UNIVERSITY OF PRISHTINA
"HASAN PRISHTINA"

FACULTY OF CIVIL ENGINEERING

DEPARTMENT HYDROTECHNICS – MSc.

2014 – 2017

Study Program Hydrotechnics - Master Level

Description (name) of the academic programme	**Study Program** **Hydrotechnics**
NFQ Level (BA, MA, PhD, doctorate programme, university course)	**Level 7** **MA**
Academic degree or certificate, spelled out in full and in abbreviated form	**Master of Civil Engineering- Study Program: Hydrotechnics** **Msc. of Civil Engineering – Programme Study Hydrotechnics**
Study field according to Erasmus Subject area Code (ESAC)	**06.4. Civil Engineering**
Profile of the academic programme / Scientific position	**Hydrotechnics**
Minimum period of study	**Minimal 2 years of study**
Type, structure and cycle (full time or part time)	**Full-time present**
Number of ECTS	**120 ECTS Total,** **60 ECTS per year**
Programme (short overview)/Courses	**Obligatory:** **Sem. I** 1. Scientific Research Methodology 2. Hydrology II 3. Project Management 4. River Regulation **Sem. II.** 1. Municipal Water Supply II 2. Dams 3. Construction Management

	Sem. III 1. The Use of Water Power II 2. Hydrotechnical Melioratios **Electives:** **Sem. I** 1. Concrete Constructions II 2. Hydrotechnical and Geotechnical Objects 3. Hydrogeology 4. Geodezy application on Hydrotechnical Objects 5. Technical English Language I 6. Technical German Language I **Sem. II** 1. Tunnels 2. Special Constructions from CS 3. Integrated Flood Protection 4. Technical English Language II 5. Technical German Language II **Sem. III** 1. Municipal Water Sewerage II 2. Special Foundations 3. Management of Water Resources 4. New Approaches on Dams Constructions 5. Drinking and Waste Water Treatment Technology 6. Resources, Quality and Ecosystems 7. Engineering Economics
Number of student places	20 students
Person in charge of the academic programme	Prof. Asoc. Dr. Zekirija Idrizi
Scientific/artistic staff (number per staff category)	11 profesors dhe 6 teaching assistants

The Study Program

First Year – Semester I						
			Hours/ Week			
N	**Z**	**Subject**	**L**	**E**	**ECTS**	**Professor**
1.	O	Scientific Research Methodology	2	1	3	Prof. Asoc. Dr. Violeta Nushi
2.	O	Hydrology II	3	2	9	Prof.asoc. Dr. Naim Hasani
3.	O	Project Management	2	0	3	Prof. DDr. Davorin Kralj/ Mr. Sc. Ilir Rodiqi
4.	O	River Regulation	3	2	9	Prof.ass.dr.Laura Kusari
		Totali	**10**	**5**	**24**	
		Subject	**L**	**E**	**ECTS**	**Professor**
4.	E	Hydrotechnical and Geotechnical Objects	2	1	3	Prof.dr.Fikret Ahmedi
5.	E	Concrete Constructions II	2	2	6	Mr.sc.Kadri Morina,ligj.
6.	E	Hydrogeology	2	2	3	Prof.asoc. dr. Naim Hasani
7.	E	Geodesy Application on Hydrotechnical Objects	2	2	3	Prof. dr. Murat Meha
8	E	Technical English Language I	2	0	3	Nedime Belegu, lekt
9	E	Technical German Language I	2	0	3	Prof. ass. Dr. Milote Sadiku

First year – semester II						
			Hours/ Week			
N		**Subject**	**L**	**E**	**ECTS**	**Professor**
1	O	Municipal Water Supply II	3	3	9	Prof.asoc.dr.Naim Hasani
2	O	Dams	2	2	6	Prof.asoc.dr.Zekirija Idrizi
3	O	Construction Management	2	2	6	Prof. DDr. Davorin Kralj/ Mr. Sc. Esat Gashi

		Total	**7**	**7**	**21**	
		Subject	**L**	**E**	**ECTS**	**Professor**
4	E	Tunnels	2	1	6	Prof.dr.Fikret Ahmedi
5	E	Special Constructions from CS	2	2	6	Prof.ass.dr.Florim Grajcevci
6	E	Integrated Flood Protection	2	1	3	Prof. ass.dr. Laura Kusari
7	E	Technical English Language II	2	0	3	Nedime Belegu, lekt
8	E	Technical German Language II	2	0	3	Prof. ass. Dr. Milote Sadiku

Second Year – Semester III						
			Houres/ Weeks			
		Subject	**L**	**E**	**ECTS**	**Professor**
1	O	The Use of Water Power II	3	3	9	Prof.dr.Sylejman Daka
2	O	Hydrotechnical Melioratios	3	2	9	Prof.ass.dr.Laura Kusari
3		Total	6	5	18	
		Subject	**L**	**E**	**ECTS**	**Professor**
4	E	Special Foundations	2	1	6	Prof.dr.Fikret Ahmedi
3	E	Municipal Sewerage II	2	2	6	Prof.asoc.dr.Naim Hasani
5	E	Management of Water Resources	2	2	6	Prof.ass.dr.Figene Ahmedi
6	E	New Approaches on Dam Constructions	2	2	6	Prof. asoc. dr. .Zekirija Idrizi
7	E	Drinking and Waste Water Treatment Technology	2	2	6	Prof.ass.dr.Figene Ahmedi
8	E	Resources, Quality and Ecosystems	2	2	6	Prof.ass.dr.Figene Ahmedi
9	E	Engineering Economics	2	2	6	Prof. Dr. Enver KutIlovci/ Mr.Sc. Ilir Rodiqi

