UNIVERSITY OF PRISHTINA
“HASAN PRISHTINA”

FACULTY OF CIVIL ENGINEERING

DEPARTMENT CONSTRUCTION – MSc.

2018 – 2021

Study plan: MSc Construction

Year of study: I						
Semester: I						
No	**O/E**	**Subject/Course**	**L**	**E**	**ECTS**	**Name of Teacher**
1	O	Scientific Research Methodology	2	1	3	Dr.Sc. Ragip Hadri
2	O	Steel Structure	2	2	6	Mr.Sc.Faik Hasani, lecturer
3	O	Design of Reinforced Concrete Structures	2	2	6	Prof ass dr. Kadri Morina, Ass Mr.sc. Vlora Shatri
4	O	Project Management	2	0	3	Dr.Sc. Ilir Rodiqi
5	E	Laminated Wood Structures	2	2	6	Prof.ass.dr.Florim Grajcevci
6	E	Polymer and Bituminous Materials	1	1	3	Prof.dr.Naser Kabashi
7	E	Mathematical Methods in Engineering	2	1	3	Prof.dr.Abdullah Zejnullahu
8	E	Finite Elements Method	2	1	3	Prof.asoc.dr.Misin Misini
9	E	Theory of Slabs and Shells	3	2	6	Prof.dr.Musa Stavileci Prof asoc. dr. Misin Misini
10	E	Technical English Language I	2	0	3	PhD cand Festa Shabani, lek
11	E	Technical German Language I	2	0	3	Prof. ass. dr. Milote Sadiku
Total					30	
Semester: II						
No	**O/E**	**Subject/Course**	**L**	**E**	**ECTS**	**Name of Teacher**
1	O	Dynamic of Structure	3	2	6	Prof.dr.Musa Stavileci Prof asoc. dr. Misin Misini
2	O	Construction Management	2	2	6	Dr. sc. Ilir Rodici
3	O	Bridges	3	0	6	Dr. sc. Cene Krasniqi
4	E	Prefabricated Reinforced Concrete Structures	2	1	3	Prof ass dr. Kadri Morina, Ass Mr.sc. Bajram Shefkiu
5	E	Prestressed Concrete	2	2	6	Prof ass dr. Kadri Morina, Ass Mr.sc. Bajram Shefkiu
6	E	Light Steel Structures	2	1	3	Mr.sc.Faik Hasani,ligj.larte Mr. sc. Ali Muriqi
7	E	Theory of Plasticity	2	1	3	Prof.asoc.dr.Misin Misini

8	E	Nonlinear Analyses of Structures	2	1	3	Dr. sc. Ragip Hadri
9	E	Stability of Structures	2	1	3	Prof.asoc.dr.Fatos Pllana
10	E	Technical English Lanuage II	2	0	3	PhD cand Festa Shabani, lec
11	E	Technical German Lanuage II	2	0	3	Prof. ass. dr. Milote Sadiku
Total					30	

Clarification: The total number of ECTS-credits collected for one academic year is 60 ECTS. From the **7** obligatory courses the students will have the **36** ECTS, from the **8** selected courses the student shall elected **4** of them which provide **24** ECTS, or second scenario; from the **8** elected courses the student it cane selected **5** of them which provide **24** ECTS, third scenario; from the **8** elected courses the student it cane selected **6** of them which provide total **24** ECTS and fourth scenario; from the **8** elected courses the student it cane selected **8** of them which provide 24 ECTS

After the student select the subject, the same subject is treated as obligatory and the student cannot change the subject and the teacher.

Year of study: II						
Semester: III						
No	**O/E**	**Subject/Course**	**L**	**E**	**ECTS**	**Name of Teacher**
1	E	Structural Reinforced Concrete Design	2	3	6	Prof ass dr. Kadri Morina, Ass Mr.sc. Vlora Shatri
2	E	Examinations of Structures	2	2	6	Prof.asoc.dr.Naser Kabashi
3	E	Design of Steel Bridges	1	3	6	Mr. sc. Faik Hasani ligj. Mr.Sc. Ali Muriqi
4	E	Design of Concrete Bridges	2	3	6	Dr.sc.Cene Krasniqi
5	E	Fundamentals of Earthquake Engineering	2	2	6	Prof.asoc.dr.Misin Misini
6	E	Tall Building	2	2	6	Prof.ass.dr.Florim Grajçevci Mr. Sc. Ali Muriqi
7	E	Repairing and Strengthening the Existing Structures	2	2	6	Prof.dr.Naser Kabashi
8	E	Rheological Characteristics of Concrete	2	0	3	Prof.ass.dr.Hajdar Sadiku
9	E	Masonry Structures	2	2	6	Prof.ass.dr.Florim Grajçevci
11	E	Special Foundations	2	1	3	Dr. sc. Qani kadiri
10	E	Engineering Economics	2	1	3	Dr. sc. ilir Rodici Dr. sc. Esat Gashi
Total					30	

Semester: IV						
No	**O/E**	**Subject/Course**	**L**	**E**	**ECTS**	**Name of Teacher**
1	O	Diploma Works			30	
Total					30	

Clarification: The total number of ECTS-credits collected for one academic year is 60 ECTS. In the third semester all courses are elected. The student mast select the courses to collect all **30** ECTS. The fourth semester is working diploma which provide the 30 ECTS.
After the student select the subject, the same subject is treated as obligatory and the student cannot change the subject and the teacher.

Course/module short description

SCIENTIFIC RESEARCH METHODOLOGY

Short Content: Gathering Information their study and the systematization. Meaning, type of hypotheses and their verification. Meaning, objectives and the characteristic members of the seminar works. Collection of data, Data Analysis. Research methodology. Modeling methodology. Statistic methodology. Mathematics methodology. Experimental methodology. Connection method as a methodology. Study case methodology, visual methods, Survey and interviews methods. Results presentation methods. Delfi method. Bibliography.

Course objectives and learning outcomes: After the finishing of course the student will be able to write the different reports, will be competitive to compiled in the narrative aspects the master thesis and also the scientific research.

