,
- communication within an organisation, with partners and clients,
- usage of communication technology and systems at a certain professional field,
- knowledge and understanding of basics and history (of development) of fundamental discipline,
- ability to solve problems at work by using scientific methods and procedures,
- coherent mastering of basic knowledge, ability to connect knowledge from different fields and its application into real environment,
- understanding and using of methods of critical analysis and theory development and their application to problem solving at work,
- ability to apply new information and interpretations into a context of basic discipline.

3.4 ACCESS TO FURTHER STUDIES

POSTGRADUATE STUDIES: PROGRAMMES AND OPTIONS

MASTER STUDY PROGRAMMES OF THE 2nd DEGREE

- Civil Engineering,
- Traffic Engineering
- Industrial Engineering within Civil Engineering and
- Architecture.

DOCTORAL STUDY PROGRAMMES OF THE 3rd DEGREE

- Civil Engineering,
- Traffic Engineering and
- Nuclear Engineering and Technologies.

3.5 COURSE STRUCTURE DIAGRAM WITH CREDITS (60 PER YEAR)

Year	Subject	ECTS	ECTS per year
1.	Mathematics A - Calculus	8	60
	Physics	5	
	Computer and Information science	3	
	Building Materials	6	
	Principles of Economics	5	
	Business English or Business German	3	
	Mathematics B - Linear Algebra	4	
	Statics	8	
	Digital Modeling	3	
	Architectural Constructions	5	
	Geodesy	4	
	Business Economics	6	
2.	Mechanics Of Solids	8	60
	Fluid Mechanics	5	
	Basics Of Organisation And GENERAL Management	6	
	Transportation routes design	5	
	Organization of Building Production	6	
	Accounting	6	
	Soil Mechanics and Foundation Engineering	8	
	Structural Analysis	9	
	Environmental Protection	2	
	Technology of Building Production	5	
3.	Steel structures	3	60
	Timber Structures	3	
	Concrete Structures	7	
	Fundamentals of Marketing	5	
	Project Management	6	
	Optional Subject FG*	6	
	Economics of Building Production	6	
	Optional Subject EPF**	6	
	Optional Subject***	6	
	Professional Skills	8	
Diplom work	4		

* Subjects within "Optional subjects FG" can be chosen from the range of recommended subjects of other courses or university programmes at Faculty of Civil Engineering.

**Optional Subjects EPF	ECTS
Fundamentals of Finance	5
Integrated Business Information Systems – ERP Solutions	6
Business Policy and Strategic Management	6
Communication Skills	5
Innovative Management	6
Accounting For Managers	6
Human Resource Management	6
Customer Relationship Management	6
Operations Management	5
Entrepreneurship	6

*** Subjects within "Optional Subject" can be chosen from the range of compulsory and recommended subjects other university programmes within University of Maribor.

3.6 FINAL EXAMINATION, IF ANY

Type and level of qualification: Diploma thesis

Official length of study programme: 3 YEARS (90 WEEKS)

The student should present the results of the Diploma Thesis. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: Master's degree

Official length of study programme: 2 YEARS (60 WEEKS)

The student should present the results of the Master's Thesis to professional public before taking the viva examination. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: DOCTOR OF SCIENCE (PH.D.)

Official length of study programme: 3 YEARS (90 WEEKS)

According to paragraph 157 of Statute of University the postgraduate students must publish their doctoral dissertations or their results before promotion in scientific publications or as independent scientific publications in order to be accessible for scientific public.

3.7 EXAMINATION AND ASSESSMENT REGULATIONS

ECTS and institutional grading scale:

ECTS Grade	% of successful students normally achieving the grade	Slovene grading system	Definition
A	10	10	EXCELLENT - outstanding performance with only minor errors
B	25	9	VERY GOOD - above the average standard but with some errors
C	30	8	GOOD - generally sound work with a number of notable errors
D	25	7	SATISFACTORY - fair but with significant shortcomings
E	10	6	SUFFICIENT - performance meets the minimum criteria
FX	-	5	FAIL - some more work required before the credit can be awarded
F	-	1-4	FAIL - considerable further work is required

ECTS credits:

1 full academic year	=	60 credits
1 semester	=	30 credits
1 term/trimester	=	20 credits

3.8 ECTS DEPARTMENTAL CO-ORDINATOR

Committee for ECTS:

- Assist. Prof. Dr. Bojana DOLINAR (Chairman of Committee)
- Assoc. Prof. Dr. Matjaž SKRINAR (member)
- Branko BOHINEC (member)

4 UNIVERSITY STUDY PROGRAMME OF ARCHITECTURE

4.1 QUALIFICATION AWARDED

The Faculty of Civil Engineering offers under-graduate 1st degree study programme to obtain a university degree in Architecture.

University study programmes last 3 years (6 terms). The courses are devised so as to provide the student with academic knowledge as well as the knowledge of the methodology of scientific and research work. The students who completed study programme and successful diploma defence obtain professional B.Sc. degree titled: DIPLOMIRANI INŽENIR ARHITEKTURE (UN) / DIPLOMIRANA INŽENIRKA ARHITEKTURE (UN)

4.2 ADMISSION REQUIREMENTS

Duration of studies

Studies last for 3 years (6 terms of courses) with 180 (6x30) ECTS points

Enrolment

The enrolment in university study programme Architecture is possible if:

- the student has passed matura examination,
- the student has passed vocational matura examination in the any secondary school program and the examination in matura subject of mathematics or foreign language, if he has passed Mathematics as the vocational matura examination,
- the student has completed any secondary school programme before 01.061995.

All candidates have to pass a test of talents.

If only a limited number of students are admitted, the candidates from the a) and c) are selected according to the following criteria:

- | | |
|---|-------------|
| - performance by a test of talents | 60 % points |
| - general performance in matura examination or secondary school leaving examination | 20 % points |
| - general performance in the 3rd and 4th year of the secondary school | 20 % points |

The candidates from the b) are selected according to:

- | | |
|---|-------------|
| - performance by a test of talents | 60 % points |
| - general performance in vocational matura examination | 15 % points |
| - general performance in the 3rd and 4th year of the secondary school | 20 % points |
| - degree in matura subject | 5 % points |

Enrolment places

	Full-time	Part-time
ARCHITECTURE – University Study Programme	80	/

Enrolment conditions for the 2nd academic year

Students progress to the 2nd year if they have collected at least 40 ECTS by the exams of the 1st year, they must pass the exams in following subjects: Architectural projecting I, Architectural projecting II, Architecture I.

Students, who re-enter the 1st year or take a gap year, have to pass all the exams of the 1st year for the enrolment into the 2nd year, so they have to gather all 60 ECTS.

Enrolment conditions for the 3rd academic year

Students progress to the 3rd year if they have passed all the exams of the 1st year and gathered at least 40 ECTS by passed exams of the 2nd year. They must pass exams in following subjects of the 2nd year: Studio I, Studio II and Architecture II.

Students, who repeat the 2nd year or take a gap year, must pass all the exams of the 1st and the 2nd year for the enrolment into the 3rd year.

Re-entering to the academic year

Students, who do not meet conditions for further studies, may re-enter academic year, but only if they have collected at least 30 ECTS by passing exams of the year they want to re-enter. Students may re-enter just one academic year during their studies.

FURTHER STUDIES ACCORDING TO THE CRITERIA FOR TRANSITION

To enrol in the 2nd or 3rd year the candidates fill in a form "Registration for enrolment in the higher educational institute in the academic year 2009/2010 for the parallel studies, for graduates or for further studies according to the criteria for transition" and they should send it to the Faculty of Civil Engineering.

Conditions for transition between study programmes of architecture

Students of university study programmes Architecture, who meet the enrolment conditions for a new undergraduate university study programme Architecture, are expected to pass obligations if they want to take a diploma in the new programme.

Conditions for transition from other study programmes

Entering the undergraduate university study programme Architecture from other study programmes, candidates have to hand in verified certificate about passed study obligations of their previous study of higher education institution as well as an official copy of verified and valid curricula for subjects and other contents from the architecture related fields (landscape architecture, urbanism). If study contents from candidates' earlier studies (subjects and other contents) do not cover contents of the undergraduate study programme Architecture completely, a Committee for Study Affairs can determine missing obligations which have to be passed to take a diploma in the new programme.

Transition from higher educational study programmes, verified before 1994 and from short-term higher education programmes according to the Vocational and Technical Education Act

Transitions from professional type of higher education, short-term higher educational programmes, performed before 1994, and from short-term higher education programmes, regulated by Vocational and Technical Education Act, to undergraduate university study programme Architecture are not possible.

Enrolment places

	Full-time	Part-time
ARCHITECTURE – University Study Programme	20	/

4.3 EDUCATIONAL AND PROFESSIONAL GOALS

To educate experts who will be capable to perform responsible tasks autonomously in the field of architectural design and projects as well as space management with elements of urban planning. According to Slovene legislation, the fields of responsibilities of architect have definite conditions for an architect-planner, supervisor, reviser of project-technical documentation in the field of architecture and urban planning, urban planner, responsible manager of space act execution, municipal planner, researcher, etc.

Basic aims of the study programme of the 2nd degree of Architecture are:

- To educate the profile of an expert in the field of architecture according to the European guidelines, and due to international comparability of the programme, to enable students to continue their postgraduate studies in institutions in Europe or worldwide, as well as to give graduates employment possibilities within the European Union.
- To offer a study programme that connects all specific knowledge from the field of architecture in order to enable students to precede studies in postgraduate study programme Architecture or related postgraduate programmes after finishing this programme.

Study programme Architecture connects architecture relevant fields:

- gaining projecting and special planning skills with presentation techniques and design,
- gaining natural science and technical contents, humanistic and social contents, enriched by history, art and environmental protection
- knowledge of sociological relations in built environment and space (this enables the understanding of the profession of an architect and the role of an architect in society)
- suitable knowledge in solving constructional, technological and engineering problems, connected to knowledge of processes in building industry, organisations, together with legislation and regulations (this enables realisation in practice)
- the study programme is directed to integral approach giving the ability of architectural, urban and special planning in the means of aesthetics as well as engineering, based on history knowledge and architecture theory, urbanism and other relevant branches as well as bases of fine arts and design.

The heart of the study programme Architecture represents a field of architectural projecting, which is connected to parallel thematic fields. The study programmes of undergraduate level of architecture offers students a wide range of knowledge which follows the integral concept of connecting all main fields of space and object planning, together with bases of constructional and details projecting as well as urban and landscape projecting, supported by practically oriented projects within studios. The study includes understanding of sociological bases of architecture in space and its aesthetics, technical, economical, ecological and other parameters, which represent the integrity in the processes of planning and building along with activities of different disciplines. The study gives knowledge from the sphere of architectural history and related arts, including design and communication techniques, important for presentation of tasks in the field of architecture and urbanism.

4.4 ACCESS TO FURTHER STUDIES

POSTGRADUATE STUDIES: PROGRAMMES AND OPTIONS

MASTER STUDY PROGRAMMES OF THE 2nd DEGREE

- Civil Engineering,
- Traffic Engineering,
- Industrial Engineering within Civil Engineering and

- Architecture.

DOCTORAL STUDY PROGRAMMES OF THE 3rd DEGREE

- Civil Engineering,
- Traffic Engineering and
- Nuclear Engineering and Technologies.

4.5 COURSE STRUCTURE DIAGRAM WITH CREDITS (60 PER YEAR)

No.	Year	Subject	ECTS	ECTS per year
1.	1.	Overview Introduction To Architecture	3	60
2.		Architectural Design I	6	
3.		Drawing, Visual Expression	4	
4.		Computer And Information Science	3	
5.		Building Materials	5	
6.		Chosen Topics From Mathematics	5	
7.		History Of Art And Architecture I	4	
8.		Architectural Design II	6	
9.		Architectural Elements I	5	
10.		Urban Planning Fundamentals	5	
11.		Digital Modelling	3	
12.		Principles In Foundation In Construction	3	
13.		Statics I	4	
14.		History Of Art And Architecture II	4	
15.		Sports	-	
16.	2.	Studio I	6	60
17.		Architectural Elements II	5	
18.		Basics Of Design Of Open Space	5	
19.		Architectural Visualisation	4	
20.		Concrete Structures	5	
21.		Introduction To Building Physics	5	
22.		Studio II	6	
23.		Building Installations	4	
24.		The Basis Of The Environmental Management	5	
25.		Composition	4	
26.		Steel Structures	4	
27.		Timber Structures	3	
28.		Statics II	4	
29.	3.	Studio III	10	60
30.		Spatial Sociology	5	
31.		Optional Subject	5	
32.		Optional Subject	5	
33.		Planning And Management Of Construction Projects	5	
34.		Cultural Heritage Protection	5	
35.		Optional Subject	5	
36.		Construction Economics	5	
37.		Optional Subject	5	
38.		Diploma	10	

SELECTIVE SUBJECTS:

No.	Semester	Subject	ECTS
		Geotechnics In Architecture	5
		Special Chapters In Geodesy/Gis	5
		Methodology Of The Environmental Impact Assesments	5
		Spaces Of City	5

Within the credit study system Faculty of Civil Engineering offers all subjects performed at the faculty. Limitation for students of other faculties of University of Maribor is 5 students per subject. The subject selection will be carried out according to order of registration until all the places are fulfilled.