		Subject	Hours	ECTS	Professor
1	O	Thesis Work		30	
		Total	**/**	**30**	

COURSE DESCRITPION:

SCIENTIFIC RESEARCH METHODS

Short content: Collection, study and systematization of information. Meaning, types and verification of hypotheses. Meaning, scope and elements characteristic of the seminar notes.Data collection. Analysis of the data. Methods of research work. Modelling methods .Statistical method. Mathematical methods. Experimental methods. Communications Theory as method. The case study method. Visual methods. Method of survey and interviews

Learning outcomes and results: After completion of the course candidates will be able to write different reports , different texts and will be able to complete the narrative aspect of scientific work including the Master thesis

Volume and engagement of works for this course: 2+1, 3 ECTS

Activity	Hours	Day	week	Total
Lecture	2	1	15	30
Theoretical exercises/ Laboratory	1	1	15	15
Practical work				
Contact with lecturer / consultation	1	1	3	3
Field practice				
Tests and seminars	1	1	10	10
Home work				
Independent study (library or at home)	1	1	5	5
Preparing for final exam	2	5	1	10
The time presented during the evaluation (tests; quiz and final exam)	3	1	1	3
Projects , presentation and ect	2	1	1	2
Total				78

Teaching and Learning Methods: Lecturing, preparation of case studies and presentation
Evaluation Methods and criteria:Theoretical valuation with tests, seminars and final exams. The practical part with semester elaborates.
Concretisation tools/TI: laptop, projector, board and markers

Ratio between theoretical and practical part:

Theoretical part	Practical part
60%	40%

Basic literature: Zelenika R. Methodology and technology prepared the research work, Rijeka 1999;Fellows,R.; Liu, A. Research Methods for Constructions, Oxford: The Blackwell Science, 1997; Holt.D.G.: A guide to succeful dissertation study for students of the built environment.

HYDROLOGY II

Short Content: Methods for probability analyses in hydrology, hydrologic prognosis, large waters, small waters, stohastic methods.

Learning outcomes and results: The application of hydrologic models in the design of hydrotechnical objects.
Results of learning the subject: To know the applicative methods in hydrology, modelary to solve the problems, to process the hydrologic data, to foresee the hydrologic changes for security reasons and economical use.

Volume and needed time of work (3+2, 9)

Activity	Hour	Days	Weeks	Total
Lectures	3	1	15	45
Theoretical excercises/laboratory	2	1	15	30
Practical work	3	5	1	15
Contacts with lecturer/consultations	0.1	5	15	15
Field excercises				
Colocfiums, seminars	1	1	3	3
Home work	1	1	15	15
Self study time (in library or at home)	4	4	15	60
Final preparation for the exam	2	7	1	15
Time spent on evaluation (tests, quizzes, final exam)	1	1	3	3
Projects, presentations, etc.	1	1	1	4
Total				205

Teaching and Learning Methods: Lecturing, preparation of case studies and presentation
Evaluation Methods and criteria:Theoretical valuation with tests, seminars and final exams. The practical part with semester elaborates.
Concretisation tools/TI: laptop, projector, board and markers

Ratio between theoretical and practical part:

Theoretical part	Practical part
60%	40%

Basic literature: Dr. Naim Hasani: Lectures and excersises of Hydrology
Agim Selenica: Hidrology (Printing house of the university book, Tirana)
Manik: Hidrologie und Wasserwirtschaft

PROJECT MANAGEMENT

Short content: Basic principles of management: what is the management, who are managers. Development of the management, management development, management functions. Working persistance; definition of Determination, the problems and errors in decision making, styles and ways of putting the decision-making methods, methods of forecasting. Project management: definition, project leader, project goals, type of project. The composition of the economy and his circle; basics of organization management, organizational goals, organizational structure, technological aspects, economic and social organization, the impact of district organizational structure, job specifications of the participants in construction. Planning the working process: nature, reason and purpose of management planning process. Leadership in working processes, styles and modes of leadership, leadership, motivation, communication working determination, attitude to work. Control of working processes: financial control of construction project.

Learning outcomes and results: After completing of this course ,student will be able to understand and properly use in practice definitions of management,major principles of organization and operational management of one project. Other main goal of this subject in particular is that future engineers and experts easily to overpass difficulties of one project in regard to the management.

Volume and engagement of works for this course: 2+0, 3 ECTS

Activity	Hours	Day	Week	Total
Lecture	2	1	15	30
Theoretical exercises/ Laboratory				
Practical work				
Contact with lecturer / consultation				
Field practice	1	1	5	5
Tests and seminars				
Home work				
Independent study (library or at home)	1	3	5	15
Preparing for final exam	3	2	3	18
The time presented during the evaluation (tests; quiz and final exam)	3	1	1	3
Projects , presentation and ect	1	4	1	4
Total				75

Teaching and Learning Methods: Lecturing, preparation of case studies and presentation

Evaluation Methods and criteria:Theoretical valuation with tests, seminars and final exams. The practical part with semester elaborates.