Forms/Methods of teaching: Computer presentation of the with the projector, Clarification on desc, during the time learning of subject the colaboration of the students and the teachrs thru the exersises, numerical examples starting from the elemnetary level up to the more complicated casses. During the semester time period on 15 weeks it will be orginse the colociumes as a learining test which they are have influenced in the final scoore.

Evaluation methods/Passing criteria: The lectures, numerical exercises, collaboration of the students during the time of semester learning and the sites visits will be evaluated each students. The semester colloquiums - tests will be estimated as 40%, work semester 20%, presence 5%, work presentation 5%. and remain of 30% will be from final exams. The final score of students will be in percentage, from the final students achievements of percentage will be passing of course.

Concretization tools/IT: Board, Computer, Projector.

Ratio between theoretical and practical part of study:

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.

CONCRETE STRUCTURES

Short Content Subject of Concrete Structures aims to improve the capacities and knowledge of the students for circular slabs, design of a section based on the theory of plasticity, of higher depth beams, actions on structures including wind, snow, and earthquake. Provide knowledge on frame structures, serviceability Limit State (SLS) of stresses, cracks, and deflections.

Course objectives and learning outcomes: Further extension of knowledge in the field of Concrete Structures as gained from previous courses.

- Introduction to students of elements of concrete structures and with design calculation of circular slabs, deep beams, bearing walls, corbels, pined joint, frames, slender columns, design calculation of concrete cross sections according to the theory of plasticity, combined bending, SLS (stresses, cracks and deflections) as well as design of unreinforced concrete elements.
- Enabling students to design calculate and detail the reinforcement.
- Enable students to propose and adopt appropriate dimensions of elements depending on the use of the building and based on the given conditions in respective terms of reference.
- Students will be familiarized with general concepts of design of above-mentioned structural elements considering respective construction phases, including reinforcement detailing.

Forms/Methods of teaching: Lectures, exercises, individual projects, and construction sites visits. Compiled Syllabuses.

Evaluation methods/Passing criteria: First test: 10%, Second test 10%, Semestral project 15%, Attendance 5%, Written exam 30%, Oral exam 30%, Total of 100%.

Concretization tools/IT: White boards, computers, working tables, various projects.

Ratio between theoretical and practical part of study:

Theoretical part	Practical part – home works
50 %	50 %

Basic literature :

1. K. Morina, H. Sylejmani – Concrete Structures,
2. Vahid Hasanović: Design of Reinforced Concrete Structures,
3. Jure Radići and associates: Concrete Structures – Handbook, Croatian University Edition, University in Zagreb, Faculty of Civil Engineering, Andris, Zagreb.

PRESTRESSED CONCRETE

Short Content Ways of prestressing types of prestressing of the RC members, losses of prestressing force at prestressing with adhesion and in cable prestressing. Losses due to friction, losses due to slip in anchorage devise, losses due to elastic shortening, losses due to relaxation of steel, time dependent losses, and those due to shrinkage and creep. Choosing the cross section of prestressed concrete element, Design of prestressing members based on EC2.

Course objectives and learning outcomes: Understanding the advantages and disadvantages of the Pretressed Concrete, reduced tension stresses in RC structures. Students to be introduced to the ways and means of prestressing and their application in construction practice. Enabling students to design in details a prefabricated member of different cross-sectional properties of various cross section such as T, TT, I, channel type, and other different weakened sections.

Forms/Methods of teaching: Presentations and lecturing by means of computerized methods and through video beams, additional hand sketching in a white board during the course, interaction between teacher and students promoted during the courses respectively during the practical classes, starting from the most basic examples and towards more complicated cases structural members of structural elements made of prestressed concrete. Before start of each lecture classes review of previous lessons are done together with students. In between the time period of 15 weeks, two numerical examples are done to test the learning and all of these influence the final grade assigned to students.

Evaluation methods/Passing criteria: In form of lectures, numerical examples, discussions during the courses and practical classes organized in groups a well as during various site visits during the construction activities. Two interim payments are evaluated (15+15) = 30%. Semestral work takes 20% of the total scoring. Regular attendance of lectures and of practical classes takes 5%, presentation of the work, 5%, theoretical part is scored with 40%. Passage in examinations is calculated in percentage, dependent on learning achievements during the course flow. Over 50% of accumulated scores result positive.

Concretization tools/IT: White boards, computers, working tables, various projects.

Ratio between theoretical and practical part of study:

Theoretical part	Practical part – home works
50 %	50 %

Basic literature :

1. H. Sylejmani, K. Morina, N. Hoxha – Authorized Lectures in Prestressed Concrete;
2. K. Morina & Agron Gjinolli, Worked Examples in Prestressed Concrete,
3. Ivan Tomicic, Prestressd Concrete

DESIGN OF REINFORCED CONCRETE STRUCTURES

Short Content Improving abilities of the students related to essence of design of structures resistant to earthquake loads, design of classical systems of structures and of those with seismic base isolation. Specifics of construction of frame structures, separation joints, expansion joints, deflection joints, RC prefabricated structures. Waffle slabs, flat slabs. Methods of strengthening of RC structures. Spatial structures, hydro-technical structures, reservoirs, water-pools, water retaining structures, aqueducts, trenches, water collectors, etc.

Course objectives and learning outcomes: Further extension of knowledge in the field of Design of Concrete Structures as gained from previous courses. Choosing and adoption of the most appropriate and an optimized solution of the structural system, analysis of an entire RC structure, to the development of reinforcement plans and detailing. Introduce to students types of concrete structures such as frame like structure, structures with walls or RC diaphragms, mix structures or dual systems, etc. In depth introduction of space structures, various floor systems, prefabricated structures, special buildings and structures. Adapt proposals and appropriate solutions depending on the use of the building and based on the respective terms of reference. Familiarization of general concepts of design for RC structures, working out and up to the shop drawings, a structural frame, a flat slab, a waffle slab, etc. Procedures for implementation of frame-like reinforced concrete structures, skeletal systems, and dual systems.