4.6 FINAL EXAMINATION, IF ANY

Type and level of qualification: Diploma thesis

Official length of study programme: 3 YEARS (90 WEEKS)

The student should present the results of the Diploma Thesis. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: Master's degree

Official length of study programme: 2 YEARS (60 WEEKS)

The student should present the results of the Master's Thesis to professional public before taking the viva examination. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: DOCTOR OF SCIENCE (PH.D.)

Official length of study programme: 3 YEARS (90 WEEKS)

According to paragraph 157 of Statute of University the postgraduate students must publish their doctoral dissertations or their results before promotion in scientific publications or as independent scientific publications in order to be accessible for scientific public.

4.7 EXAMINATION AND ASSESSMENT REGULATIONS

ECTS and institutional grading scale:

ECTS Grade	% of successful students normally achieving the grade	Slovene grading system	Definition
A	10	10	EXCELLENT - outstanding performance with only minor errors
B	25	9	VERY GOOD - above the average standard but with some errors
C	30	8	GOOD - generally sound work with a number of notable errors
D	25	7	SATISFACTORY - fair but with significant shortcomings
E	10	6	SUFFICIENT - performance meets the minimum criteria
FX	-	5	FAIL - some more work required before the credit can be awarded
F	-	1-4	FAIL - considerable further work is required

ECTS credits:

1 full academic year	=	60 credits
1 semester	=	30 credits
1 term/trimester	=	20 credits

4.8 ECTS DEPARTMENTAL CO-ORDINATOR

Committee for ECTS:

- Assist. Prof. Dr. Bojana DOLINAR (Chairman of Committee)
- Assoc. Prof. Dr. Matjaž SKRINAR (member)
- Branko BOHINEC (member)

5 PROFESSIONALLY STUDY PROGRAMME OF CIVIL ENGINEERING

5.1 QUALIFICATION AWARDED

The Faculty of Civil Engineering offers 1st degree study programmes to obtain a professional title in Civil Engineering.

Professional study programmes last 3 years (6 terms). The courses are devised so as to provide the student with academic knowledge as well as the knowledge of the methodology of scientific and research work to obtain professional title: diplomirani inženir gradbeništva (VS) / diplomirana inženirka gradbeništva (VS)

5.2 ADMISSION REQUIREMENTS

Duration of studies

Studies last for 3 years (6 terms of courses)

Optional modules

A professional type of higher educational programme Civil Engineering includes four modules (taken in the 3rd year):

- Operative building
- Traffic structures
- Building constructions
- Hydrotechnics.

If the number of students, enrolled in a certain module in Celje is lower than 10, these students join the module in Maribor. For the students, enrolled in Celje, some of laboratory sessions and fieldwork will be performed in Maribor due to special equipment in compulsory subjects.

Enrolment

The enrolment in professionally oriented study programme Civil Engineering is possible if the student has passed the secondary school leaving examination in any program, vocational matura examination or matura examination.

If only a limited number of students are admitted, the candidates are selected according to the following:

- general performance in secondary school leaving examination, vocational matura or matura examination 60 % points
- general performance in the 3rd and 4th year of the secondary school 40 % points

Enrolment places

Civil Engineering – Professionally Oriented Study Programme	Full-time	Part-time
- Maribor	80	20
- Celje	40	-

Part-time Studies

The Centre for Part-time Studies has its seat at the address: Faculty of Civil Engineering, Smetanova 17, tel. (02)2294 310. Part-time studies will be offered if there are sufficient applicants.

5.3 EDUCATIONAL AND PROFESSIONAL GOALS

- The programme gives practical education in civil engineering in its compulsory part, special knowledge is included in optional modules and subjects that represent 20 ECTS, i.e. 11.1% of all studies. Such a programme enables a student better overview of construction problems, efficient co-operation to solve complex construction problems, higher employment flexibility and easier special knowledge gaining. For a small Slovene economy such a programme is more appropriate than more specialized programme where the efficient employment is possible only within the work in a special area.
- The programme is directed into practical and innovative solving of applicable problems. First, the analysis of the concrete practical problem is applied, than the abstraction is introduced and afterwards the knowledge is broadened to common valid principles and theories.
- The programme will develop critical and innovative thinking and make students capable of concrete and modern solving of all simple and common practical problems in construction; graduates will clearly know which tasks they can carry out autonomously and correctly. They will be able to recognize the tasks beyond their knowledge and pass them to the right experts.
- The emphasis is on the development of skills to understand and solve practical problems according to the valid Slovene and European norms and regulations in construction.
- The study programme gives sufficient common theoretical knowledge, common and special expert knowledge and practical project work to enable graduates to connect specific knowledge and particularities in the field of civil engineering.
- Due to optional modules and subjects the programme will enables the students to gain in-depth special expert knowledge.
- With the complex practical project work during the studies and practical work in companies the applicable problems and their solutions will be introduced and the students will be able to solve them autonomously.

- The graduates will be autonomous in engineering problem solving and able to communicate with experts from different fields and connect their work with those who work on optimal realization of practical tasks within construction.
- The aim of the programme is to meet the contents of expected knowledge for the field of construction as demanded by civil engineering in Slovenia and European Union as well as worldwide.
- The study programme will be in agreement with the Bologna Declaration which enables international comparison and transferability.
- Another objective is to educate a type of expert from the field of civil engineering according to European guidelines and to compare make the programme comparable in order to assure the graduates to get the employment all over Europe.
- Due to our request after later programme accreditation for the title Eur Ing, the possibilities should be assured that the programme can be supplemented or changed or additional study can be organized to fulfil the demands of the association FEANI when officially adopted.
- Even though the programme assures acquired education from the field of civil engineering one of its goals is to qualify and motivate for further education.

A result of such a programme will be graduates who will have appropriate theoretical knowledge, sufficient in-depth expert knowledge; clear knowledge on construction and interdisciplinary fields, appropriate variety of experiences for the realization of the project documentation and project accomplishment what will enables them to do the certain tasks from the field of construction autonomously. Their undergraduate knowledge will be comparable with the knowledge gained in other undergraduate programmes of related institutions in Europe.

5.4 ACCESS TO FURTHER STUDIES

POSTGRADUATE STUDIES: PROGRAMMES AND OPTIONS

MASTER STUDY PROGRAMMES OF THE 2nd DEGREE

- Civil Engineering,
- Traffic Engineering
- Industrial Engineering within Civil Engineering and
- Architecture.

DOCTORAL STUDY PROGRAMMES OF THE 3rd DEGREE

- Civil Engineering,
- Traffic Engineering and
- Nuclear Engineering and Technologies.

5.5 COURSE STRUCTURE DIAGRAM WITH CREDITS (60 PER YEAR)

No.	Semester	Subject	ECTS	ECTS per year
1.	1.	Mathematics 1	8	60
2.		Physics	4	
3.		Structural Mechanics 1	5	
4.		Architecture 1	4	
5.		Introduction To Building Materials	3	
6.		Engineering Geology	3	
7.		Computer And Information Science	3	
8.	2.	Mathematics 2	3	
9.		Structural Mechanics 2	8	
10.		Building Physics	4	
11.		Technical English	3	
12.		Building Materials	3	
13.		Geometric Modelling & Descriptive Geometry	5	
14.		Soil Mechanics	4	
15.	3.	Fluid Mechanics And Hydraulics	5	60
16.		Foundation Engineering 1	4	
17.		Transportation Routes Design And Construction 1	4	
18.		Project Work – Part 1	3	
19.		Structural Mechanics 3	5	
20.		Management Of Construction Work	5	
21.		Basics Of Construction Design	4	
22.	4.	Geodesy	4	
23.		Transportation Routes Design And Construction 2	4	
24.		Timber Structures	4	
25.		Technology Of Building Production And Mechanization	4	
26.		Project Work – Part 2	3	
27.		Concrete Structures	6	
28.		Construction Economics	5	
29.	5.	Water Structures And Water Management	5	60
30.		Steel Structures	5	
31.		Architecture 2	4	
32.		Safety At Construction Work	3	
33.		Urban Planning Fundamentals And Environmental Protection	5	
34.		Project Work – Part 3	3	
35.		Optional Subjects	5	
36.	6.	Optional Subjects	15	
37.		Project Work – Part 4	4	
38.		Practical Placement	8	
39.		Diploma	3	

SELECTIVE SUBJECTS:

No.	Semester	Subject	ECTS
40.	5	Basics Of Investment Decisions	5
41.	5	Project Management In Construction	5
42.	6	Basics In Real Estate Valuation	5
43.	6	Pavement Structures Dimension	3
44.	6	Construction And Maintenance Of The Traffic Facilities	3
45.	5/6	Road Intersections	3
46.	5/6	Traffic Dimensioning Of The Road Intersections	3
47.	5/6	Massive Structures	5
48.	6	Steel Structures	5
49.	6	Foundation Engineering 2	5
50.	5/6	Water Supply Systems And Water Treatment	5
51.	5/6	Sanitary Sewer Design And Wastewater Treatment	5
52.	5/6	Building Installations	5
53.	5/6	Surface Water Regulation	5
54.	5	Insulating Materials For Civil Engineers	5
55.	5	Marketing And Preparation Of Bids	5
56.	6	The Basics Of Maintenance And Rehabilitation Of Structures	5
57.	5/6	Traffic Areas In Urban Environment	3
58.	5/6	Low Volume Traffic Roads	3
59.	5/6	Transportation Planning	3
60.	5/6	Regulations In Road Traffic System	3
61.	5/6	Structural Mechanics 4	5
62.	6	Timber Structures	5
63.	5/6	Earthquake Engineering	5
64.	5/6	Prestressed Concrete	5
65.	6	Geotechnical Structures	5
66.	5/6	Urban Planning 2	4
67.	6	The Ecology 2	4
68.	5/6	Sports	3

Within the credit study system Faculty of Civil offers all subjects performed at the faculty. Limitation for students of other faculties of University of Maribor is 5 students per subject. The subject selection will be carried out according to order of registration until all the places are fulfilled.

5.6 FINAL EXAMINATION, IF ANY

Type and level of qualification: Diploma thesis
 Official length of study programme: 3 YEARS (90 WEEKS)

The student should present the results of the Diploma Thesis. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: Master's degree
 Official length of study programme: 2 YEARS (60 WEEKS)

The student should present the results of the Master's Thesis to professional public before taking the viva examination. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: DOCTOR OF SCIENCE (PH.D.)
 Official length of study programme: 3 YEARS (90 WEEKS)

According to paragraph 157 of Statue of University the postgraduate students must publish their doctoral dissertations or their results before promotion in scientific publications or as independent scientific publications in order to be accessible for scientific public.

5.7 EXAMINATION AND ASSESSMENT REGULATIONS

ECTS and institutional grading scale:

ECTS Grade	% of successful students normally achieving the grade	Slovene grading system	Definition
A	10	10	EXCELLENT - outstanding performance with only minor errors
B	25	9	VERY GOOD - above the average standard but with some errors
C	30	8	GOOD - generally sound work with a number of notable errors
D	25	7	SATISFACTORY - fair but with significant shortcomings
E	10	6	SUFFICIENT - performance meets the minimum criteria
FX	-	5	FAIL - some more work required before the credit can be awarded
F	-	1-4	FAIL - considerable further work is required

ECTS credits:

1 full academic year	=	60 credits
1 semester	=	30 credits
1 term/trimester	=	20 credits

5.8 ECTS DEPARTMENTAL CO-ORDINATOR

Committee for ECTS:

- Assist. Prof. Dr. Bojana DOLINAR (Chairman of Committee)
- Assoc. Prof. Dr. Matjaž SKRINAR (member)
- Branko BOHINEC (member)

6 PROFESSIONALLY STUDY PROGRAMME OF TRAFFIC ENGINEERING

6.1 QUALIFICATION AWARDED

The Faculty of Civil Engineering offers 1st degree study programmes to obtain a professional title in Traffic Engineering.