Concretisation tools/TI: laptop, projector, board and markers

Ratio between theoretical and practical part:

Theoretical part	Practical part
80%	20%

Basic literature: Menadžent za inzenjere, Mariza Katavic, Sveučilište u Zagrebu, Gradevinski Fakuletet, Zagreb 2006. Literatura e propozuar: Menagement for the Construction Industry, Stephen Lavender, Longman and The Chartered Institute of Building, Eseex, England 1996.

RIVER REGULATION

Short Content: Aims of river regulation, problems and outcomes of it. Ways of river regulation. Catchment's and rivers's morphology. Rivers hydrologycal regime. Erosion and Sediments. Economic aspect of river regulation and safety measure against floods. The project of river bed regulation. Design and maintenance of water structures. River structures for the concentration and flow direction. River bed maintenance and protection from floods. River regulation for sailing.

Learning outcomes and results:

- Student will gain knowledge on river morphology and hydraulics and will be familiar with the possibilities of using the benefits of rivers and at the same time to minimise the damages that an unregulated river may cause.
- Student will learn the basic knowledge of how to regulate a river as well as the conditions of their application at specific sites as well as the constructions used for this aim.

- Student should know to calculate a real river section and to make river alignment changes if needed,
- Student should know to choose a type of regulating objects and their position in a river,
- Student should be able to design and calculate water structures.

The reqiured volume and the amount of work (3 hours per semester, 9 ECTS)

Activity	Hours	Days	Weeks	Total
Lectures	3	1	15	45
Theoretical/Laboratory excersises	2	1	15	30
Tutorial (practical work)	0	0	0	0
Contacts with the teacher/consultations	2	1	15	30
Field excercises	0	0	0	0
Midterms, seminars	2	1	2	4
Home work	1	1	10	10
Self preparation time (at library or at home)	3	1	10	30
Preparation for final exam	6	5	1	30
Time spent on assessment (test,quizzes,final exam)	4	1	2	8
Projects,presentations,etc.	1	1	3	3
Total				156

Teaching and Learning Methods: Lecturing, preparation of case studies and presentation
Evaluation Methods and criteria:Theoretical valuation with tests, seminars and final exams. The practical part with semester elaborates.
Concretisation tools/TI: laptop, projector, board and markers

Ratio between theoretical and practical part:

Theoretical part	Practical part

60%	40%

Basic literature for the course: Lecture notes will be given by the lecturer;
Jansen et al. Principles of river engineering - The non tidal alluvial river, Pitman, 1994.
Jansen, P. Ph. Et al. Priciples of river engineering- the non tidal alluvial river.Pitman Publishing Limited. London.1979
MUNICIPAL WATER SUPPLY II

Short Content: Water demand, Preparation, Forecasts for long-term needs, objecst for: water uptake, storage and distribution.

Learning outcomes and results: Advanced knowledge for planification, projection, and management of water supply systems.

Results during the learning: To know application methods in municipal water supply II; to issue the problem in different forms; to solve the problem in modeling form; to forecast new development for water needs, and to provide enough water with economical utilization.

Volume and needed time of work (hours per semester 3+3, 9 ECTS)

Activity	Orë	Ditë	Javë	Gjithsejtë
Lectures	3	1	15	45
Theoretical excercises/laboratory	3	1	15	45
Practical work	3	5	1	15
Contacts with lecturer/consultations	1	8	8	8
Field excercises				
Colocfiums, seminars	1	1	3	3
Home work	2	4	15	60
Self study time (in library or at home)	2	1	15	30
Final preparation for the exam	4	4	1	16
Time spent on evaluation (tests, quizzes, final exam)	1	1	3	3
Projects, presentations, etc.	1	1	1	1
Total				226

Teaching and Learning Methods: Lecturing, preparation of case studies and presentation

Evaluation Methods and criteria:Theoretical valuation with tests, seminars and final exams. The practical part with semester elaborates.

Concretisation tools/TI: laptop, projector, board and markers

Ratio between theoretical and practical part:

Theoretical part	Practical part
60%	40%

Basic Literature: Dr. Naim Hasani: Lectures and excercises: Water supply
Prof. Sylejman Daka - Furnizimi me ujë, Prishtine

DAMS

Short Content: Historic overview of the development of the dam engineering. Basis for the design of the dam structures. Planning, design and projection of earth dams and concrete dams. Water overflow across dam structures.Types of overflow structures and their characteristics.Structures for water capture.Structures for water inflow and outflow. Hydraulic design of overflow and evacuation structures.

Learning outcomes and results:

- Student will gain knowledge on dams and their appurtenances
- Student will learn the basic knowledge of how to design and project dams, overflow structures and evacuation ones and their appurtenances.

- Student should know to choose a type of dam and to design the same one,
- Student should know to make a water deviation during construction phase, to calculate the overflow structures as well as to calculate the evacuation ones.