Forms/Methods of teaching: Lectures, exercises, individual projects, and construction sites visits. Presentations and lectures by means of computerized methods and through video beams, additional hand sketching explanations during the course, interaction between teacher and students during the courses respectively during the practical classes, provision of numerical examples starting with elementary and up to more complicated cases of the concrete structural elements. Comparison and evaluation of various projects, improving performance on design and calculations. Review of previous lessons before each start of a lecture. Three interim tests are planned during the 15-week learning period of the course. Scores obtained are taken into consideration in final evaluation.

Evaluation methods/Passing criteria: In form of lectures, numerical examples, discussions during the courses and practical classes organized in groups as well as during various site visits during the construction activities. Three interim tests are evaluated (10+10+10) = 30%. Semestral work takes 20% of the total scoring. Regular attendance of lectures and of practical classes takes 5%, presentation of the work, 5%, theoretical part is scored with 40%. Passage in examinations is calculated in percentage, dependent on learning achievements during the course flow. Over 50% of accumulated scores result positive. First test: 10%, Second test 10%, Semestral project 15%, Attendance 5%, written exam 30%, Oral exam 30%, Total of 100%.

Concretization tools/IT: White boards, computers, working tables, various projects.

Ratio between theoretical and practical part of study:

Theoretical part	Practical part – home works
50 %	50 %

Basic literature :H. Sylejmani, K. Morina, Concrete Structures ; Vahid Hasanovic: Design of RC Structures, Jure Radic and associates, Concrete Structures, Hanbook, Croatian Universities, University in Zagreb, EC 1, EC 2, EC 8.

PROJECT MANAGMENT

Short Content Basic principles of management: what is the management, who are managers. Development of the management, management development, management functions. Working persistence; 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.

Course objectives and learning outcomes: 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.

Forms/Methods of teaching: Computer presentation of the lectures with the projector, Clarification on desk, during the time learning of subject the collaboration of the students and the teachers thru the exercises, numerical examples starting from the elementary level up to the more complicated cases. During the semester time period on 15 weeks it will be organize the colloquiums as a learning test which they are have influenced in the final score.

Evaluation methods/Passing criteria: The lectures, numerical exercises, collaboration of the students during the time of semester learning and the sites visits will be evaluated each students. The semester colloquiums - tests will be estimated as 40%, work semester 20%, presence 5%, work presentation 5%. and remain of 30% will be from final exams. The final score of students will be in percentage, from the final students achievements of percentage will be passing of course.

Concretization tools/IT: Board, Computer, Projector.

Ratio between theoretical and practical part of study:

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.

LAMINATED WOOD STRUCTURES

Short Content: Basic rules and principles for the glued laminated structural elements. Computation of glue laminated members and entire structure. Glue laminated structure forming, their connections, supports, mounting connections etc. Structural Design of frame systems form the timber laminated materials.

Course objectives and learning outcomes: An theoretical course which knowledge pupils to learn for the timber laminated material and their technical performance, usability in the Structure of Buildings.

Forms/Methods of teaching: Computer lecture presentation of with the projector, Clarification on desk, during the time learning of subject the collaboration of the students and the teachers thru the exercises, numerical examples starting from the elementary level up to the more complicated cases. Compilation and assessment of different work design presentation, increase the design and computation performances. During the semester time period on 15 weeks it will be organize the colloquiums as a learning test which they are have influenced in the final score.

Evaluation methods/Passing criteria: The lectures, numerical exercises, collaboration of the students during the time of semester learning and the sites visits will be evaluated each students. The semester colloquiums - tests will be estimated as 30%, work semester 20%, presence 5%, work presentation 5%. and remain of 40% will be from final exams. The final score of students will be in percentage, from the final students achievements of percentage will be passing of course.

Concretization tools/IT: Board, Computer, Projector.

Ratio between theoretical and practical part of study:

Theoretical part	Practical part
60 %	40 %

Basic literature :

1. F. Grajcevci, Konstruksionet prej druri ,(ligjërata të autorizuara) FNA, Prishtinë

2. Werner, Zimmer., “Holzbau 2”, Dach- und Hallentragwerke nach DIN und Eurocode, Berlin Aufl.-1999; Eurocode 1; Eurocode 5

POLYMER AND BITUMINOUS MATERIALS

Short Content: Basic knowledge –Polymer Materials. Specific characteristics. Types of the poymer Materials and used in elemens of structures. Concrete Polymers; properties compare with common plain concrete.Using the Polymer materials and properties focused in tensile strength. Polymer Fibres and microreinforcement of concrete elenments. Bituminous Materials, properties and examinations according the EN. Asphalt Concrete , properties and using for road infrastructure. Types of Asphalt Concrete ans environmental impact.

Course objectives and learning outcomes: To inform the students about the Polymer Materials and Bituminous Materials. Basic knowledge , properties and possibilities to used in improvement of the properties of commen materials such are; Concrete; Asphalt Concrete, Steel, Wood , ect. Examinations of the propertoies of Polymer and bituminous materials in laboratory.

Forms/Methods of teaching: Presenatation of lectures using the Power Point presentation and necessary informations in board.Interactivity lecturer-student during the presentation time and also interactivity in laboratory and numerical problems . Group work in each group of 5 students and individual topic which will prepared in design and followed with laboratory examinations. Presentation the students group work and evaluations , towards the improvement of design and calculations.During the semester will be organized the two tests to analyse the level of understaning and will produst the effect in final grade.

Evaluation methods/Passing criteria: Evualotions the knowledge of the students in exam will be evaluated using the test methods, were the test will content the all the topics ; lectures and exercise provide during the semester, including also the tests methods.The test evaluations will be according the following rules: (15+15)=30%; Semianr group work=20 %; Presence in lecture and exercise 5 %; presentation of seminar work 5%.and theoretical part will evaluate with 40 %. Pasing the exam will be calculate with more than 50%, with positive results and grades will be based on the results.