Professional study programmes last 3 years (6 terms). The courses are devised so as to provide the student with academic knowledge as well as the knowledge of the methodology of scientific and research work to obtain professional title: diplomirani inženir prometa (VS) / diplomirana inženirka prometa (VS)

6.2 ADMISSION REQUIREMENTS

Duration of studies

Studies last for 3 years (6 terms of courses)

Optional modules

A professional type of higher educational programme Traffic Engineering includes two modules (taken in the 3rd year):

- Road Traffic and
- Railway Traffic

If the number of students, enrolled in a certain module in Celje is lower than 10, these students join the module in Maribor. For the students, enrolled in Celje, some of laboratory sessions and fieldwork will be performed in Maribor due to special equipment in compulsory subjects.

Enrolment

The enrolment in professionally oriented study programme Traffic Engineering is possible if the student has passed the secondary school leaving examination in any program, vocational matura examination or matura examination.

If only a limited number of students are admitted, the candidates are selected according to the following:

- general performance in secondary school leaving examination, vocational matura or matura examination 60 % points
- general performance in the 3rd and 4th year of the secondary school 40 % points

Enrolment places

Traffic Engineering – Professionally Oriented Study Programme	Full-time	Part-time
- Maribor	60	40
- Celje	40	-

Part-time Studies

The Centre for Part-time Studies has its seat at the address: Faculty of Civil Engineering, Smetanova 17, tel. (02)2294 310.

Part-time studies will be offered if there are sufficient applicants.

6.3 EDUCATIONAL AND PROFESSIONAL GOALS

Basic programme objectives

- To educate graduates who will use creativity and competitiveness when solving engineering problems.
- Due to interdisciplinarity and multidisciplinary of the traffic engineer profile the students will have the opportunity to gain knowledge of related undergraduate study programmes and to continue the studies in university study programmes.
- To assure better student transition with the emphasis on enlarged individual work under the mentor's tutelage.
- To include basic knowledge of natural and technical sciences successively as well as social science in order to assure spontaneous transit to expert knowledge and applicative solutions as well as to supplement the field with interdisciplinary and optional knowledge from the modern solutions in traffic engineering.

The first degree of professionally oriented study programme of traffic engineering is thematically divided into knowledge modules through which students upgrade their knowledge and improve their skills to understand and solve concrete problems in the field of traffic engineering:

- 1 - Students obtain needed basic knowledge in fundamental natural and IT subjects.
- 2 - Students gain basic knowledge in fundamental subjects in the field of traffic engineering. The aim is to qualify students to use engineering methods for solving simple engineering problems.
- 3 - Students win knowledge in special traffic subjects within road or railway traffic through which they gain the understanding of complex problems of traffic engineering practice.
- 4 - Students obtain theoretical and applicative knowledge which is required for organization and realization of competitive traffic services.

Generic competences gained by the programme

Within the generic competences the students of the first degree of professionally oriented study programme „Traffic Engineering” gain the qualification on the basis of required knowledge and:

- are qualified for analysis, synthesis and prediction of solving applicative problems,
- are familiar with fundamental research methods, procedures and processes,
- are active in engineering practice,
- are autonomous in their expert work,
- are active internationally.

Within the generic competences, objectives of the study programme are to educate a graduate who is able to co-operate nationally and internationally at:

- population mobility assurance,
- traffic systems and traffic sub-systems planning,
- road and railway infrastructure management,
- traffic and traffic flows management,
- transport planning, organization and realization.

The subject specific competences gained by the programme

Within the subject specific competences the students of the first degree of professionally oriented study programme „Traffic Engineering“ obtain:

- understanding in interactive dependence of the module »space – residential functions – mobility needs« historically as well as in broader development sense,
- understanding in procedures and criteria in permanent mobility assurance,
- understanding and systematic approach in mobility assurance,
- understanding in several phenomena, characteristics and elements of a traffic system,
- understanding of criteria for traffic infrastructure management and means of transport,
- understanding in technological processes in transport as well as methods and procedures of traffic organization,
- graduates of proposed undergraduate programme can co-operate in arrangements of municipal, town, region, national space and development plans,
- graduates are qualified of autonomous dimensioning of roads, traffic areas and terminals,
- graduates are qualified for autonomous and creative realization of certain tasks in the field of traffic services (transport planning and organizing) with the emphasis on road and railway traffic.

In the field of traffic engineering the graduates will be qualified to

- study the market according to transport needs,
- organize work process,
- analyse management and prepare improvement measurements,
- arrange business and make contracts,
- organize and assure the work according to regulations,
- study traffic flow and capacity occupation,
- study business rentability and prepare measurements for rentability assurance,
- manage and co-ordinate work in the field of transport,
- supervise and manage traffic service processes,
- manage exploitation processes and maintain traffic infrastructure and superstructure.

6.4 ACCESS TO FURTHER STUDIES

POSTGRADUATE STUDIES: PROGRAMMES AND OPTIONS

MASTER STUDY PROGRAMMES OF THE 2nd DEGREE

- Civil Engineering,
- Traffic Engineering
- Industrial Engineering within Civil Engineering and
- Architecture.

DOCTORAL STUDY PROGRAMMES OF THE 3rd DEGREE

- Civil Engineering,
- Traffic Engineering and
- Nuclear Engineering and Technologies.

6.5 COURSE STRUCTURE DIAGRAM WITH CREDITS (60 PER YEAR)

No.	Semester	Subject	ECTS
1	1.	Mathematics 1	5
2		Selected Themes From Geography	4
3		Basics Of Electromagnetism	3
4		Transportation System	6
5		Technical Mechanics Basics	5
6		Transport Law	4
7		Computer And Information Science	3
8	2.	Mathematics Ii	5
9		Transport Economics I	5
10		Urban And Regional Planning	4
11		Environment Protection In Traffic	4
12		Materials For Traffic Engineers	7
13		Geometric Modelling & Descriptive Geometry	5
14	3.	Environmental Programming Within The Traffic	3
15		Investment Decisions In Traffic	4
16		Transportation Informatics	3
17		Traffic Technics	5
18		Transportation Planning	5
19		Statistics	5
20		Transport Systems And Exploitation (TSIE)	5
21	4. Road Traffic	Road Infrastructure Management	4
22		Road Traffic Infrastructure	3
23		Road Transportation Telematics	5
24		Technical English	3
25		Technical German	3
26		Technical Aspect Of Road Traffic Safety	4
27		Technology And Organisation Of Road Traffic And Transport	4
28		Technology And Organisation Of City Public Transport	4
29		Transport Devices In The Internal Transport	3
30	4. Railway Traffic	Managing And Economy Of Railway Transport Resources	4
31		Railway Infrastructure Managing And Economy	3
32		Automatisation And Technical Interoperability	4
33		Railway Traffic Infrastructure	3
34		Railway Intelligent Infrastructure	3
35		Signalling And Security In Railway Traffic	5
36		Technology And Organization Railways Transport	5
37	5.	Traffic Quality Management	3
38		Intermodal Traffic Systems	3
39		Forwarding Services And Transport Insurance	4
40		Transport Economics Ii	5
41		Transport (Business) Logistics	3
42		Optional Subjects	12
43	6.	Optional Subject	6
44		Practical Placement	15
45		Diploma Work	9

OPTIONAL SUBJECTS:

No.	Semester	Subject	ECTS
46	6	Analyse Of Traffic Accidents	6
47	6	Analyse Of Traffic Accidents - Atc	6
48	6	Elements Of Methodology For Evaluating The Car's Value And Damage	6
49	6	German Language I - Options	5
50	6	Investment Making And Project Work	4
51	6	Catenary Network And Traction Vehicles	4
52	6	Cableways	6
53	6	Sports	3

Choosing optional subjects, students will be advised by tutors and mentors who will follow eligible subjects of other courses and programmes and design a range of recommendable optional subjects. In this way students will be given opportunity for an extensive selectivity and flexibility. Students can choose subjects within a range of optional subjects of the study programme Traffic Engineering or within a range of compulsory or optional subjects of other courses and programmes.

Within the credit study system Faculty of Civil offers all subjects performed at the faculty. Limitation for students of other faculties of University of Maribor is 5 students per subject. The subject selection will be carried out according to order of registration until all the places are fulfilled.

6.6 FINAL EXAMINATION, IF ANY

Type and level of qualification: Diploma thesis
Official length of study programme: 3 YEARS (90 WEEKS)

The student should present the results of the Diploma Thesis. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: Master's degree
Official length of study programme: 2 YEARS (60 WEEKS)

The student should present the results of the Master's Thesis to professional public before taking the viva examination. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: DOCTOR OF SCIENCE (PH.D.)
Official length of study programme: 3 YEARS (90 WEEKS)

According to paragraph 157 of Statue of University the postgraduate students must publish their doctoral dissertations or their results before promotion in scientific publications or as independent scientific publications in order to be accessible for scientific public.

6.7 EXAMINATION AND ASSESSMENT REGULATIONS

ECTS and institutional grading scale:

ECTS Grade	% of successful students normally achieving the grade	Slovene grading system	Definition
A	10	10	EXCELLENT - outstanding performance with only minor errors
B	25	9	VERY GOOD - above the average standard but with some errors
C	30	8	GOOD - generally sound work with a number of notable errors
D	25	7	SATISFACTORY - fair but with significant shortcomings
E	10	6	SUFFICIENT - performance meets the minimum criteria
FX	-	5	FAIL - some more work required before the credit can be awarded
F	-	1-4	FAIL - considerable further work is required

ECTS credits:

1 full academic year	=	60 credits
1 semester	=	30 credits
1 term/trimester	=	20 credits

6.8 ECTS DEPARTMENTAL CO-ORDINATOR

Committee for ECTS:

- Assist. Prof. Dr. Bojana DOLINAR (Chairman of Committee)
- Assoc. Prof. Dr. Matjaž SKRINAR (member)
- Branko BOHINEC (member)

POST - GRADUATE PROGRAMMES
2nd DEGREE STUDY PROGRAMMES

7 [2nd DEGREE STUDY PROGRAMME OF CIVIL ENGINEERING](#)

7.1 QUALIFICATION AWARDED

The Faculty also offers one 2nd degree study programme to obtain a master degree:

- Civil Engineering.

Study programme last 2 years (4 terms). The courses are devised so as to provide the student with academic knowledge as well as the knowledge of the methodology of scientific and research work to obtain professional title: *magister inženir gradbeništva / magistrica inženirka gradbeništva*.

7.2 ADMISSION REQUIREMENTS

Into the 2nd degree of Civil Engineering can be enrolled who completed:

- study programme of the 1st degree in the field of civil engineering
- study programme of the 1st degree in the fields of transport, traffic engineering, architecture, mechanical engineering, urbanism and other to civil engineering related fields if they have fulfilled study requirements by collecting 60 ECTS in the subjects that are essential for further studies before the enrolment into the study programme. They have to fulfil the requirements from the following fields: construction mechanics, geotechnics, hydrotechnics, structures, construction management, traffic engineering and construction materials
- higher professional study programme in the field of civil engineering, verified before 11 June 2004
- higher professional study programme, verified before 11 June 2004, in the fields of traffic engineering, architecture, mechanical engineering, urbanism and other to civil engineering related fields if they have completed study requirements by collecting 60 ECTS in the subjects that are essential for further studies before the enrolment into the study programme. They have to fulfill study requirements from the following fields: construction mechanics, geotechnics, hydrotechnics, structures, construction management, traffic engineering and construction materials.

Conditions for the enrolment into the 2nd year: Students may enrol into the 2nd year if they have collected at least 40 ECTS from the exams of the 1st year and fulfilled all the study requirements in Mathematics D.

Students who take the 1st year again or take a gap year must do all the exams of the 1st year (collect all 60 ECTS) before enrolment into the 2nd year.

Repetition of a year: Repetition of a year is regulated according to Statute of University of Maribor and Higher Education Act. Students, who have not accomplished all the study requirements for further studies in the same study programme, can repeat a year once in postgraduate master education.

Enrolment places

	Full-time	Part-time
Civil Engineering – 2 nd Study Programme	80	40

Part-time Studies

The Centre for Part-time Studies has its seat at the address: Faculty of Civil Engineering, Smetanova 17, tel. (02)2294 310. Part-time studies will be offered if there are sufficient applicants.