The reqiured volume and the amount of work (2 hours per semester, 6 ECTS)

Activity	Hours	Day	Week	Total
Lectures	2	1	15	30
Theoretical/Laboratory excersises	2	1	15	30
Tutorial (practical work)	2	1	15	30
Contacts with the teacher/consultations	2	1	15	30
Field excercises	0	0	0	0
Midterms, seminars	2	1	2	4
Home work	1	1	10	10
Self preparation time (at library or at home)	3	1	10	30
Preparation for final exam	6	5	1	30
Time spent on assessment (test,quizzes,final exam)	4	1	2	8
Projects,presentations,etc.	1	1	3	3
Total				205

Teaching and Learning Methods: Lecturing, preparation of case studies and presentation

Evaluation Methods and criteria:Theoretical valuation with tests, seminars and final exams. The practical part with semester elaborates.

Concretisation tools/TI: laptop, projector, board and markers

Ratio between theoretical and practical part:

Theoretical part	Practical part
60%	40%

Basic literature for the course:
Lecture notes will be given by the lecturer;

CONSTRUCTION MANAGEMENT

Short Content: Investment plans, project evaluation and contrction planing methods, Construction law, Construction standards, time management, planing techniques , programming in construction engineering, crtical path method, PERT method, control of construction, Theory of Construction Management, construction project finances, budgeting, human resources in construction projects, Construction techniques, specifications in projects,drawings, BoQ,BoP, Literature: Kralj D. Construction Management, Halpin W. Daniel Construction Management , fourth edittion John Wiley & Sons, Oct 18, 2010.

Learning Outcomes and results: After completion of this course the Student will be able to understand principles of the Construction Management starting from early stages of one project such are feasibility and resource planning. Another important element of this course is knowledge which student/future Engineer will gain on project scheduling and follow up of such plans during the construction

Volume and engagement of works for this course: 2+2, 6 ECTS

Activity	Hours	Day	Week	Total
Lecture	2	1	15	30
Theoretical exercises/ Laboratory	2	1	15	30
Practical work				
Contact with lecturer / consultation	1	1	10	10
Field practice	2	1	10	20
Tests and seminars	2	1	15	30
Home work				
Independent study (library or at home)	1	3	5	15
Preparing for final exam	3	5	1	15
The time presented during the evaluation (tests; quiz and final exam)	3	1	1	3
Projects , presentation and ect	2	1	1	2
Total				155

Teaching and Learning Methods: Lecturing, preparation of case studies and presentation

Evaluation Methods and criteria:Theoretical valuation with tests, seminars and final exams. The practical part with semester elaborates.

Concretisation tools/TI: laptop, projector, board and markers

Ratio between theoretical and practical part:

Theoretical part	Practical part
50 %	50 %

Basic literature: - Kralj D. Construction Management, Halpin W. Daniel Construction Management , fourthe edittion John Wiley & Sons, Oct 18, 2010.

THE USE OF WATER POWER

Short content: Introduction to the use of water power, Theoretical elementary understanding of the subject – the use of water power, Hydrological analsyes of utilized water reserves and of energy potentiality, chronograms, curves of monthly and annual duration, weekly, seasonal, monthly, annual and overyears water flow regulation and analitycal and graphical methods of water flow calculation. Calculation and dimensioning of hydrotechnical objects.

Learning outcomes and results: Evaluation of water power reserves of a catchment. Calculation of utilized wter power and of hydro-power palnt. Approximate solution of hydro-power system.

Student should know to calculate water reserves for the energetic purposes of a river,
Student should know to calculate energetical potentiality of river
Student shoud know to solve the hydro-power scheme for utilization.

- Volume and needed time of work Vëllimi (hours per semester 3+3, 9 ECTS)

Activity	Orë	Ditë	Javë	Gjithësejt
Lectures	3	1	15	45
Theoretical excercises/laboratory	2	1	15	30
Practical work			1	
Contacts with lecturer/consultations	1	1	15	15
Field excercises	4	1	1	4
Colocfiums, seminars	0		0	0
Home work	4	5	5	20
Self study time (in library or at home)	2	15	15	30
Final preparation for the exam	4	5	5	20
Time spent on evaluation (tests, quizzes, final exam)	2	2	2	4
Projects, presentations, etc.	1	2	2	2
Total				161

Teaching and Learning Methods: Lecturing, preparation of case studies and presentation

Evaluation Methods and criteria:Theoretical valuation with tests, seminars and final exams. The practical part with semester elaborates.

Concretisation tools/TI: laptop, projector, board and markers

Ratio between theoretical and practical part:

Theoretical part	Practical part
70%	30%

Basic literature:
Lectures provided by the lecturer: Shfrytëzimi i energjisë së ujrave, Prof. Dr. Sylejman Daka, and
Prof. Dr. Branislav Djordjevic, Koriscenje vodnih snaga I, II

HYDROTECHNICAL MELIORATIONS

Short content: Introduction to fields drainage, Theoretical elementary understanding of fields drainage, Hydrological analyses and calculation of water balance, Calculation and dimensioning of hydrotechnical objects, Introduction to fields irrigation, Theoretical elementary understanding of fields irrigation, Hydrological analyses and calculation of irrigation rate (norm), Calculation and dimensioning of hydrotechnical objects.