Concretization tools/IT: White board; PC computer; Work table; Video projector, ect

Ratio between theoretical and practical part of study:

Theoritical Part	Practical Part
60 %	40 %

Basic literature :

1. N.Kabashi, Materialet polimere dhe bituminoze FNA, Prishtine
2/Z.Simunic: Polimeri u graditeljstvo, Zagreb
4. Sergiy Minko: Responsive polymer materials

MATHEMATICAL METHODS IN ENGINEERING

Short Content In the framework of this subject will be addressed:Differential equations: differential equations of the first order, differential equations of higher orders with special emphasis on linear differential equations with constant coefficients and their numerical solution.Infinite series: infinite series of numbers. Endless series of functional, polynomial series and Fourier series and the application of the series in solving differential equations.Multiple integrals: double integrals, triple integrals, and application of double and triple integrals in the field of building construction.Bend lined and surface integrals: bend integrals, surface integrals and application of these types of integrals in the field of building construction.

Course objectives and learning outcomes: to enable students to solve tasks from the contents of the file; for students to expand their professional competence by using materials elaborated; to provide students with knowledge of the case the extent that they should be able to apply the knowledge in the construction industry; to develop skills extent that students can make mathematical models to practical problems and thereafter to solve. After completing this course students can: draw up mathematical models of practical problems; to solve mathematical models; to interpret in practice solutions results from mathematical models

Forms/Methods of teaching: Presentation of lecture with computer and projector, explanations in table, collaboration between the professor and student during lecture respectively during numerical exercise. Before beegining of each lecture will be realized repeat of prior topics with students. In time from 15 weeks will be organized three colloquies which have impact in final evaluation.

Evaluation methods/Passing criteria: In lecture forme, numerical exercise, discussion during lecture and exercises in group also visits of various objects in the construction phase or after completion. Three of colloquies will be evaluated (10+10+10)=30%, semestral work will be evaluated with 20%, presence at lectures and exercises 5%, presentation of the work 5%, theoretical part 40%. Student passing rate will be estimated in percentage, depending on learning during the development of the subject. Value greater than 50% is a positive result.

Concretization tools/IT: Table, computers, working table and different projects.

Ratio between theoretical and practical part of study:

Theoretical part	Practical part
50%	50%

Basic literature :

A. Zejnullahu, F. Berisha: Matematika III, 1997, UP-FNA.

Richard L. Burden, J.Douglas Faires: Numerical Analysis, 1997, Brooks/Cole Publishing Company, USA.

Margarita Qirko, Syti Hysko: Analiza Numerike, 2004, Universiteti Politeknik i Tiranes

FINITE ELEMENT METHOD

Short Content Besides necessary theoretical treatment, appear mainly physical-geometric basics of engineering concept and techniques of finite element. The material is limited in the context of static and dynamic analysis of structures, which in many cases are illustrated with concrete examples. First part deals with theoretical Bases with applications from Structural Static, while the second part with Structural Dynamics.

Course objectives and learning outcomes: Base knowledge for MEF and application in static and dynamic analysis of engineering structures.

Forms/Methods of teaching: Presentation of lecture with computer and projector, explanations in table, collaboration between the professor and student during lecture respectively during numerical exercise beginning with elementary examples until more complicated examples of structures. Comparison and evaluation of different works, enhance of designing-calculation performance.Before beegining of each lecture will be realized repeat of prior topics with students. In time from 15 weeks will be organized three colloquies which have impact in final evaluation.

Evaluation methods/Passing criteria: In lecture forme, numerical exercise, discussion during lecture and exercises in group also visits of various objects in the construction phase or after completion. Three of colloquies will be evaluated (10+10+10)=30%, semestral work will be evaluated with 20%, presence at lectures and exercises 5%, presentation of the work 5%, theoretical part 40%. Student passing rate will be estimated in percentage, depending on learnning during the development of the subject. Value greater than 50% is a positive result.

Concretization tools/IT: Table, computers, working table and different projects.

Ratio between theoretical and practical part of study:

Theoretical part	Practical part
100%	0%

Base literature used in subjects:

Musa Stavileci, Niko Pojani: Metoda e elementëve të fundëm në Mekanikën e Strukturave, UP, FNA, Prishtinë, 2006; Wilson E.L.: Three-Dimensional Static and Dynamic Analysis of Structures, Computers and Structures, inc Third Edition, 2002;Zienkiewiecz O.: The Finite Element Method, McGraw-Hill, New York, 1994

SLABS AND SHELLS

Short Content Subject content two main part: bending theory of thin plates and shell theory.In first part will be included rectangular slabs and circular slabs. In second part will be analyzed rotary shells and rotating cylindrical shells and those with general shape.

Course objectives and learning outcomes: Notification with basic knowledge from field of slabs and shells

Forms/Methods of teaching: Presentation of lecture with computer and projector, explanations in table, collaboration between the professor and student during lecture respectively during numerical exercise beginning with elementary examples until more complicated examples of structures. Comparison and evaluation of different works, enhance of designing-calculation performance. Before beegining of each lecture will be realized repeat of prior topics with students. In time from 15 weeks will be organized three colloquies which have impact in final evaluation.

Evaluation methods/Passing criteria: In lecture forme, numerical exercise, discussion during lecture and exercises in group also visits of various objects in the construction phase or after completion. Three of colloquies will be evaluated (10+10+10)=30%, semestral work will be evaluated with 20%, presence at lectures and exercises 5%, presentation of the work 5%, theoretical part 40%. Student passing rate will be estimated in percentage, depending on learning during the development of the subject. Value greater than 50% is a positive result.

Concretization tools/IT: Table, computers, working table and different projects.

Ratio between theoretical and practical part of study:

Theoretical part	Practical part
100%	0%

Base literature used in subjects:

Musa Stavileci: Teoria e sistemeve sipërfaqësore, UP, FNA, Prishtinë, 1997

Stavileci M.: Teoria e sistemeve sipërfaqesore – detyra të zgjidhura, UP, FNA Prishtinë, 1997,

Girkman K.: Flachentragwerke, Wien, 1959

Timoshenko S.: Theory of plates and Shells, New York,1965

TECHNICAL GERMAN I:

Short Content: The course "Technical German I" is designed for students who have basic knowledge of the German language. "Technical German I" is a practical course that enables students to familiarize with German terminology in the field of technique, where besides vocabulary are taught also grammatical structures typically for communication in technical professions. The purpose of this course is to broaden the knowledge of students about the terminology in the field of technique and to develop their general competences of language. Students will become familiar with the professional field of language technique, will become familiar with the structure of scientific texts, will be able to read and interpret professional texts, and will become familiar with work techniques and strategies. In this course will be discussed different topics that are typical for this professional field.