FURTHER STUDIES ACCORDING TO THE CRITERIA FOR TRANSITION (FULL-TIMER AND PART-TIME STUDIES)

According to the transition criteria, into the 2nd year of the second degree of Civil Engineering can be enrolled:

- graduates of university study programmes, verified before 11 June 2004, in the field of civil engineering, who were acknowledged 60 ECTS at the enrolment into the study programme
- graduates of university study programme, verified before 11 June 2004, in the fields of traffic engineering, architecture, mechanical engineering, urbanism and other to civil engineering related fields who were acknowledged up to 40 ECTS at the enrolment into the study programme
- candidates who completed higher professional study programme and study programme for specialist degree in the field of civil engineering who were acknowledged 60 ECTS at the enrolment into the study programme
- candidates who completed higher professional study programme and study programme for specialist degree in the fields of traffic engineering, architecture, mechanical engineering, urbanism and other to civil engineering related fields and were acknowledged 40 ECTS at the enrolment into the study programme.

Also, transition is possible from other study programmes of the 2nd degree from the following study fields: architecture, traffic engineering, mechanical engineering, urbanism and other to civil engineering related fields.

The following measures are considered: fulfilling all the enrolment conditions and a number of places available.

Besides, the study requirements, which were done by the student within his former studies and can be acknowledged, are established.

Students should hand in official leave form from their previous study programme and certificate about completed study requirements in their previous programme.

The study requirements, which a student have to do to reach a master degree in a new program, are defined.

According to individual applications, commission decides about enrolment and transitions from related fields.

7.3 EDUCATIONAL AND PROFESSIONAL GOALS

To enable a study programme which provides fundamental knowledge from all the fields of civil engineering, upgraded by knowledge which enables orientation into certain subfields of civil engineering.

To reach adjustment of the study programme with Bologna Declaration that indirectly allows international comparison and transferability.

To educate a well versed expert in the field of civil engineering according to European guidelines and to enable chances for employment on the European workforce market by international comparability of the programme.

To create an expert who will be, besides having broad general foundation knowledge in the field of civil engineering, additionally skilled for solving specific engineering problems and for innovative mutual connecting of different fields of civil engineering.

To educate a constructional expert for Slovene economy that will allow perspective and competition on European market.

The new postgraduate study programme of the second degree is thematically divided into three theme modules which systematically follow the next progression:

1 – Students upgrade knowledge on foundational natural science and IT subjects (statistics, numerical methods...)

2 – Students improve knowledge on foundational subjects in civil engineering (building physics, retaining constructions, transportation routes design, economics of building production, ...); students are able to use mathematical and engineering methods for solving complex engineering problem.

3 - Students gain knowledge from course-oriented civil engineering subjects according to certain programme course (course-specific subjects of three courses: building infrastructures, building constructions and building management); students are skilled for solving complex engineering problems within the single course.

The proposed programme is modern and suggests complete updating of the second part of previous university programme “Civil Engineering” according to European guidelines of Bologna Declaration and expected new needs of Slovene administration and economy.

The new programme will educate profound experts who will be able to incorporate into economy in Slovenia as well as abroad.

The result of so planned programme will be a graduate – master with solid foundational theoretical knowledge and proficient course-specific expert knowledge that will enable independent performance of complex tasks in the field of civil engineering.

7.4 ACCESS TO FURTHER STUDIES

POSTGRADUATE STUDIES: PROGRAMMES AND OPTIONS

3th DEGREE PROGRAMME STUDIES:

- Civil Engineering Programme
- Nuclear Engineering And Technologies Programme
- Traffic Engineering Programme

7.5 COURSE STRUCTURE DIAGRAM WITH CREDITS (60 PER YEAR)

Study field: Civil engineering structures		
1 st semester		
Subject Title	Lecturer	ECTS
Mathematics D – Diferential Equations	Matej Mencinger	4
Numerical methods	Bruno Cvikl	4
Building Materials	Lucija Hanžič	5
Dynamics of Civil Engineering Structures	Andrej Umek	5
The Finite Element Method	Boris Lutar	4
Stability of Engineering Structures	Andrej Umek	4
Structural Analysis for Plates, Shells and Solids	Boris Lutar	4
2 nd semester		
Subject Title	Lecturer	ECTS
Retaining structures	Stanislav Škrabl	4
Prestressed concrete	Branko Bedenik	5
Concrete Buildings	Branko Bedenik	4
Masonry buildings	Branko Bedenik	4
Timber buildings	Miroslav Premrov	4
Steel structures	Stojan Kravanja	5
Non-linear structural analysis	Stojan Kravanja	4
		60
3 rd semester		
Subject Title	Lecturer	ECTS
Building Physics II	Bruno Cvikl	4
Construction operations	Mirko Pšunder	4
Water structures	Renata Jecl	5
Transportation routes design II	Tomaž Tollazzi	4
Bridges	Branko Bedenik	4
Earthquake engineering	Miroslav Premrov	5
Rehabilitation Of Construction Structures	Andrej Štrukelj	4
4 th semester		
Selective subjects		15
Master diploma		15
		60

Study field: Construction Management		
1 st semester		
Subject Title	Lecturer	ECTS
Mathematics D – Diferential Equations	Matej Mencinger	4
Numerical metods	Bruno Cvikl	4
Building Materials	Lucija Hanžič	5
Building Physics II	Bruno Cvikl	4
Construction operations	Mirko Pšunder	4
Water structures	Renata Jecl	5
Transportation routes design II	Tomaž Tollazzi	4
2 nd semester		
Subject Title	Lecturer	ECTS
Retaining structures	Stanislav Škrabl	4
Bridging structures	Branko Bedenik	4
Building information models¹	Danijel Rebolj	3
Construction projects economics	Igor Pšunder	5
Operative planning	Mirko Pšunder	4
Building technology II	Andrej Štrukelj	5
e-Business in AEC	Karsten Menzel	5
		60

Modul: Construction Management		
3 rd semester		
Subject Title	Lecturer	ECTS
Project management in construction	Mirko Pšunder	5
Quality management	Andrej Štrukelj	3
Real estate valuation	Igor Pšunder	5
IT in construction management¹	Danijel Rebolj	4
Marketing in construction	Mirko Pšunder	4
Optimization in operational civil engineering	Uroš Klanšek	4
Business in Construction Enviroment	Anton Hauc	5
4. semester		
Subject Title	ECTS	
Selective subjects	15	
Master diploma	15	
	60	

Modul: Construction Informatics		
3 rd semester		
Subject Title	Lecturer	ECTS
The role of construction informatics1	Žiga Turk	5
Advanced programming and databases1	Andrej Tibaut	5
Interoperability and Building information models1	Danijel Rebolj	5
Knowledge Management1	Andrej Tibaut	5
Computer Mediated Communication	Žiga Turk	5
Modelling and Visualisation	Danijel Rebolj	5
4 th semester		
Subject Title	ECTS	
Selective subjects	15	
Master diploma	15	
	60	

Study field: Construction Infrastructure		
1 st semester		
Subject Title	Lecturer	ECTS
Mathematics D – Diferential Equations	Matej Mencinger	4
Numerical methods	Bruno Cviki	4
Building Materials	Lucija Hanžič	5
Building Physics II	Bruno Cviki	4
Construction operations	Mirko Pšunder	4
Water structures	Renata Jecl	5
Transportation routes design II	Tomaž Tollazzi	4
2 nd semester		
Retaining structures	Stanislav Škrabl	4
Bridging structures	Branko Bedenik	4
Traffic flows dynamics	Drago Sever	4
Surface water regulation	Renata Jecl	5
Construction projects economics	Igor Pšunder	5
Geotechnics of infrastructure engineering structures	Bojan Žlender	5
Building information models	Danijel Rebolj	3
	60	

Modul: Traffic construction		
3 rd semester		
Subject Title	Lecturer	ECTS
Transportation planning	Marjan Lep	6
Traffic technique II	Drago Sever	5
Road intersections and access points	Tomaž Tollazzi	4
Traffic areas in urban environment	Tomaž Tollazzi	6
Pavement structures	Bojan Žlender	4
Transport Infrastructure Management	Tomaž Tollazzi	5
4 th semester		
Selective subjects		15
Master diploma		15
		60

Modul: Geotechnic		
3 rd semester		
Subject Title	Lecturer	ECTS
Earthquake engineering	Miroslav Premrov	5
Selected chapters of soil mechanics	Ludvik Trauner	8
Rock mechanics and underground structures	Bojan Žlender	7
Pavement structures	Bojan Žlender	4
Special foundations	Stanislav Škrabl	6
4 th semester		
Selective subjects		15
Master diploma		15
		60

Modul: Hydrotechnic		
3 rd semester		
Subject Title	Lecturer	ECTS
Hydrology	Renata Jecl	5
Water resource engineering	Renata Jecl	4
Water supply systems and water treatment		8
Sanitary sewer design and wastewater treatment		8
Building installations		5
4 th semester		
Selective subjects		15
Master diploma		15
		60

Selective subjects			
semester	Subject Title	Lecturer	ECTS
4.	Investment Decisions	Igor Pšunder	5
	Corporate finance	Žan-Jan Oplotnik	5
	Business Law	Bratina	5
	Time and work management	Andrej Polajnar	5
	Environmental management in civil engineering	Branka Trček	5
	Regional spatial planning	Metka Sitar	5
	Maintenance and rehabilitation of structures	Andrej Štrukelj	5
	Computer Aided Facility Management		5
	Edge IT for AEC	Danijel Rebolj	5
	Engineering artificial intelligence		5
	Software Engineering - Project	Karsten Menzel	5
	Mobile computing in construction	Danijel Rebolj	5
	Virtual Enterprises	Karsten Menzel	5
	Low-volume roads	Tomaž Tollazzi	5
	Accompany traffic infrastructure objects	Tomaž Tollazzi	5
	Ground Improvement	Bojan Žlender	5
	Ground Anchoring	Borut Macuh	5
	Ground Works	Stanislav Škrabl	5

7.6 FINAL EXAMINATION, IF ANY

Type and level of qualification: Diploma thesis
 Official length of study programme: 3 YEARS (90 WEEKS)

The student should present the results of the Diploma Thesis. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: Master's degree
 Official length of study programme: 2 YEARS (60 WEEKS)

The student should present the results of the Master's Thesis to professional public before taking the viva examination. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: DOCTOR OF SCIENCE (PH.D.)
 Official length of study programme: 3 YEARS (90 WEEKS)

According to paragraph 157 of Statue of University the postgraduate students must publish their doctoral dissertations or their results before promotion in scientific publications or as independent scientific publications in order to be accessible for scientific public.

7.7 EXAMINATION AND ASSESSMENT REGULATIONS

ECTS and institutional grading scale:

ECTS Grade	% of successful students normally achieving the grade	Slovene grading system	Definition
A	10	10	EXCELLENT - outstanding performance with only minor errors
B	25	9	VERY GOOD - above the average standard but with some errors
C	30	8	GOOD - generally sound work with a number of notable errors
D	25	7	SATISFACTORY - fair but with significant shortcomings
E	10	6	SUFFICIENT - performance meets the minimum criteria
FX	-	5	FAIL - some more work required before the credit can be awarded
F	-	1-4	FAIL - considerable further work is required

ECTS credits:

1 full academic year	=	60 credits
1 semester	=	30 credits
1 term/trimester	=	20 credits

7.8 ECTS DEPARTMENTAL CO-ORDINATOR

Committee for ECTS:

- Assist. Prof. Dr. Bojana DOLINAR (Chairman of Committee)
- Assoc. Prof. Dr. Matjaž SKRINAR (member)
- Branko BOHINEC (member)

8 2nd DEGREE STUDY PROGRAMME OF TRAFFIC ENGINEERING

8.1 QUALIFICATION AWARDED

The Faculty also offers one 2nd degree study programme to obtain a master degree:

- Traffic Engineering.

Study programme last 2 years (4 terms). The courses are devised so as to provide the student with academic knowledge as well as the knowledge of the methodology of scientific and research work to obtain professional title: magister inženir prometa / magistrica inženirka prometa.