Learning outcomes and results: Assesment of excessive water quantity to be drainaged and assesment of irrigation rate; Calculation of hydraulic parameters of drainage and irrigation; Aproximate solution of drainage and irrigation system, and diemnsioning of objects.

Student should know to calculate excessive water that should be drainaged and irrigation rate
Student should know to calculate hydraulic parameters which enable the drainage or irrigation
Student shoud know to solve the drainage or irrigation system and to determain dimensions of hydrotechnical systems related with these systems.

- Volume and needed time of work (hours per semester, ECTS)

Activity	Hours	Days	Weeks	Total
Lectures	2	1	4	8
Theoretical excercises/laboratory	2	1	4	8
Practical work	0	0	4	0
Contacts with lecturer/consultations	2	2	4	16
Field excercises	0	0	4	0
Colocfiums, seminars	0		0	0
Home work	0	0	4	0
Self study time (in library or at home)	1.5	1	4	6
Final preparation for the exam				20
Time spent on evaluation (tests, quizzes, final exam)	2			6
Projects, presentations, etc.	1			1
Total				67

Teaching and Learning Methods: Lecturing, preparation of case studies and presentation

Evaluation Methods and criteria:Theoretical valuation with tests, seminars and final exams. The practical part with semester elaborates.

Concretisation tools/TI: laptop, projector, board and markers

Ratio between theoretical and practical part:

Theoretical part	Practical part
70%	30%

Basic literature to be used in this subject:
Lectures provided by the lecturer: Meliorime Hidroteknike- Kullimi dhe Ujitja

CONCRETE CONSTRUCTIONS II

Short content: physical mechanical properties of main materials for the preparation of armoured concrete, theoretical basis of calculations, dimensions: sections working on central pressure, sections working under excentricity, (higher excentricity, lower excentricity); sections working under cut force (transversal force), sections working under torsion, short elements.

Learning outcomes and results:
To have knowledge on the concrete material as well as armoured concrete, treatments and calculations of the structures made of these materials.

Results of learning the subject (competences, knowledge and skills)

- to know to analyze the behaviour of the elements under the action of various forces,
- To know to calculate and design the elements of concrete under those forces,
- To know to design and calculate the concrete elements under the action of transverse and torsion forces,

Volume and time work needed (hours per semester 2+3, 6 ECTS)

Activity	Hours	Days	Weeks	Total
Lectures	3	1	15	45
Theoretical exercises/laboratory				30
Practical work				
Contacts with lecturer/consultations				
Field exercises				
Colloquiums, seminars	3	1	3	9
Home work	2	1	15	30
Self study time (in library or at home)	2	1	15	30
Final preparation for the exam	2	7	1	14
Time spent on evaluation (tests, quizzes, final exam)	4	2	2	8
Projects, presentations ,etc	2	1	1	2
Total				168

Teaching and Learning Methods: Lecturing, preparation of case studies and presentation

Evaluation Methods and criteria:Theoretical valuation with tests, seminars and final exams.
The practical part with semester elaborates.

Concretisation tools/TI: laptop, projector, board and markers

Ratio between theoretical and practical part:

Theoretical part	Practical part
60 %	40 %

Basic literature to use in this subject

- Bases of armoured concrete, Hamdi Sylejmani, Nejazi Hoxha and Kadri Morina
- EC 1, EC 2
- Regulations for concrete constructions
- Texts for Concrete Constructions in all world languages (indefinite number)

HYDROTECHNICAL AND GEOTECHNICAL OBJECTS

Short content: introduction, Mechanics of rocks, deformable properties of rocks, Mekanika e shëmbinjëve, the evaluation of deformabil properties, the proof of rocks resistance to sliding, laboratory tests of the resistance toward sliding, the calculation of the rock massiv, the program of geological investigations, injection of rocks.
Learning outcomes and results: The recognition of methods for evaluation of the deformable parameters of the rock formation, primary strains, secondary strains, the recognition of geotechnical investigations and the rocks injection.
Results of learning the subject (competences, knowledge and skills) – To know to evaluate the deformable parameters of the rock mass and that with laboratory tests as well as with " in situ " probes , to know to calculate the carring abbility, strains and the secondary forces of the rock massive, to know to choose the adequate injection for the rock mass for the case of foundation of the hydrotechnical objects.

Volume and needed time of work (hours per semester 2+1,3 ECTS)

Activity	Hours	Days	Weeks	Total
Lectures	2		15	30
Theoretical excercises/laboratory	1		15	15
Practical work				
Contacts with lecturer/consultations	1		10	10
Field excercises	1		10	10
Colocfiums, seminars	2		5	10
Home work	2		10	20
Self study time (in library or at home)	2		15	30
Final preparation for the exam				20
Time spent on evaluation (tests, quizzes, final exam)	1		15	15
Projects, presentations, etc.				
Total				150

Teaching and Learning Methods: Lecturing, preparation of case studies and presentation

Evaluation Methods and criteria:Theoretical valuation with tests, seminars and final exams. The practical part with semester elaborates.