Course objectives and learning outcomes: "Technical German I" are: To enable students to communicate in German in their professional field of technique, To expand their professional competence, To provide students with strategies which help them to understand unknown words, to extract key information from scientific texts and to develop their own texts, e.g. reports or formal letters, To develop receptive and productive skills of the student in the field of technique.

Forms/Methods of teaching: Computer presentation of the with the projector, Clarification on desk, during the time learning of subject the collaboration of the students and the teachers thru the exercises, numerical examples starting from the elementary level up to the more complicated cases. During the semester time period on 15 weeks it will be organize the colloquiums as a learning test which they are have influenced in the final score.

Evaluation methods/Passing criteria: The lectures, numerical exercises, collaboration of the students during the time of semester learning and the sites visits will be evaluated each students. The semester colloquiums - tests will be estimated as 40%, work semester 20%, presence 5%, work presentation 5%. and remain of 30% will be from final exams. The final score of students will be in percentage, from the final students achievements of percentage will be passing of course.

Concretization tools/IT: Board, Computer, Projector.

Ratio between theoretical and practical part of study:

Theoretical part	Practical part
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

THE DYNAMICS OF STRUCTURES

Short Content: In theoretical and applicative aspect are treated probems of calculations of engineering structures (beam, truss,frame) that are subject to different dynamic loads. Problems will be appeared in the three parts “classics” Dynamics of structures: systems with one degree of freedom ,systems with many degree of freedom , systems with distributed parameters.

Course objectives and learning outcomes: Better forming as civil engineers with base knowledge of analysis and designing of structural engineering which are subject to different dynamic loads. The student to be capable to own better analysis of high structures as well as their constituent elements.

Forms/Methods of teaching: Presentation of lecture in computer and projector, explanations in table, collaboration between the professor and student during lecture respectively during numerical exercise beginning with elementary examples until more complicated examples of structures. Comparison and evaluation of different works, enhance of designing-calculation performance.Before beegining of each lecture will be realized repeat of prior topics with students. In time from 15 weeks will be organized three colloquies which have impact in final evaluation.

Evaluation methods/Passing criteria: In lecture forme, numerical exercise, discussion during lecture and exercises in group also visits of various objects in the construction phase or after completion. Three of colloquies evaluated (10+10+10)=30%, semestral work will be evaluated with 20%, presence at lectures and exercises 5%, presentation of the work 5%, theoretical part 40%. Student passing rate will be estimated in percentage, depending on learning during the development of the subject. Value greater than 50% is a positive result.

Concretization tools/IT: Table, computers, working table and different projects.

Ratio between theoretical and practical part of study:

Theoretical part	Practical part
100%	0%

Base literature used in subjects:

Niko Pojani: Teoria e strukturave DINAMIKA, shblu, Tiranë, 2002; Stavileci M.: Dinamika e konstruksioneve, leksione të shkruara, UP, FNA, Prishtinë 2000, Clough R., Penzien J.: Dynamics of Structures, McGraw-Hill, 2ndEd 1993; Chopra A.: Dynamacis of Structures-Theory and Aplications to Earthquake Engineering, Prentice-Hall, New York, 1996

CONSTRUCTION MANAGEMENT

Short Content: Investment plans, project evaluation and constriction planning methods, Construction law, Construction standards, time management, planning techniques , programming in construction engineering, critical 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,

Course objectives and learning outcomes: 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

Forms/Methods of teaching: Lecturing will be taught as a group lecturing, field studies, case studies, workshops and student presentations

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

Concretization tools/IT: laptop, projector, board and markers

Ratio between theoretical and practical part of study:

Theoretical part	Practical part
50 %	50 %

Basic literature:

Gashi E, Construction Management (working book) 2015,
Proposed Literature:
Rodiqi I Menaxhimi i Ndertimit 2004,
Halpin W. Daniel Construction Management, fifth edition John Wiley & Sons, Oct 18, 2014.

BRIDGES

Short Content: General knowledge for bridges (concrete, metallic and composite bridges), study of ground obstacles, rationality(perspective), analysis of variantes (options). General disposition,substructure and superstructure of the bridge.Bridge forms and constructive systems, loading, calculation method, constructive details, method of forming, support,s method of assemblage and mounting of the bridge.

Course objectives and learning outcomes: Object of study: general knowledge of bridges (reinforced concrete, metallic and composite bridges) from the past to the modern time. To create knowledge of construction of these buildings here and in relation with other countries. Knowledge of bridges systems and forms; study of these opportunities for candidates in relation to circumstances, in relation to technical and professional opportunities.After completion of this course, students have capacity: to make interpretation of the lecture and of the modern trend of this subject. to know and to recognize specified building without taking in consideration when and where they were built. to analyse possibilities and suggest adequate variante (option) for a design study. to be able to compile an adequate conceptual project for a bridge. based on the knowledge of this course, to analyze any other system(with different materials ,system or form) from these ones.

Forms/Methods of teaching: Lectures, exercises, individual projects, and construction sites visits.

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

Concretization tools/IT: Lecture, consulting with the lecturer, consultations and discussions in group, site visits and eventually seminar work or group work

Ratio between theoretical and practical part of study:

Teorical part	Practical part
95%	5%

- Basic bibliography used for the course -

1.Sh.Perjuci “Urat e betonit” pjesa I-rë 2004 (dispencë)
2..A.Vokshi, A. Muriqi-- Konstruksionet e urave metalike (dispense)
3..K.Tonkovic “Masivni mostovi “ Zagreb 1977 & “Mostovi “ Zagreb 1981
4..Wai- Fah Chen,Lian Duan-- Bridge Engineering Handbook

PREFABRICATED REINFORCED CONCRETE STRUCTURES

Short Content: Subject of Prefabricated Systems of Reinforced Concrete aims to improve the capacities and knowledge of the students for prefabricated elements. An introduction to technologies applied in the initial production phase, transport and installation of prefabricated elements, Introduction to principles of design, advantages and disadvantages of prefabricated systems. Prefabricated systems for industrial halls, and for residential buildings. Connections of elements in prefabricated structures. Isolated footings for prefabricated systems.