8.2 ADMISSION REQUIREMENTS

Into the second degree of Traffic Engineering can be enrolled who completed:

- Study programme of the 1st degree in the fields of transport, traffic engineering, traffic technology, logistics and civil engineering.
- Study programme of the 1st degree in the fields of mechanical engineering and mechatronics if they have completed study requirements, essential for the further studies by collecting 27 ECTS. They have to fulfill requirements in the subjects from the following fields: space and traffic planning, transportation routes design and transport economics.
- Study programme of the 1st degree in the fields of architecture if they have fulfilled study requirements, essential for the further studies, by collecting 27 ECTS before the enrolment into the study programme. They have to fulfil requirements in subjects from the following fields: means of transport, technology and traffic organisation, transportation routes design and statistics.
- Study programme of the 1st degree from other fields related to traffic engineering if they fulfilled the requirements, essential for further studies, acknowledged by 60 ECTS before the enrolment into the study programme.
- Higher professional study programme, verified before 11 June 2004, in the fields of transport, traffic engineering, traffic technology, logistics and civil engineering.
- Higher professional study programme, verified before 11 June 2004, in the field of mechanical engineering if they have completed study requirements, essential for further studies, by collecting 27 ECTS before the enrolment into the study programme. They have to fulfil the requirements in subjects from the following fields: space and traffic planning, transportation routes design and transportation and transport economics.
- Higher professional study programme, verified before 11 June 2004, in the fields related to traffic engineering if they have fulfilled study requirements, essential for further studies, by collecting 60 ECTS before the enrolment into the study programme. They have to fulfil requirements in the subjects from the following fields: space, traffic and environment planning, transportation routes design, transport economics, means of transport, technology and traffic organisation.

According to individual applications, commission decides about enrolment from related fields.

Limited enrolment:

Candidate selection will be done according to candidates' undergraduate study: 20% from their diploma work and 80% from study requirements.

Expected number of enrolment places:

- | | |
|--|----|
| - Full-time study: | 40 |
| - Part-time study: | 30 |
| - Minimal number of students required for part-time study: | 10 |

(In the case of lower number of candidates part-time study is performed individually.)

Conditions for the enrolment into the 2nd year: Students may enrol into the 2nd year if they have collected at least 40 ECTS from the exams of the 1st year and do the exam in Combinatorial optimization or Higher statistics.

Students who take the 1st year again or take a gap year must do all the exams of the 1st year (collect all 60 ECTS) before enrolment into the 2nd year.

Repetition of a year: Repetition of a year is regulated according to Statute of University of Maribor and Higher Education Act. Students, who have not fulfilled all the study requirements for further studies in the same study programme, can repeat a year once in postgraduate master education.

Part-time Studies

The Centre for Part-time Studies has its seat at the address: Faculty of Civil Engineering, Smetanova 17, tel. (02)2294 310.

Part-time studies will be offered if there are sufficient applicants.

FURTHER STUDIES ACCORDING TO THE CRITERIA FOR TRANSITION (FULL-TIME AND PART-TIME STUDIES)

According to the transition criteria, into the 2nd year of the second degree of Civil Engineering can be enrolled:

- Graduates of university study programmes, verified before 11 June 2004, in the field of traffic engineering and traffic technology, who were acknowledged 60 ECTS at the enrolment into the study programme.
- Graduates of university study programme, verified before 11 June 2004, in the fields of civil engineering, who were acknowledged up to 60 ECTS at the enrolment into the study programme.
- Graduates of university study programmes, verified before 11 June 2004, in the fields of mechanical engineering, mechatronics, architecture and urbanism as well as other to traffic engineering related fields who were acknowledged up to 40 ECTS at the enrolment into the study programme
- Candidates who completed higher professional study programme and study programme for specialist degree in the field of traffic engineering, traffic technology and logistics and were acknowledged 60 ECTS at the enrolment.
- Candidates who completed higher professional study programme and study programme for specialist degree in the fields of traffic engineering, traffic technology, logistics and civil engineering related fields and were acknowledged up to 60 ECTS at the enrolment into the study programme
- Candidates who completed higher professional study programme and study programme for specialist degree in the fields of mechanical engineering and other to traffic engineering related fields and were acknowledged 40 ECTS at the enrolment into the study programme.

Also, transition is possible from other study programmes of the 2nd degree from the following study fields: traffic technology, logistics civil engineering, mechanical engineering, architecture and urbanism as well as other to traffic engineering related fields.

The following measures are considered: fulfilling all the enrolment conditions and a number of places available.

Besides, the study requirements are established which were done by the student within his former studies and can be acknowledged. Students should hand in official leave form from their previous study programme and certificate about fulfilled study requirements in their previous programme. The study requirements, which a student have to fulfil to reach a master degree in a new program, are defined.

According to individual applications, commission decides about enrolment and transitions from related fields.

8.3 EDUCATIONAL AND PROFESSIONAL GOALS

Basic Aims of the programme Traffic Engineering:

- To reassure the study programme that offers wide range of knowledge from all the fields which are important to understand traffic phenomena and processes.
- To reach adjustment of the study programme with Bologna Declaration which indirectly enables international comparison and transferability.
- To educate a well versed expert in the field of traffic engineering who can support permanent development of Slovene society and can also compete on the European workforce market.
- To create an expert who is also competent (specialized) to solve specific engineering problems of chosen course.
- To educate an expert who can enable permanent development of society in Slovenia (public sector in all levels).
- To offer Slovene economy, especially transportation, an expert with the knowledge allowing international competition.
- To educate experts in traffic safety.

The new postgraduate study programme of the second degree is thematically divided into three theme modules which systematically follow the next progression:

1 – Students gain needed knowledge on mathematical science (theory of combinations, optimisation, statistics, numerical methods...)

2 – Students achieve knowledge on basic subjects from traffic engineering (“about residence”, “about environment”, “about space”, “about infrastructure”, “about systems and economy”, “about transport facilities and vehicles”, “about technology and organization”, “about safety and protection”, “about intelligent information systems”) through which graduates can understand variety, connection and mutual dependency of problems and can appropriately communicate and connect different specialities.

3 - Students intensify knowledge from course-specific subjects where knowledge of three fields is expanded (planning, technology and organization, safety in road traffic) with the purpose of winning enough knowledge that students of the chosen module can become top experts.

The proposed programme is modern and suggests complete updating of the second part of previous university programme “Traffic Engineering” according to European guidelines of Bologna Declaration and expected new needs of Slovene administration and economy.

The new programme will educate profound experts who will be able to incorporate into economy in Slovenia as well as abroad.

8.4 ACCESS TO FURTHER STUDIES

POSTGRADUATE STUDIES: PROGRAMMES AND OPTIONS

3th DEGREE PROGRAMME STUDIES:

- Civil Engineering Programme
- Nuclear Engineering And Technologies Programme
- Traffic Engineering Programme

8.5 COURSE STRUCTURE DIAGRAM WITH CREDITS (60 PER YEAR)

No.	Subject	ECTS	Semester	ECTS per year
1	Combinatorial Optimization	6	1	60
2	Theory Of Systems & Transport Economics	6	1	
3	Modern Aspects Of Transport Vehicles And Materials	6	1	
4	Traffic Flow Theory And Traffic Technique	6	1	
5	Methods & Techniques Of Spatial Research	6	1	
6	Advanced Statistics	6	2	
7	Inland Transport Technology	6	2	
8	Environmental Policy And Traffic	6	2	
9	Methods & Techniques Of Transportation Planning	6	2	
10	Traffic Safety And Security	6	2	
11	Traffic Infrastructure Design	6	3	60
12	ITS (Intelligent Transportation Systems)	6	3	
13	Sustainable Transportation Planning	6	3	
14	Infrastructural Projects	6	3	
15	Organising Of The Road Transport	3	3	
16	Organising The Railway Transport	3	3	
	Selective subjects	12	4	
	Master's Dissertation	18	4	
	Traffic Infrastructure Design	6	3	60
	ITS (Intelligent Transportation Systems)	6	3	
17	Transport And Business Law	3	3	
18	Business Logistics	3	3	
	Organising Of The Road Transport	3	3	
	Organising The Railway Transport	3	3	
	Sustainable Transportation Planning	6	3	
	Selective subjects	12	4	
	Master's Dissertation	18	4	
	Traffic Infrastructure Design	6	3	60
	ITS (Intelligent Transportation Systems)	6	3	
19	Safety Of Vehicles	6	3	
20	Traffic Infrastructure And Safety	6	3	
21	Traffic Safety Audit And Traffic Accident Analysis	6	3	
	Selective subjects	12	4	
22	Master's Dissertation	18	4	

SELECTIVE SUBJECTS

23	Transport – Logistics Nodes And Distribution	3	4
24	Maintenance Of Transport Systems	3	4
25	Quality Management	3	4
26	Advanced Transportation Modelling	3	4
27	Simulation Methods	3	4

8.6 FINAL EXAMINATION, IF ANY

Type and level of qualification: Diploma thesis

Official length of study programme: 3 YEARS (90 WEEKS)

The student should present the results of the Diploma Thesis. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: Master's degree

Official length of study programme: 2 YEARS (60 WEEKS)

The student should present the results of the Master's Thesis to professional public before taking the viva examination. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: DOCTOR OF SCIENCE (PH.D.)

Official length of study programme: 3 YEARS (90 WEEKS)

According to paragraph 157 of Statue of University the postgraduate students must publish their doctoral dissertations or their results before promotion in scientific publications or as independent scientific publications in order to be accessible for scientific public.

8.7 EXAMINATION AND ASSESSMENT REGULATIONS

ECTS and institutional grading scale:

ECTS Grade	% of successful students normally achieving the grade	Slovene grading system	Definition
A	10	10	EXCELLENT - outstanding performance with only minor errors
B	25	9	VERY GOOD - above the average standard but with some errors
C	30	8	GOOD - generally sound work with a number of notable errors
D	25	7	SATISFACTORY - fair but with significant shortcomings
E	10	6	SUFFICIENT - performance meets the minimum criteria
FX	-	5	FAIL - some more work required before the credit can be awarded
F	-	1-4	FAIL - considerable further work is required

ECTS credits:

1 full academic year	=	60 credits
1 semester	=	30 credits
1 term/trimester	=	20 credits

8.8 ECTS DEPARTMENTAL CO-ORDINATOR

Committee for ECTS:

- Assist. Prof. Dr. Bojana Dolinar (Chairman of Committee)
- Assoc. Prof. Dr. Matjaž Skrinar (member)
- Branko Bohinec (member)

9 2nd DEGREE STUDY PROGRAMME OF INDUSTRIAL ENGINEERING OF CIVIL ENGINEERING

9.1 QUALIFICATION AWARDED

The Faculty also offers one 2nd degree study programme to obtain a master degree:

- Industrial Engineering within Civil Engineering

Study programme last 2 years (4 terms). The courses are devised so as to provide the student with academic knowledge as well as the knowledge of the methodology of scientific and research work to obtain professional title: magister gospodarski inženir / magistrica gospodarska inženirka.

9.2 ADMISSION REQUIREMENTS

Into the 2nd degree of Industrial Engineering in Civil Engineering can be enrolled who completed:

- study programme of the 1st degree in the field of Industrial Engineering in civil engineering and Civil engineering
- study programme of the 1st degree in the fields of transport, traffic engineering, architecture, mechanical engineering, urbanism and other to civil engineering related fields if they have fulfilled study requirements by collecting 60 ECTS in the subjects that are essential for further studies before the enrolment into the study programme. They have to fulfil the requirements from the following fields: construction mechanics, geotechnics, hydrotechnics, structures, construction management, traffic engineering and construction materials
- higher professional study programme in the field of civil engineering, verified before 11 June 2004
- higher professional study programme, verified before 11 June 2004, in the fields of traffic engineering, architecture, mechanical engineering, urbanism and other to civil engineering related fields if they have completed study requirements by collecting 60 ECTS in the subjects that are essential for further studies before the enrolment into the study programme. They have to fulfill study requirements from the following fields: construction mechanics, geotechnics, hydrotechnics, structures, construction management, traffic engineering and construction materials.

Conditions for the enrolment into the 2nd year: Students may enrol into the 2nd year if they have collected at least 40 ECTS from the exams of the 1st year and fulfilled all the study requirements in Statistics and research methods.

Repetition of a year: Repetition of a year is regulated according to Statute of University of Maribor and Higher Education Act. Students, who have not accomplished all the study requirements for further studies in the same study programme, can repeat a year once in postgraduate master education.