Concretisation tools/TI: laptop, projector, board and markers

Ratio between theoretical and practical part:

Theoretical part	Practical part
60%	40%

Basic Literature to be used in this subject
- Orana, Xh: Geotechnical works – Script, 2000/2011,
Nonveiler, E.: Injiciranje tl – Teorija i Praksa, Skolska Knjiga Zagreb, 1989

INTEGRATED FLOOD PROTECTION

Short content: Introduction, streams and their damages. Resiliance measures for flood mitigation in inland waters.Construction principles and hydraulic design of retention measure in nature and urban environment.Principles of technical flood defence systems, dikes and walls, mobile abatement systems, inland drainage. Consideration of nature and cultural heritage in flood defence measures. Effectiveness of flood mitigation measures.

Learning outcomes and results:

- Student will gain knowledge on the methods and concepts of flood risk management at rivers.
- Student will be familiar with the basic knowledge of designing flood defence structures.

- Student should be familiarized with the techniques for small streams regulation and evaluation of flood risk areas,
- Student should be familiarized with methods of non structural flood mitigation measures.

The reqiured volume and the amount of work (2 hours per semester, 6 ECTS)

Activity	Hours	Days	Weeks	Total
Lectures	2	1	15	30
Theoretical/Laboratory excersises	0	0	0	0
Tutorial (practical work)	2	1	15	30
Contacts with the teacher/consultations	2	1	15	30
Field excercises	0	0	0	0
Midterms, seminars	2	1	2	4
Home work	1	1	10	10
Self preparation time (at library or at home)	2	1	10	20
Preparation for final exam	5	5	1	25
Time spent on assessment (test,quizzes,final exam)	4	1	2	8
Projects,presentations,etc.	1	1	3	3
Total				160

Teaching and Learning Methods: Lecturing, preparation of case studies and presentation

Evaluation Methods and criteria:Theoretical valuation with tests, seminars and final exams. The practical part with semester elaborates.

Concretisation tools/TI: laptop, projector, board and markers

Ratio between theoretical and practical part:

Theoretical part	Practical part
60%	40%

Basic literature for the course:
Lecture notes given by the lecturer.

TECHNICAL ENGLISH LANGUAGE I

Short content: Introduction to Technical English Language course . Inzhinieria construction as a profession . Reasons for choosing inzhinjerisë as a profession . The main principles of building materials . Creating modern structures . Environmental Inzhinjeria . Bridges and tunnels High buildings . Compilation of sentences using technical vocabulary . High dams .

Learning outcomes and results:

- Check the knowledge of English , acquired in previous education with emphasis on English grammar ,
- Improve and increase to a higher level of English, with an emphasis on the language used in the professional literature and business correspondence .

Learning outcomes of the subject

- The student must know the basic terminology in English professional technical in ndërtimatisë ,
- The student must know the language to the extent that utilize professional literature in the English language and the web resources for further study ,
- The student must know the basic terminology in the fields of construction , such as in construction , Hydrotechnics , architecture and road infrastructure .

- Volume and quantity of work required (hours per semester ECTS)

Activities	Hours	Days	Week	Total
Lectures	2	0	15	30
exercises / laboratory	0	0	0	0
Tutorial work	0	0	0	0
Contacts with the teacher/consultation	2	0	15	30
Field exercises	0	0	0	0
Colloquies, Seminars	2	0	2	4
Homeworkk	1	0	15	15
Own study time Student (at the library or at home)	1.5		15	23,5
Preparation for final exam				20
Time spend on assessment (tests, screak, final exam)	2			6
Projects, Presantations, etc..	1			1
Total				

Teaching and Learning Methods: Lecturing, preparation of case studies and presentation

Evaluation Methods and criteria:Theoretical valuation with tests, seminars and final exams. The practical part with semester elaborates.

Concretisation tools/TI: laptop, projector, board and markers

Ratio between theoretical and practical part:

Theoretical Part	Practice
100%	0%

Basic literature used in the course :

- Lectures offered by his teacher

Internet - Sites Big Building program, Brantacan, ASCEN

TECHNICAL GERMAN LANGUAGE I

Short content: Subject to the following condition "Technical German Language" is that students have basic knowledge of German . " Technical German Language " is practical subjects that enable students to become familiar with German terminology in the field of technology, where besides the grammatical structures and vocabulary typically used for communication in technical professions . The purpose of this course is to expand students' knowledge about the field of technical terminology and develop their powers of general language . Students will be introduced to the professional field of language technology will be introduced to the structure of scientific texts will be read and interpret professional texts , as well as techniques and strategies work . During the course will treat different topics that are typical for this professional field in German speaking countries .

Learning outcomes and results: To enable students to communicate in German in their professional field of technology,

- Students to enhance their professional competence ,
- To provide students with strategies that help them understand unfamiliar words , to derive important information from scientific texts and develop their own texts , eg formal reports or letters ,
- To develop receptive and productive skills of students in the field of engineering.

Volume and quantity of work required (hours per semester ECTS)

Activities	Hours	Days	Week	Total
Lectures	2	0	15	30
exercises / laboratory	0	0	0	0
Tutorial work	0	0	0	0
Contacts with the teacher/consultation	2	0	15	30
Field exercises	0	0	0	0
Colloquies, Seminars	2	0	2	4
Homeworkk	1	0	15	15
Own study time Student (at the library or at home)	1.5		15	23,5
Preparation for final exam				20
Time spend on assessment (tests, screak, final exam)	2			6
Projects, Presantations, etc..	1			1
Total				

Teaching and Learning Methods: Lecturing, preparation of case studies and presentation

Evaluation Methods and criteria:Theoretical valuation with tests, seminars and final exams. The practical part with semester elaborates.