Course objectives and learning outcomes: Provide of a wider range knowledge in the field of Reinforced Concrete Structures made of Prefabricated Elements. Understanding the pros and cons of prefabricated structures; reduction of time schedule in construction of prefabricated structures. Students are informed on types and ways of preparing the prefabricated elements including transport. Students are informed on contemporary methodologies available in construction of prefabricated structures. Enabling students to design in details a building structure of prefabricated elements. Train students to understand the requirements and propose an appropriate system during the design phase.

Forms/Methods of teaching: Lectures, exercises, individual projects, and construction sites visits.

Evaluation methods/Passing criteria: First test: 10%, Second test 10%, Semestral project 15%, Attendance 5%, written exam 30%, Oral exam 30%, Total of 100%.

Concretization tools/IT: White boards, computers, working tables, various projects.

Ratio between theoretical and practical part of study:

Theoretical part	Practical part – home works
50 %	50 %

Basic literature used:

1. K. Morina, H. Sylejmani – Prefabricated Reinforced Concrete Systems,
2. Jure Radići and associates: Concrete Structures – Handbook, Croatian University Edition, University in Zagreb, Faculty of Civil Engineering, Andris, Zagreb.
3. Various catalogs of pre-stressing systems,
4. Catalogs of formworks, various cranes, etc.

PRESTRESSED CONCRETE

Short Content: Subject of Prefabricated Systems of Reinforced Concrete aims to improve the knowledge capacities of the students and inform on ways of prestressing, types of prestressing of the RC members, materials used. Pre-stress force losses in pre-tensioning and in posttensioning. Losses due to friction, anchorage slip during the process of anchorage, losses due to elastic shortening, relaxation, time dependent losses such as those due to shrinkage and creep. Choosing and adoption of the cross section of the pre-stressed concrete member as per criteria of ULS of the compression zone, and the criteria of crack width limitation. Design of prestressed members to EC2; design of members subject to shear, stress limitation in exploitation phase, required steps when checking stresses. Ensuring the zone of transfer of prestress force at both the pretensioning and posttensioning. The limiting zone of the position of resultant force in prestressing tendons. Deformations (deflections) of prestreesed members; approximate calculation of deflections in prestressed members. Restoration forces and the equivalent loads. Prestressing of statically indeterminate beams (continuous beams, one bay frames).

Course objectives and learning outcomes: Understanding the adavantages of prestressed concre, reduction of tensions in RC. Students are introduced on the ways and methodologies of prestressing, their application in constuction practce, an enabled to understand the impact on stresses and cracks of certain RC members. Enabeling students to design in details a prestressing member, both the pretensioned and posttensioned and of different cross sections such as I, TT, U shape, or any other shape. Students are trained to understand and calculate various effects contributing to losses of prestress force. Trained to check the stresses in members in the service time as well as in various construction stages during the construction period, to calculate ULS of deformations (deflections) and shear. Students are introduced with the general concepts of design of prestressed elements by calculating in details a roof structure and a main girder of the roof made of prestressed concrete.

Forms/Methods of teaching: Lectures, exercises, individual projects, and construction sites visits.

Evaluation methods/Passing criteria: First test: 10%, Second test 10%, Semestral project 15%, Attendance 5%, written exam 30%, Oral exam 30%, Total of 100%.

Concretization tools/IT: White boards, computers, working tables, various projects.

Ratio between theoretical and practical part of study:

Theoretical part	Practical part – home works
50 %	50 %

Basic literature used:

5. H. Sylejmani, K. Morina – Authorized Lectures in Prestressed Concrete;
6. K. Morina & Agron Gjinolli, Worked Examples in Prestressed Concrete,
7. Ivan Tomicic, Prestressd Concrete

Leonhart, Prestressed Concrete in Construction Practice

THEORY OF PLASTICITY

Short Content: Introduction to Plasticity, Stress Analysis for Plasticity, Elastic Perfectly Plastic Materials, Viscoelastic Materials, Rate-Independent Plasticity, Yield Criteria, Flow Rules and Hardening Rule, Plastic limit state analysis, Limit Analysis of Trusses, Beams and Frames., Shape factor, Plastic hinge, Fully plastic moment, Moment curvature relations. Effect of axial force and shear force on fully plastic moment of a section. Application of finite element analysis.

Course objectives and learning outcomes: The overall objective of the course is to develop an understanding of the post-yield behavior of idealized plastic solids and the ability to analyze simple engineering structures such as beams and frames. Upon completion of the course, the participating students are expected to: Describe the elastic and plastic behavior from typical stress-strain curves for materials; Recognize typical plastic yield criteria established in constitutive modeling; Solve analytically the simple boundary value problems with elasto-plastic properties.

Forms/Methods of teaching: Presentation of lectures with computer and projector, explanations in the table, the cooperation of teachers with teaching student during the time of numerical examples or exercises examples ranging from basic to more complex examples of structural elements. Before the start of each lecture realized with students to repeat the previous threads. Within 15 weeks learning how colloquiums organized two learning tests and the same have an impact on the final assessment.

Evaluation methods/Passing criteria: Students will be evaluated based on their class attendance and performance on homework assignments, exams and projects. Work should be presented in a comprehensive, neat and organized fashion in order to receive full credit. Work also must be turned in by the due date unless prior arrangements are made. Homework 20%, Two partial colloquiums exams (15% each) 30%, presence 5%, work presentation 5%. Final exam/project 40%.

Concretization tools/IT: Computer, Projector, Board.

Ratio between theoretical and practical part of study:

Theoreticalpart	Practicalpart
60%	40%

Basis Literature:

1. F.S. Jagxhiu: Rezistenca e materialeve, pjesa e dytë, Prishtinë, 1996.
2. W. F. Chen and D. J. Han: Plasticity for Structural Engineers, J. Ross Publishing, 2007.
3. Jacob Lubliner: Plasticity theory, Dover Publications, 2008.