Enrolment places

	Full-time	Part-time
Industrial Engineering in Civil Engineering – 2 nd Study Programme		
- Maribor	50	0

FURTHER STUDIES ACCORDING TO THE CRITERIA FOR TRANSITION (FULL-TIME AND PART-TIME STUDIES)

According to the transition criteria, into the 2nd year of the second degree of Industrial Engineering in Civil Engineering can be enrolled:

- graduates of university study programmes, verified before 11 June 2004, in the field of Industrial Engineering in civil engineering and Civil engineering, who were acknowledged 60 ECTS at the enrolment into the study programme
- graduates of university study programme, verified before 11 June 2004, in the fields of traffic engineering, architecture, mechanical engineering, urbanism and other to civil engineering related fields who were acknowledged up to 40 ECTS at the enrolment into the study programme
- candidates who completed higher professional study programme and study programme for specialist degree in the field of civil engineering who were acknowledged 60 ECTS at the enrolment into the study programme
- candidates who completed higher professional study programme and study programme for specialist degree in the fields of traffic engineering, architecture, mechanical engineering, urbanism and other to civil engineering related fields and were acknowledged 40 ECTS at the enrolment into the study programme.

Also, transition is possible from other study programmes of the 2nd degree from the following study fields: architecture, traffic engineering, mechanical engineering, urbanism and other to civil engineering related fields.

The following measures are considered: fulfilling all the enrolment conditions and a number of places available.

Besides, the study requirements, which were done by the student within his former studies and can be acknowledged, are established.

Students should hand in official leave form from their previous study programme and certificate about completed study requirements in their previous programme.

The study requirements, which a student have to do to reach a master degree in a new program, are defined.

According to individual applications, commission decides about enrolment and transitions from related fields.

9.3 EDUCATIONAL AND PROFESSIONAL GOALS

9.3.1 Basic goals of study programme

The 2nd level postgraduate master's study program of Industrial Engineering in Civil Engineering is aimed to educate engineers (with solid theoretical-scientific and special practical skills) with additional knowledge from the field of economic, business and management. The students of the study program have interdisciplinary knowledge from civil engineering and business area. They can work on most demanding engineering problems in companies, where the engineers are able to solve difficult and complex problems based on theoretical and practical solutions, procedures and methods and think about economic aspects of the solutions at the same time. The students will gain ability of abstract and associative study and analysis of problems in order to provide solutions and development of different discipline and transfer knowledge to practice. The basic idea is to give engineers additional business skills and to further educate existing managers to understand the connection between technology and management issues in companies. Such concept of the postgraduate master's study program is in accordance with common European orientation in higher education.

The contemporary based study program is adapted to reflect rich scientific research activity of academic staff at Faculty of Civil Engineering and Faculty of Economics and Business.

9.3.2 General competences of professional study programme

The M.Sc. qualified engineers will have deeper knowledge and increased skills to solve most difficult engineering and business problems in industry and also the ability to work as a part of research teams. They will be able to seek new knowledge sources and apply most current scientific and research methods for practical solutions of different engineering and business problems. They will be able to accept the leadership responsibilities and transfer the results of scientific work to practical problems. The broad civil engineering orientation of the study program, enriched with business and management skills, will generate creative and innovative potential of students.

The M.Sc. qualified engineers with broad analytical and scientific knowledge from civil engineering and business will find employment in almost all branches of industry, R&D institutes, independent companies, design departments, as project engineers, experts, consultants, managers and research team members.

9.3.3 Specific competence of professional civil engineers study program

Many of the more specific competences listed below are common to all study programs offered by the Faculty and they are:

- to develop knowledge and understanding of engineering science,
- to develop an understanding of engineering design ,
- to develop ability to apply practical knowledge to the solution of a wide range of engineering problems,
- to develop analytical and computational skills,
- to develop synthesis and evaluation skills,
- to develop communication skills based on engineering drawing, visual representation, specification and report writing,
- to develop a specialized knowledge in one of the civil engineering disciplines offered,
- to develop an understanding of engineering practice,
- to develop an understanding of management and structure of the engineering and product manufacturing industry,
- to develop an ability for both individual and team project work
- to develop project leadership skills.

The faculty staff are fully qualified and prepared to equip their students with all the necessary knowledge, training and modern aspects of engineering, during their studies. The staffs are open to new ideas and strive to provide their students with an insight into the latest research findings from at home and abroad. This educational process is fully supported by modern didactic and practical learning methods.

9.3.4 International comparison of Master study program

Master study program of Industrial Engineering in Civil Engineering is structured similarly to comparable study programs in developed European countries: The University of Kassel and Technical University Braunschweig.

9.4 ACCESS TO FURTHER STUDIES

POSTGRADUATE STUDIES: PROGRAMMES AND OPTIONS

3th DEGREE PROGRAMME STUDIES:

- Civil Engineering Programme

- Nuclear Engineering And Technologies Programme
- Traffic Engineering Programme

9.5 COURSE STRUCTURE DIAGRAM WITH CREDITS (60 PER YEAR)

1 st semester		
Subject Title	Lecturer	ECTS
Statistics And Research Methods	P. Tominc	6
Corporate Finance II	J. Ž. Oplotnik	6
Business Law	B. Bratina, P. Podgorelec	5
Building Materials Management	L. Hanzič	4
Building Physics II	B. Cvikl	4
Water Structures	R. Jecl	5
2 nd semester		
Subject Title	Lecturer	ECTS
Programme And Project Management	A. Hauc	6
Bridging Structures	B. Bedenik	4
Operative Planning	M. Pšunder	4
Building Technology II	A. Štrukelj	5
Selective Subjects FCE		5
Selective Subjects EPF		6
		60
3 rd semester		
Subject Title	Lecturer	ECTS
Governance And Strategic Management	M. Duh	6
Real Estate Appraisal	I. Pšunder	5
Project Management In Construction	M. Pšunder	4
It In Construction Management	D. Rebolj	4
Investment Decisions	I. Pšunder	5
Selective Subjects EPF		6
4 th semester		
Selective Subjects		10
Master Work		20
		60

SELECTIVE SUBJECTS FG		
Subject Title	Lecturer	ECTS
Time And Work Management	A. Polajnar	5
Regional Spatial Planning	M. Sitar	5
Environmental Management In Civil Engineering	B. Trček	5
Subject in 2 nd degree Study Programme in Civil Engineering, study field: Construction Infrastructure; modul: Construction Informatics	According to the teaching plan	5
Maintenance And Rehabilitation Of Structures	A. Štrukelj	5

SELECTIVE SUBJECTS EPF	
Subject Title	ECTS
Entrepreneurship Theories	6
Developing And Introducing Management Concepts In Practice	6
Organization Theory	6
Mergers And Acquisitions	6
Strategic Management Issues In E-Business	6
Project Oriented Strategic Management	6
Communication, Motivation And Conflict Solving	6
Strategic Human Resource Management	6
Strategic Supply Chain Management	6
International Economics Ii	6

9.6 FINAL EXAMINATION, IF ANY

Type and level of qualification: Diploma thesis
 Official length of study programme: 3 YEARS (90 WEEKS)

The student should present the results of the Diploma Thesis. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: Master's degree
 Official length of study programme: 2 YEARS (60 WEEKS)

The student should present the results of the Master's Thesis to professional public before taking the viva examination. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: DOCTOR OF SCIENCE (PH.D.)
 Official length of study programme: 3 YEARS (90 WEEKS)

According to paragraph 157 of Statue of University the postgraduate students must publish their doctoral dissertations or their results before promotion in scientific publications or as independent scientific publications in order to be accessible for scientific public.

9.7 EXAMINATION AND ASSESSMENT REGULATIONS

ECTS and institutional grading scale:

ECTS Grade	% of successful students normally achieving the grade	Slovene grading system	Definition
A	10	10	EXCELLENT - outstanding performance with only minor errors
B	25	9	VERY GOOD - above the average standard but with some errors
C	30	8	GOOD - generally sound work with a number of notable errors
D	25	7	SATISFACTORY - fair but with significant shortcomings
E	10	6	SUFFICIENT - performance meets the minimum criteria
FX	-	5	FAIL - some more work required before the credit can be awarded
F	-	1-4	FAIL - considerable further work is required

ECTS credits:

1 full academic year	=	60 credits
1 semester	=	30 credits
1 term/trimester	=	20 credits

9.8 ECTS DEPARTMENTAL CO-ORDINATOR

Committee for ECTS:

- Assist. Prof. Dr. Bojana Dolinar (Chairman of Committee)
- Assoc. Prof. Dr. Matjaž Skrinar (member)
- Branko Bohinec (member)

10 2nd DEGREE STUDY PROGRAMME OF ARCHITECTURE

10.1 QUALIFICATION AWARDED

The faculty offers one 2nd degree study programme to obtain master degree:

- Architecture

Study programme last 2 years (4 terms). The courses are devised so as to provide the student with academic knowledge as well as the knowledge of the methodology of scientific and research work to obtain professional title: magister inženir arhitekture / magistrica inženirka arhitekture.

10.2 ADMISSION REQUIREMENTS

Candidates can be enrolled into the 2nd degree study programme of Architecture if they completed:

- the 1st degree study programme of Architecture

Enrolment places:

Predicted number of enrolment places:

- full time study: 60

Enrolment limitation: Candidates for enrolment into Master study programmes are chosen according to achievements in the first degree studies (average mark, mark of diploma work). For a choice of candidates, achievements of a candidate at undergraduate study will be taken into account: 20% from diploma work and 80% from study obligations.

Conditions for passing to 2nd year: Students promote to the 2nd year if they gather at least 40 ECTS from the exams of the 1st year, they must pass the exams in next subjects: Studio M1 and Multi-apartment buildings, Architectural constructions and technologies, Studio M2, Public buildings and Methods and concepts of settlement planning.

Repetition of the year: Students, who do not fulfil conditions for promotion, can repeat a year if they gather 30 ECTS by passing the exams of the year they want to obtain. If students do not gather 30 ECTS due to legitimate reasons, the Committee for Study Affairs can exceptionally approve repetition of the year. Students are allowed to repeat just one year within the whole study due to unfulfilled obligations.

FURTHER STUDIES ACCORDING TO THE CRITERIA FOR TRANSITION

Conditions for transitions from other study programmes to undergraduate university programme of Architecture

According to transition measurements, into the 2st year of the study programme of the 2nd degree of Architecture can be enrolled:

- graduates of university study programme, verified before 11 June 2004, from the suitable professional field of Architecture awarded by 60 ECTS at the time of enrolment into the study programme,
- graduates of university study programme, verified before 11 June 2004, from other professional fields of Architecture and Landscape architecture who are awarded by 40 ECTS at the time of enrolment into the study programme.

Students of university study programmes of architecture who fulfil conditions for the enrolment into the study programme of the 2nd degree of Architecture will be determined missing obligations that should be done if they want to graduate in a new programme.

Coming from other study programmes of architecture to study programme of the 2nd degree of Architecture, candidates have to hand in verified certificate about fulfilled study obligations from a study at Higher education institution where they were enrolled as well as an official record of verified and valid syllabi for subjects and other contents in which they fulfilled study obligations from architectural subjects or architecture related fields (landscape architecture, urbanism). If study contents (subjects and other contents from a study programme) from candidates previous study do not cover contents of university study programme of the 1st degree Architecture in expected extent, the Committee for Student Affairs can define missing obligation which candidates must do if they want to graduate in a new programme.

10.3 EDUCATIONAL AND PROFESSIONAL GOALS

The profession of an architect is in the process of thorough and fast progressing transformation of the field. Political, cultural, engineering, economic, social and ecologic changes demand intensive confrontation with the themes of architecture and urbanism, especially in terms of permanent development. Traditional approach of architectural education, giving basic knowledge, remains the same. This goal must be seen in abilities and instruments which enable to understand complex tasks and master them interdisciplinary and responsible over the borders of the professional field¹.

¹ Consecutive two-tier system (study programmes of the first and second degree) differs from one-tier system in a new study structure, according to Direction 2005/36/EC, valid from 20 October 2007; it means higher liberalisation, automatic acknowledgement of qualifications (published in Official Journal L255 30 Sept 2005, p. 22)

Basic aims of the study programme of the 2nd degree of Architecture are:

- To educate the profile of an expert in the field of architecture according to the European guidelines, and with international comparability of the programme, to enable students to proceed doctoral studies in Slovenia (also at Faculty of Civil Engineering, University of Maribor) or in institutions in Europe or worldwide as well as to enable the graduate chances of employment in European Union.
- To offer a study programme which educates an architect-generalist and connects all specific knowledge from the field of architecture as well as space management. Graduates should be able to establish balance between functional-technical and artistic component of architectural design.
- To educate experts who will be capable to perform responsible tasks autonomously in the field of architectural design and projects as well as space management with elements of urban planning. According to Slovene legislation, the fields of responsibilities of architect have definite conditions for an architect-planner, supervisor, reviser of project-technical documentation in the field of architecture and urban planning, urban planner, responsible manager of space act execution, municipal planner, researcher, etc.
- To perform and update a study programme in terms of modern theoretical and technological knowledge which will enable graduates for independent upgrading of knowledge according to factors of modern development of architectural and urban design based on domains of permanent development: knowledge of criteria of building quality, buildings adjustment with the environment, modern methods and techniques of architectural and urban planning of public interest.