Concretisation tools/TI: laptop, projector, board and markers

Ratio between theoretical and practical part:

Theoretical Part	Practice
100%	0%

Basic Literature: Rosemarie Buhlmann , Anneliese Fearns (2013): Technisches Deutsch für Ausbildung und Beruf: Lehr- und Arbeitsbuch. Europa Lehrmittel, Goethe Institut.Peter Giloy, Stephan Kumpf (2000): Deutsch für Techniker.

TUNNELS

Short content: History of tunnel's construction, Clasification of tunnels, Application of tunnels, Research works for the projection of tunnels, Clasification of rock mass, Technical elements for the projection of tunnels, Hydroisolation of tunnels, Static calculation for tunnels wrapping, Calculation methods of hilly's pression, Technical elements for the projections of tunnels, Tunnels construction.

Learning outcomes and results: History of tunnels construction, reason of tunnels application, tunnels clasification, tunnels application, research works for the projection of tunnels, clasification of rock mass, technical elements for the projection of tunnels – hydrotechnic tunnels, tunnels construction.

To know designing hydrotechnical tunnels, to know evaluating the favourably position and variant of tunnel, to know calculating tunnels in static manner, and, to know constructing hydrotechnical tunnels.

- Volume and needed time of work (hours per semester, ECTS)

Activity	Orë	Ditë	Javë	Gjithësejt
Lectures	2		15	30
Theoretical excercises/laboratory	1		15	15
Practical work				
Contacts with lecturer/consultations	1		10	10
Field excercises	1		10	10
Colocfiums, seminars	2		5	10
Home work	2		10	20
Self study time (in library or at home)	2		15	30
Final preparation for the exam				15
Time spent on evaluation (tests, quizzes, final exam)	1		10	10
Projects, presentations, etc.				
Total				150

Teaching and Learning Methods: Lecturing, preparation of case studies and presentation

Evaluation Methods and criteria:Theoretical valuation with tests, seminars and final exams. The practical part with semester elaborates.

Concretisation tools/TI: laptop, projector, board and markers

Ratio between theoretical and practical part:

Theoretical part	Practical Part
60%	40%

Basic literature: Banjad, I.: Tuneli, Zagreb, 1989
Popovic, B.: Tuneli, Beograd, 1987

GEODESY APPLICATION ON HYDROTECHINAL OBJECTS

Short content: Application processes of geodesy on hydrotechnical objects. Geodetic networks outside objects. Geodetic networks in an object as inspection points. Maps and other graphical presentations. Geodetic application of hydrotehnical object from the beginning up to the end of construction.

Learning outcomes and results: The objective of curricula is to provide: theoretical informations related to geodesy application on hydrotechnical objects. To provide theoretical and practical explanations for geodetic measurement and the accuracy evaluation of the object position in construction and utilization phases.

After the completion of the module, student with competence will be able to: describe the process of geodetic measurements for the preparation of designing the objects; make the interepretation of geodetic measurements and standards that must be accomplish; make the relation of geodetic measures with objects points, terrestrial with satellite points for the evaluation of the stability and eventualy dephigurations.

Volume and needed time of work (hours per semester, ECTS)

Activity	Orë	Ditë	Javë	Gjithësejt
Lectures	2	1	15	30
Theoretical excercises/laboratory	2	1	15	30
Practical work	4	1	2	8
Contacts with lecturer/consultations	1	1	10	10
Field excercises	2	1	3	6
Colocfiums, seminars	2	1	3	6
Home work	1	1	1	1
Self study time (in library or at home)	3	1	6	18
Final preparation for the exam	15	1	2	30
Time spent on evaluation (tests, quizzes, final exam)	2	1	2	4
Projects, presentations, etc.	1	1	3	3
Total	35		62	146

Teaching and Learning Methods: Lecturing, preparation of case studies and presentation

Evaluation Methods and criteria:Theoretical valuation with tests, seminars and final exams. The practical part with semester elaborates.

Concretisation tools/TI: laptop, projector, board and markers

Ratio between theoretical and practical part:

Theoretical part	Practical part
50 %	50 %

Basic literature:

Meha. M. Script for the lecture
www. Lica geosystem, Concrete Dam Survey 3D Laser Scan by Land Air Surveying Company

MUNICIPAL SEWERAGE II

Short content: Planification of sewerage, Black waters, Urban waters, Industrial waters, atmospheric waters, sewerage systems, sewerage objects, secondary network, main collector, materials of sewerage systems, polluted water management.

Learning outcomes and results: Advanced knowledge for planification, designe and management of sewerage systems.

Results during the learning: To know application methods in municipal sewerage, rural palces, urban, industrial and atmospheric waters; to issue the problem in a reasonable form; to solve the problem in modeling form; to forecast new development.