NONLINEAR ANALYSES OF STRUCTURES

Short Content: Introduction. General knowledge of nonlinear analyses. Nonlinear analysis of statically systems. Geometrical nonlinearity of structures. Materials nonlinearity of structures. Change the stiffness of structural elements in no elastic domain

Course objectives and learning outcomes: Increase the competences of students in field of theory of structures.Effects of changes the geometry-geometry nonlinearity and material nonlinearity of structures. Effects of values in structures.

Forms/Methods of teaching: Presentations of lectures and necessary additional informations in board, and interactivity between the lectures and students during the lecturing time and exercises time with adequate examples.During the 15 weeks organized the two testes and seminars in group works.The presentations will be on individual final evaluations.

Evaluation methods/Passing criteria: The evaluations will be on base of the presence during the lectures and exercises divided in groups. The two tests will evaluate (15+15)=30%;seminar work 20 %; presence in lectures and exercises 10 %.The evaluations of theoretical part is 50 %. Final evaluations and grades is according the achieve the results. Minimum of passing the exam is to accumulate more than 50 %

Concretization tools/IT: Table , computers, table and video projectors.

Ratio between theoretical and practical part of study:

Theoretical Part	Practical part
50 %	50 %

Base Literature

Final Report: Nonlinear Pushover analysis of RC Structures, Colorado Advanced Software Institute.

A. Nayfeh, P.Frank Pai, Linear and Nonlinear Structural Mechanics

S.T.Mau, Fundamentals of Structural Analysis

THE STRUCTURE OF STABILITY

Short Content: In this subject are included linearized theory of second order, and stability of systems with some rods, that is treated with analytical and numerical methods. As well here are treated slabs stability, pliability of rectangular slabs and circular slabs.

Course objectives and learning outcomes: Notification with basic knowledge from field of structures stability.

Forms/Methods of teaching: Presentation of lecture with computer and projector, explanations in table, collaboration between the professor and student during lecture respectively during numerical exercise beginning with elementary examples until more complicated examples of structures stability . Comparison and evaluation of different works, enhance of designing-calculation performance.Before beegining of each lecture will be realized repeat of prior topics with students. In time from 15 weeks will be organized three colloquies which have impact in final evaluation.

Evaluation methods/Passing criteria: In lecture forme, numerical exercise, discussion during lecture and exercises in group also visits of various objects in the construction phase or after completion. Three of colloquies will be evaluated (10+10+10)=30%, semestral work will be evaluated with 20%, presence at lectures and exercises 5%, presentation of the work 5%, theoretical part 40%. Student passing rate will be estimated in percentage, depending on learnning during the development of the subject. Value greater than 50% is a positive result.

Concretization tools/IT: Table, computers, working table and different projects.

Ratio between theoretical and practical part of study:

Theoretical part	Practical part
100%	0%

Base literature used in subjects:

Musa Stavileci: Teoria e strukturave STABILITETI, UP FNA Prishtinë 2003

Chen W.F.,Lui E.M.: Structural Stability Theory and implementation, Elsevier, Neww-York-Amsterdam-London

Softa F.: Teoria e strukturave Qëndrueshmëria, Pllakat, Membranat, Tiranë, 1990

TECHNICAL GERMAN II:

Short Content: is continuation of the course "Technical German I" which is held in the previous semester. "Technical German II" is a practical course that enables students to familiarize with German terminology in the field of technique at the level A2/B1, where besides vocabulary are taught also grammatical structures typically for communication in technical professions. The purpose of this course is to broaden the knowledge of students about the terminology in the field of technique and to develop their general competences of language. Students will become familiar with the professional field of language technique, will become familiar with the structure of scientific texts, will be able to read and interpret professional texts.

Course objectives and learning outcomes: "Technical German I" are: To enable students to communicate in German in their professional field of technique, To expand their professional competence, To provide students with strategies which help them to understand unknown words, to extract key information from scientific texts and to develop their own texts, e.g. reports or formal letters, To develop receptive and productive skills of the student in the field of technique.

Forms/Methods of teaching: Compjutor presentation of the with the projector, Clarification on desc, during the time learning of subject the colaboration of the students and the teachrs thru the exersises, numerical examples starting from the elemnetary level up to the more complicated casses. During the semester time period on 15 weeks it will be orginse the colociumes as a learining test which they are have influenced in the final scoore.

Evaluation methods/Passing criteria: The lectures, numerical exercises, collaboration of the students during the time of semester learning and the sites visits will be evaluated each students. The semester colloquiums - tests will be estimated as 40%, work semester 20%, presence 5%, work presentation 5%. and remain of 30% will be from final exams. The final score of students will be in percentage, from the final students achievements of percentage will be passing of course.

Concretization tools/IT: Board, Computer, Projector.

Ratio between theoretical and practical part of study:

Theoretical part	Practical part
100%	0%

Basic Literature:

- Steinmetz, Maria/ Dintera, Heiner (2014): Deutsch für Ingenieure. Ein DaF-Lehrwerk für Studierende ingenieurwissenschaftlicher Fächer Additional literature:
  - Rosemarie Buhlmann , Anneliese Fearns (2013): Technisches Deutsch für Ausbildung und Beruf: Lehr- und Arbeitsbuch. Europa Lehrmittel, Goethe Institut.
  - Peter Giloy, Stephan Kumpf (200

DESING OF STRUCTURES MADE OF RC

Short Content: Improving abilities of the students related to essence of design of structures resistant to earthquake loads, design of classic structures and of those with seismic isolation. Features of construction of frame structures, separation joints, expansion joints, deflection joints, prefabricated RC structures. Waffle slabs, flat slabs. Methods of strengthening of RC structures. Spatial structures, hydro-technical structures, reservoirs, water-retaining structures, aqueducts, trenches, water collectors, etc.