The study programme of the 2nd degree of Architecture qualifies an architect-generalist who should be able to think about space design according to public interest from regional-planning measurements to architectural detail and vice versa. The profile of an architect-generalist combines technical, social and humanistic knowledge to achieve abilities of space management and design as well as architecture and object building. The results of architectural design can be socially recognized as works of arts. Therefore, a design of the study programme of the 2nd degree of Architecture associates different architectural fields:

- upgrading of project and space planning skills in the fields of multi-apartment building, public object building, preservation of built heritage, urban planning and space management,
- acquiring natural-technical, humanistic and social contents, enriched with history and art contents as well as environment protection in terms of permanent development of settlements,
- knowledge of sociological bases about relationships in built environment and space (which enables understanding of the profession of an architect and the role of an architect in a society) in terms of permanent development of settlements,
- appropriate knowledge for solving constructional, technological and engineering problems connected to knowledge about processes in building industry, organisations, legislation and regulations as well as architectural and urban management (for practical realization).
- Study programme is directed into specialization of architectural, urban and space planning in terms of aesthetics and engineering.

10.4 ACCESS TO FURTHER STUDIES

POSTGRADUATE STUDIES: PROGRAMMES AND OPTIONS

3th DEGREE PROGRAMME STUDIES:

- Civil Engineering Programme
- Nuclear Engineering And Technologies Programme
- Traffic Engineering Programme

10.5 COURSE STRUCTURE DIAGRAM WITH CREDITS (60 PER YEAR)

Subject Title	Lecturer	ECTS
1st Semester		
Studio M1	M. Sitar	10
Residential Buildings	M. Sitar	5
Architectural Construction and Technology	A. Krainer	5
Methods and Concepts of Town Planning	U. Lobnik	5
Development of Settlement and Urban Form	-	5
2nd Semester		
Studio M2	J. Zadravec	10
Public Buildings	J. Zadravec	5
Spatial Strategies and Urban Development	M. Sitar	5
Architectural Analysis and Theory in Contemporary Architecture	P. Čeferin	5
Bioclimatic Concepts In Architecture	D. Korošak	5

MODUL: SUSTAINABLE BUILDING		
3 rd Semester		
Studio – Sustainable Building	A. Prinčič	10
Contemporary Trends In Architecture	A. Prinčič	5
Smart Architecture	M.Sitar	5
Selective Subject	-	5
Selective Subject	-	5
4 th Semester		
Master Diploma	Mentor	30
MODUL: SUSTAINABLE CITY		
3 rd Semester		
Studio – Sustainable City	U.Lobnik	10
Transformation and Regeneration of the City	U. Lobnik	5
Methods and Techniques of Spatial Planning	A. Pogačnik	5
Selective Subject	-	5
Selective Subject	-	5
4 th Semester		
Master Diploma	Mentor	30

SELECTIVE SUBJECTS

Subject Title	Lecturer	ECTS
Sustainable Management of Urban Environment	B.Trček	5
Urban Futures	M.Sitar	5
Urban Landscape Design	D. Grimm Pretner	5
Urban Management	U. Lobnik	5
Sustainable Urban Transport and Mobility Planning	M. Lep	5
Interiors in The 20th and 21st Century	P. Čeferin	5
Architecture and visual culture	-	5
Cultural Perspective in Architecture	H. Homann	5
Conservation Methods and Techniques	S. Hoyer	5
Maintenance and Rehabilitation of Structures	A.Štrukelj	5
Virtual Spaces	G. Doytchinov	5
International Project	U. Lobnik	5

10.6 FINAL EXAMINATION, IF ANY

Type and level of qualification: Diploma thesis

Official length of study programme: 3 YEARS (90 WEEKS)

The student should present the results of the Diploma Thesis. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: Master's degree

Official length of study programme: 2 YEARS (60 WEEKS)

The student should present the results of the Master's Thesis to professional public before taking the viva examination. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: Doctor of science (PH.D.)

Official length of study programme: 3 YEARS (90 WEEKS)

According to paragraph 157 of Statue of University the postgraduate students must publish their doctoral dissertations or their results before promotion in scientific publications or as independent scientific publications in order to be accessible for scientific public.

10.7 EXAMINATION AND ASSESSMENT REGULATIONS

ECTS and institutional grading scale:

ECTS Grade	% of successful students normally achieving the grade	Slovene grading system	Definition
A	10	10	EXCELLENT - outstanding performance with only minor errors
B	25	9	VERY GOOD - above the average standard but with some errors
C	30	8	GOOD - generally sound work with a number of notable errors
D	25	7	SATISFACTORY - fair but with significant shortcomings
E	10	6	SUFFICIENT - performance meets the minimum criteria
FX	-	5	FAIL - some more work required before the credit can be awarded
F	-	1-4	FAIL - considerable further work is required

ECTS credits:

1 full academic year	=	60 credits
1 semester	=	30 credits
1 term/trimester	=	20 credits

10.8 ECTS DEPARTMENTAL CO-ORDINATOR

Committee for ECTS:

- Assist. Prof. Dr. Bojana Dolinar (Chairman of Committee)
- Assoc. Prof. Dr. Matjaž Skrinar (member)
- Branko Bohinec (member)

3th D E G R E E S T U D Y P R O G R A M M E S

11 [3th DEGREE STUDY PROGRAMME OF CIVIL ENGINEERING](#)

11.1 QUALIFICATION AWARDED

There is one 3th degree study programme to obtain a doctoral degree:

- Civil Engineering

PhD Programme last 3 years (6 terms). After successfully defending the doctoral dissertation the candidate obtain the professional title: doktor znanosti / doktorica znanosti.

11.2 ADMISSION REQUIREMENTS

PhD PROGRAMME OF CIVIL ENGINEERING 3th Degree

Duration of studies

Studies last for 3 years (6 terms of courses)

Enrolment

Into doctoral studies of the third degree of Civil Engineering can be enrolled who completed:

- study programme of the second degree;
- university study programme verified before 11 June 2004;
- professionally oriented study programme verified before 11 June 2004, and a specialized study programme. These candidates should complete study obligations by collecting 45 ECTS, they should do exams (the subjects for certain study programmes are determined by study commission for each candidate individually) or
- study programme of any national or international university, which educates for professions, directed by EU, or any other uniform master study programme which is awarded 300 ECTS.

Enrolment places

	Full-time	Part-time
Civil Engineering – PhD Programme		
- Maribor	10	10

Part-time Studies

The Centre for Part-time Studies has its seat at the address: Faculty of Civil Engineering, Smetanova 17, tel. (02)2294 310.

FURTHER STUDIES ACCORDING TO THE CRITERIA FOR TRANSITION
(FULL-TIMER AND PART-TIME STUDIES)

11.3 EDUCATIONAL AND PROFESSIONAL GOALS

The aims of doctoral study programme “Civil Engineering” is to educate top experts in the field with broad, but field-related specific knowledge, which enables the in-depth understanding of theoretical and methodological concepts and prepares the candidates for an independent development of new knowledge and solving of the most challenging problems in the field of civil engineering. Besides developing new knowledge, the qualified experts will be skilled in leading scientific-research and development projects as well as in conducting all others most demanding tasks from the named field.

Thus, a basic purpose of doctoral study programme “Civil Engineering” is to educate the new researchers and qualify recognized scientists and experts from the field to be able to develop and apply new knowledge. The basic aims of the programme are:

- to qualify the students for profound scientific-research work in the field of civil engineering,
- to enable students for an in-depth understanding and mastering of modern theoretical and methodological concepts, recognition, analysis and solving of theoretical demanding problems in the field of civil engineering,
- considering ethical and ecological standards as well as the concept of permanent development at daily scientific-research work,
- to qualify students to search, study and apply existent knowledge,
- to qualify students to understand the existing knowledge and upgrade it with new and original scientific contribution
- to qualify students to promote their own knowledge,
- to stimulate students to finish their doctoral studies with theses and successfully defend them.

With the suggested doctoral study programme based on these aims, the students will acquire theoretical knowledge and its application in practice in order to achieve general and subject-specific competences. The gained knowledge will be comparable with the knowledge acquired in equivalent doctoral programmes of related institutions in Europe.

11.4 ACCESS TO FURTHER STUDIES

11.5 COURSE STRUCTURE DIAGRAM WITH CREDITS (60 PER YEAR)

No.	Subject	ECTS
1	Mathematical physics in engineering	15
2	Combinatorial optimization	15
3	Selected topics in concrete structures	15
4	Selected topics in Building Physics	15
5	Selected chapters in fluid dynamics	15
6	Transport phenomena in porous media	15
7	Properties of Building Materials	15
8	Quality assurance of building materials and products	15
9	Selected Topics in Optimization of Construction Production	15
10	Timely Assurance in Construction Project Execution	15
11	Selected topics in steel structures	15
12	Structural optimization and synthesis	15
13	Time and Work Managemen	15
14	Selected topics in timber structures	15
15	Earthquake engineering	15
16	Feasibility assessment of construction projects	15
17	Theory and Practice of Construction Project Management	15
18	Information technologies for construction project management	15
19	R&D trends in Construction Informatics	15
20	Integrated systems in planning and design	15
21	Structural Dynamics	15
22	Structural non-linear analysis	15
23	Stability of geotechnical structures	15
24	Finite and boundary element method	15
25	Selected Chapters in Construction Technology	15
26	Methods for connectivity of digital building models	15
27	Selected topics in traffic infrastructure	15
28	Soil-structure interaction	15
29	Ecology in Civil Engineering	15
30	Construction Management and Ecology	15
31	Continuum mechanics	15
32	Elastodynamics, wave propagation and dynamic soil-structure iteration	15
33	Construction Process Reengineering	15
34	Soil reology	15
35	Pavements	15
36	Identification of structure's mechanical properties by measurements	15
37	Individual research work 1	15
38	Individual research work 2	15
39	Individual research work 3	30
40	Individual research work 4	30
41	Preparation and defence of Doctoral Thesis	30

11.6 FINAL EXAMINATION, IF ANY

Type and level of qualification: Diploma thesis

Official length of study programme: 3 YEARS (90 WEEKS)

The student should present the results of the Diploma Thesis. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: Master's degree

Official length of study programme: 2 YEARS (60 WEEKS)

The student should present the results of the Master's Thesis to professional public before taking the viva examination. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: DOCTOR OF SCIENCE (PH.D.)

Official length of study programme: 3 YEARS (90 WEEKS)

According to paragraph 157 of Statute of University the postgraduate students must publish their doctoral dissertations or their results before promotion in scientific publications or as independent scientific publications in order to be accessible for scientific public.

11.7 EXAMINATION AND ASSESSMENT REGULATIONS

ECTS and institutional grading scale:

ECTS Grade	% of successful students normally achieving the grade	Slovene grading system	Definition
A	10	10	EXCELLENT - outstanding performance with only minor errors
B	25	9	VERY GOOD - above the average standard but with some errors
C	30	8	GOOD - generally sound work with a number of notable errors
D	25	7	SATISFACTORY - fair but with significant shortcomings
E	10	6	SUFFICIENT - performance meets the minimum criteria
FX	-	5	FAIL - some more work required before the credit can be awarded
F	-	1-4	FAIL - considerable further work is required

ECTS credits:

1 full academic year	=	60 credits
1 semester	=	30 credits
1 term/trimester	=	20 credits

11.8 ECTS DEPARTMENTAL CO-ORDINATOR

Committee for ECTS:

- Assist. Prof. Dr. Bojana Dolinar (Chairman of Committee)
- Assoc. Prof. Dr. Matjaž Skrinar (member)
- Branko Bohinec (member)

12 3th DEGREE STUDY PROGRAMME OF TRAFFIC ENGINEERING

12.1 QUALIFICATION AWARDED

There is one 3th degree study programme to obtain a doctoral degree:

- Traffic Engineering

PhD Programme last 3 years (6 terms). After successfully defending the doctoral dissertation the candidate obtain the professional title: doktor znanosti / doktorica znanosti.