- Volume and needed time of work (hours per semester 2+2, 6 ECTS)

Aktiviteti	Orë	Ditë	Javë	Gjithsejtë
Ligjërata	2	1	15	30
Ushtrime teorike/laboratorike	2	1	15	30
Punë praktike	3	5	1	15
Kontaktet me mësimdhënësin/konsultimet	0.1	5	14	15
Ushtrime në teren				
Kollokfiume, seminare	1	1	3	3
Detyra të shtëpisë	1	1	14	15
Koha e studimit vetjak të studentit (në bibliotekë ose në shtëpi)	2	1	14	30
Përgatitja përfundimtare për provim	2	7	1	15
Koha e kaluar në vlerësim (teste,kuis,provim final)	1	1	3	3
Projektet, prezantimet,etj	1	1	1	1
Totali				157

Teaching and Learning Methods: Lecturing, preparation of case studies and presentation

Evaluation Methods and criteria:Theoretical valuation with tests, seminars and final exams. The practical part with semester elaborates.

Concretisation tools/TI: laptop, projector, board and markers

Ratio between theoretical and practical part:

Theoretical part	Practical part
60%	40%

Basic Literature: Dr. Naim Hasani: Lectures and excercises: Municipal sewerage
Prof Sylejman Daka - Kanalizimi i vendbanimeve, script
Koco Katundi - Kanalizimi i vendbanimeve, Tirane

SPECIAL FOUNDATIONS

Short content: Foundation over piles, Bearing capacity of pile under pressure, Bearing capacity of pile from the inputs of static penetrometer trial, Negative friction, Behaviour of a group of piles, Excavation with diaphragn, Diaphragm, Foundation on difficult soils.

Learning outcomes and results: Argument on theselection of deep foundation; Recognition of deep foundation methods. Determination of the foundtion's dimensions and elementary technics for the deep foundations designe as well as bracing technics of excavated constructed hole.

Results during the learning: To know characteristics of deep foundation, to know to determine the dimensions of foundations elements. To know to select the corresponding type of deep foundation, especially from the load of the object, geotechnical profile of terrain, engineering soil properties, position of groundwater level, permitted load of soils and of settlements. To inspect (control) the stability of foundation.

- Volume and needed time of work (hours per semester 2+1,6 ECTS)

Activity	Orë	Ditë	Javë	Gjithsejt
Lectures	2		15	30
Theoretical excercises/laboratory	2		15	30
Practical work	1		15	15
Contacts with lecturer/consultations	1		15	15
Field excercises				
Colocfiums, seminars				
Home work	1		10	30
Self study time (in library or at home)	2		10	20
Final preparation for the exam				20
Time spent on evaluation (tests, quizzes, final exam)	1		10	10
Projects, presentations, etc.				
Total				150

Teaching and Learning Methods: Lecturing, preparation of case studies and presentation

Evaluation Methods and criteria:Theoretical valuation with tests, seminars and final exams. The practical part with semester elaborates.

Concretisation tools/TI: laptop, projector, board and markers

Ratio between theoretical and practical part:

Theoretical part	Practical part
60%	40%

-**Basic literature** to be used in this subject:

Ahmedi, F., Fondamente 2 , Universiteti i Prishtinës, Prishtinë, 2005,
Nonweiller, E., Mehanika tla i temeljenje Gradjevina, Zagreb, 1985,
Braja, M.D., Shallow foundations, bearing capacity and settlement, Sacramento, 1999.

ENGINEERING ECONOMICS

Short content: Introduction to Engineering Economics, why Engineers need to learn economics, economic environment, determination of objectives, identification of strategic factors, determination of means, evaluation of engineering proposals, asistance in decision makings, Infrastructure expenditure decision Replace versus repair decisions, Selection of inspection method, Selection of a replacement for an equipment , labor savings , Efficiency in manufacturing or capital use, First (or Initial) Cost Operation and Maintenance Cost ,Fixed Cost ,Variable Cost ,Incremental or Marginal Cost , Sunk Cost ,Life-Cycle Cost, Demand curve , Supply curve, Elasticity of demand, Law of diminishing return. Cash flow diagrams, financial management of project.

Learning outcomes and results: After course completion the student will gain information about the financial part of the project, including economic and financial analysis and feasibility of a project in order tha Engineers during design, construction or maintenance of the road network engineers have thorough knowledge about the project's finance and cost.

Volume and engagement of works for this course: 2+2, 6 ECTS

Activity	Hours	Day	Week	Total
Lecture	2	1	15	30
Theoretical exercises/ Laboratory	2	1	15	30
Practical work				
Contact with lecturer / consultation	1	1	15	15
Field practice				
Tests and seminars	1	1	15	15
Home work	2	1	15	30
Independent study (library or at home)	2	1	5	10
Preparing for final exam	3	1	50	15
The time presented during the evaluation (tests; quiz and final exam)	3		1	3
Projects , presentation and ect	3	1	1	3
Total				151

Teaching and Learning Methods: Lecturing, preparation of case studies and presentation

Evaluation Methods and criteria:Theoretical valuation with tests, seminars and final exams. The practical part with semester elaborates.

Concretisation tools/TI: laptop, projector, board and markers

Ratio between theoretical and practical part:

Theoretical part	Practical part
50%	50%

Basic literature: Donald N, Engineering Economic Analysis ; Panneerselvam R., Engineering Economics; James L.RIGGS, Economic Engineering