12.2 ADMISSION REQUIREMENTS

PHD PROGRAMME OF TRAFFIC ENGINEERING 3th Degree

Duration of studies

Studies last for 3 years (6 terms of courses)

Enrolment

Into doctoral studies of the third degree of Traffic Engineering can be enrolled who completed:

- study programme of the second degree;
- university study programme verified before 11 June 2004;
- professionally oriented study programme, verified before 11 June 2004, and a specialized study programme. These candidates should complete study obligations by collecting 45 ECTS, they should do exams (the subjects for certain study programmes are determined by study commission for each candidate individually);
- study programme, which educates for professions, directed by EU, or any other uniform Master study programme which is awarded 300 ECTS.

If only a limited number of students is admitted, the candidates are selected according to results of the second degree studies (average mark 80%, master thesis 20%)

Enrolment places

	Full-time	Part-time
Trafic Engineering – PhD Programme		
- Maribor	10	10

Part-time Studies

The Centre for Part-time Studies has its seat at the address: Faculty of Civil Engineering, Smetanova 17, tel. (02)2294 310.

FURTHER STUDIES ACCORDING TO THE CRITERIA FOR TRANSITION (FULL-TIMER AND PART-TIME STUDIES)

12.3 EDUCATIONAL AND PROFESSIONAL GOALS

The aims of doctoral study programme is to educate top experts in the field of Traffic Engineering with wide knowledge in natural and social sciences, but also field-specific knowledge which transmits the perspective of understanding worldwide events and trends, in-depth understanding of theoretical and methodological concepts and ability for self-dependent development of new knowledge and solving the most challenging problems by testing and improving new knowledge and discovering new solutions in the field of traffic engineering. Besides developing new theories, qualified experts will be able to manage the most demanding working systems and scientific-research projects in the broad professional and scientific field and bring critical reflexion in full development.

Therefore, a basic purpose of doctoral study programme Traffic Engineering is to qualify scientists from the filed of traffic engineering who will be able to develop and apply new knowledge. The field covers the highest strategic level of development and management stuff in all structures of economy, state administration (logistics organizations, ministries, agencies, military, police, customs, and the like), scientific institutes and universities.

The aims of doctoral study Traffic Engineering are directed towards:

- recognition, analysis and organization of global traffic system and related intermodal traffic subsystems;

- study of the most demanding engineering and technological operations and processes in an organization with the emphasis on management of global intermodal traffic systems;
- usage of information management systems;
- knowledge in management of organization as a system,
- qualifying for a profound scientific-research work in the interdisciplinary field of global intermodal traffic systems, subsystems and technologies;
- qualifying for a permanent study and development of new knowledge.

With the suggested doctoral study programme based on these aims, the students will acquire theoretical knowledge and its application in practice in order to achieve general and subject-specific competences. The gained knowledge will be comparable with the knowledge acquired in equivalent doctoral programmes of related institutions in Europe.

12.4 ACCESS TO FURTHER STUDIES

12.5 COURSE STRUCTURE DIAGRAM WITH CREDITS (60 PER YEAR)

No.	Subject	ECTS
1	Mathematical simulations in traffic	15
2	Global intelligent information systems (ITS)	15
3	Global multimodal transportation systems, selected topics	15
4	The management of integrated transport systems	15
5	Technologies for transportation infrastructure management	15
6	Advanced transportation devices	15
7	Global transportation economy industry	15
8	Business policy of mega transport companies	15
9	EU transport policy	15
10	The evaluation and analysis of transport demand	15
11	Transportation infrastructure project management	15
12	The integral transportation for terminals	15
13	Spatial Planning and Transport Infrastructure Development	15
14	Traffic and Environment	15
15	Traffic automation	15
16	Selected themes of road safety	15
17	Traffic flow modelling and simulation	15
18	Simulation of traffic safety models	15
19	Individual research work 1	30
20	Individual research work 2	30
21	Individual research work 3	30
22	Preparation and defence of Doctoral Thesis	30

12.6 FINAL EXAMINATION, IF ANY

Type and level of qualification: Diploma thesis

Official length of study programme: 3 YEARS (90 WEEKS)

The student should present the results of the Diploma Thesis. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: Master's degree

Official length of study programme: 2 YEARS (60 WEEKS)

The student should present the results of the Master's Thesis to professional public before taking the viva examination. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: DOCTOR OF SCIENCE (PH.D.)
 Official length of study programme: 3 YEARS (90 WEEKS)

According to paragraph 157 of Statute of University the postgraduate students must publish their doctoral dissertations or their results before promotion in scientific publications or as independent scientific publications in order to be accessible for scientific public.

12.7 EXAMINATION AND ASSESSMENT REGULATIONS

ECTS and institutional grading scale:

ECTS Grade	% of successful students normally achieving the grade	Slovene grading system	Definition
A	10	10	EXCELLENT - outstanding performance with only minor errors
B	25	9	VERY GOOD - above the average standard but with some errors
C	30	8	GOOD - generally sound work with a number of notable errors
D	25	7	SATISFACTORY - fair but with significant shortcomings
E	10	6	SUFFICIENT - performance meets the minimum criteria
FX	-	5	FAIL - some more work required before the credit can be awarded
F	-	1-4	FAIL - considerable further work is required

ECTS credits:

1 full academic year	=	60 credits
1 semester	=	30 credits
1 term/trimester	=	20 credits

12.8 ECTS DEPARTMENTAL CO-ORDINATOR

Committee for ECTS:

- Assist. Prof. Dr. Bojana Dolinar (Chairman of Committee)
- Assoc. Prof. Dr. Matjaž Skrinar (member)
- Branko Bohinec (member)

13 PROFESSIONALLY STUDY PROGRAMME OF NUCLEAR ENGINEERING AND TECHNOLOGIES

13.1 QUALIFICATION AWARDED

There is one 3th degree study programme to obtain a doctoral degree:

- Nuclear Engineering and Technologies

PhD Programme last 3 years (6 terms). After successfully defending the doctoral dissertation the candidate obtain the professional title: doktor znanosti / doktorica znanosti.

13.2 ADMISSION REQUIREMENTS

PHD PROGRAMME OF NUCLEAR ENERGETICS AND TECHNOLOGIES 3th Degree

Duration of studies

Studies last for 3 years (6 terms of courses)

Enrolment

Into doctoral studies of the third degree of Nuclear Energetics and Technologies can be enrolled who completed:

- study programme of the second degree;
- university study programme verified before 11 June 2004;
- professionally oriented study programme, verified before 11 June 2004, and a specialized study programme. These candidates should complete study obligations by collecting 45 ECTS before enrolment, they should do exams (the subjects for certain study programmes are determined by study commission for each candidate individually);
- study programme, which educates for professions, directed by EU, or any other uniform Master study programme which is awarded 300 ECTS.

If only a limited number of students is admitted, the candidates are selected according to results of the second degree studies (average mark 80%, master thesis 20%)

Enrolment places

	Full-time	Part-time
Nuclear Engineering and Technologies – PhD Programme		
- Maribor	10	8

Part-time Studies

The Centre for Part-time Studies has its seat at the address: Faculty of Civil Engineering, Smetanova 17, tel. (02)2294 310.

FURTHER STUDIES ACCORDING TO THE CRITERIA FOR TRANSITION (FULL-TIMER AND PART-TIME STUDIES)

13.3 EDUCATIONAL AND PROFESSIONAL GOALS

The purpose of the study programme Nuclear Energetics and Technology is to educate top experts in the named field with broad but also field-specific knowledge which transmits the perspective of understanding of worldwide events and trends, in-depth understanding of theoretical and methodological concepts and ability for self-dependent development of new knowledge and solving the most challenging problems by testing and improving new knowledge and discovering new solutions in the field of energetic. Besides developing new skills, qualified experts will be able to manage the most demanding working systems and scientific-research projects in the broad professional and scientific field and bring critical reflexion in full development.

Thus, a basic purpose of doctoral study programme Nuclear Energetics is to qualify scientists from the field of energetic who will be able to develop and apply new knowledge. The field covers the highest strategic level of development and management stuff in all structures of economy, state administration, agencies, military, police, customs, and the like, scientific institutes and universities.

The aims of doctoral study of energetic are directed towards:

- recognition, analysis and organization of nuclear systems and related nuclear subsystems;
- education of the most demanding engineering and technological operations and processes in an organization with the emphasis on management of nuclear systems and their subsystems;
- recognition and consideration of ecological standards, operations and activities in nuclear systems;
- usage of information management systems in nuclear systems;
- knowledge of management of an organization as a system;

- qualifying for a profound scientific-research work in the interdisciplinary field of nuclear systems, subsystems and technologies;
- qualifying for a permanent study and development of new knowledge.

With the suggested doctoral study programme based on these aims, the students will acquire theoretical knowledge and its application in practice in order to achieve general and subject-specific competences. The gained knowledge will be comparable with the knowledge acquired in equivalent doctoral programmes of related institutions in Europe.

13.4 ACCESS TO FURTHER STUDIES

13.5 COURSE STRUCTURE DIAGRAM WITH CREDITS (60 PER YEAR)

No.	Subject	ECTS
1	Reactor Engineering	10
2	Nuclear Reactor Theory	10
3	Nuclear Reactor Heat Transfere	10
4	Chemistry of nuclear fuel	10
5	Radioecology	10
6	Plasma physics, plasma technology and fusion	10
7	Dynamics of reactor buildings	10
8	Foundations of nuclear structures	10
9	Nuclear reactor computations	10
10	Reactor instrumentation and experiments	10
11	Mathematical physics in engineering	10
12	Reactor materials	10
13	Thermo-hydraulic computations	10
14	Safety and Realiability Analyses	10
15	Theory of two-phases flow	10
16	Fusion reactors and materials	10
17	Neutron Physics	10
18	Project Management Of Nuclear Energy And Technology	10
19	Technology Of Nuclear Power Plants	10
20	Advanced Nuclear Fuel Cycles	10
21	Nuclear Radiation And Nondestructive Testing Methods	10
22	Instrumental Methods Of Chemical Analysis In Nuclear Engineering	10
23	Radiation Interaction In Matter	10
24	Regulations and licencing in radiation activities	10
25	Neutron Transport Theory	10
26	Radioaktivty And Radiation Protection	10
27	Safeguards Of Nuclear Materials And Technologies	10
28	Disposal of Radioactive waste	10
29	Nuclear fuel technology	10
30	Individual research I	10
31	Individual research II	10
32	Individual research III	30
33	Individual research IV	30
34	Doctoral Thesis	30

13.6 FINAL EXAMINATION, IF ANY

Type and level of qualification: Diploma thesis
 Official length of study programme: 3 YEARS (90 WEEKS)

The student should present the results of the Diploma Thesis. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: Master's degree

Official length of study programme: 2 YEARS (60 WEEKS)

The student should present the results of the Master's Thesis to professional public before taking the viva examination. The presented results should be based on the research performed by the student in the course of studies.

Type and level of qualification: DOCTOR OF SCIENCE (PH.D.)

Official length of study programme: 3 YEARS (90 WEEKS)

According to paragraph 157 of Statute of University the postgraduate students must publish their doctoral dissertations or their results before promotion in scientific publications or as independent scientific publications in order to be accessible for scientific public.

13.7 EXAMINATION AND ASSESSMENT REGULATIONS

ECTS and institutional grading scale:

ECTS Grade	% of successful students normally achieving the grade	Slovene grading system	Definition
A	10	10	EXCELLENT - outstanding performance with only minor errors
B	25	9	VERY GOOD - above the average standard but with some errors
C	30	8	GOOD - generally sound work with a number of notable errors
D	25	7	SATISFACTORY - fair but with significant shortcomings
E	10	6	SUFFICIENT - performance meets the minimum criteria
FX	-	5	FAIL - some more work required before the credit can be awarded
F	-	1-4	FAIL - considerable further work is required

ECTS credits:

1 full academic year	=	60 credits
1 semester	=	30 credits
1 term/trimester	=	20 credits

13.8 ECTS DEPARTMENTAL CO-ORDINATOR

Committee for ECTS:

- Assist. Prof. Dr. Bojana Dolinar (Chairman of Committee)
- Assoc. Prof. Dr. Matjaž Skrinar (member)
- Branko Bohinec (member)