Course objectives and learning outcomes: Further knowledge extension in the field of RC obtained in previous courses. Design of structures staring form the structural concepts of buildings, choosing and adoption of the most appropriate solution of the structural system, analysis of RC structure, reinforcement plans and detailing. Deeper analysis of spatial structures, various floor systems, prefabricated structures, special building structures, etc. Design up to the finest details of a RC cast in place or prefabricated structure including analysis, preliminary designs, and the final designs and up to graphical presentation of details whether manually or by a respective software worked out. Propose appropriate solutions depending on the use of the structure and based on the respective terms of reference

Forms/Methods of teaching: Presentations and lectures by means of computerized methods and through video beams, additional hand sketching explanations during the course, interaction between teacher and students during the courses respectively during the practical classes, provision of numerical examples starting with elementary and up to more complicated cases of the concrete structural elements. Comparison and evaluation of various projects, improving performance on design and calculations. Review of previous lessons before each start of a lecture. Three interim tests are planned during the 15-week learning period of the course. Scores obtained are taken into consideration in final evaluation.

Evaluation methods/Passing criteria: In form of lectures, numerical examples, discussions during the courses and practical classes organized in groups as well as during various site visits during the construction activities. Three interim tests are evaluated (10+10+10) = 30%. Semestral work takes 20% of the total scoring. Regular attendance of lectures and of practical classes takes 5%, presentation of the work, 5%, theoretical part is scored with 40%. Passage in examinations is calculated in percentage, dependent on learning achievements during the course flow. Over 50% of accumulated scores result positive.

Concretization tools/IT: White boards, computers, working tables, various projects.

Ratio between theoretical and practical part of study:

Theoretical part	Practical part – home works
50 %	50 %

Basic literature used:

1. H. Sylejmani, K. Morina, N. Hoxha – Authorized Lectures in Design of RC Structures;
2. K. Negovani & Nikolla Verdho, Reinforced Concrete I and II,
3. EC 1, EC 2,
4. Ivan Tomicic,

EXAMINATIONS OF STRUCTURES:

Short Content: Basic knowledge of elasto-plastic properties of materials. Effect of properties of materials in examinations of Structures. Determinations of deformations; stress and strains in structures elements.Theory of instruments: deflectometers; klinometers; tensometers; strain gauges; and principles of works and used the instruments. Deformabile properties of concrete : Modulus of Elasticity; Posson coefficient. Model analyses , and model in analyzing the strain-stress analyse in structural elements. Methods for evaluations the concrete in structures: Destructive and nondestructive methods. The methods for examinations of behavior the bridges under loads –"In Situ" methods. Optical analyses of stresses, methods and procedures for evaluations.

Course objectives and learning outcomes: To inform the students in details about the theory of elasticity and effect in Examinations of Structures.To explain the theory of Instruments and aplications in practical design, especialy in element of structures.To offer the aplications through the seminars for each topic.Possibilites to visit the site examinations of bridges or another elements.

Forms/Methods of teaching: Presenatation of lectures and additional necessary informations in table. During lectures exist the interactivity between lecture and students, including also the exercises and seminar works. The each topic will be cover with some of examples in class and aslo such homework seminars. Increase the performance focused on the direct implementations the theories in practical examples.During the 15 working weeks we organize the four seminars-each seminar/ specific field, such individual work, and in this form to create the chance for interactive activity between the students and to involve time by time the lecturer.All the activities will be evaluate o the final exam and will have the effect in final grade.

Evaluation methods/Passing criteria: The evaluations will cover all the activities during the lectures; exercises and presentation the individual seminar work.The each of fourth seminars will be evaluate in content: (5 +5+%+5)=20 %; presentation 10 %; presence in lecture and exercises 10 %; and final test 60 %. Passing the exam will be calculate based on the results for each activity; and summary when student achieve the more than 50 % will pass the exam. The grades will calculate based on the percent of total points.

Concretization tools/IT: White board; PC computer; Work table; Video projector, ect

Ratio between theoretical and practical part of study:

Theoritical part	Practical part
60 %	40 %

Base literature :

1. N.Kabashi, Shqyrtimet e Konstruksioneve,(ligjerata te autorizuara) FNA, Prishtine

2. Vukotic: Ispitivanje Konstrukcija, Beograd

3. J.P.Holman: Experimental Methods for Engineers

DESIGN OF METALLIC BRIDGES

Short Content::"Design of metallic bridges" in general lecture hours handle with themes of "Bridges" part , with analysis of design specifications and details..

Exercises part deals with the design of the main design and Completion of design of preparation in factory, way of transport and plan of assemblage, testing of the object, monitoring and maintenance

Course objectives and learning outcomes: Object of study: mainly to apply knowledge acquired during lecture and exercise parts for designing as follows: 1. study of variants and selection of the most adequate2.redaction of a rational and clear technical report 3. Statical calculations and bridge dimensioning 4.completion and compilation of technical design and constructive connections 5.to acquire knowledge about design , building , testing, monitoring and maintenance of bridges, and to be able to continue and to improve future study of the knowledge acquire in this course. After completion of this course, students have capacity: 1. depending on the needs, to be able , as a junior, to take active part in the designing group. 2. to know and to be able to establish the bridge position in relation to obstacle. 3.to establish the bridge geometry (one span or more) in relation to obstacle, traffic and perspective for determined time. 4. to choose the adequate system of bridge, thus to establish the type of deck, beams of deck, main girders and other elements. 5. for those given data to compile the bridge main design. To be prepared to continue future studying of this field and other similar

Forms/Methods of teaching: In lecture forme, numerical exercise, discussion during lecture and exercises in group also visits of various objects in the construction phase or after completion.

Evaluation methods/Passing criteria: Three of colloquies will be evaluated (10+10+10)=30%, semestral work will be evaluated with 20%, presence at lectures and exercises 5%, presentation of the work 5%, theoretical part 40%. Student passing rate will be estimated in percentage, depending on learnning during the development of the subject. Value greater than 50% is a positive result.

Concretization tools/IT: projector, laptop, table.

Ratio between theoretical and practical part of study:

Teorical part	Practical part
15%	85%

Basic Literature:

1.A.Vokshi, A. Muriqi-- Konstruksionet e urave metalike (dispense)

2.B.Çeku,P. Çerepi,E.Gjadri-- Urat dhe tunelet (Bridges and tunnels)

3.Wai- Fah Chen,Lian Duan --Bridge Engineering Handbook

4.Sukhen Chatterjee--The Design of Modern Steel Bridges

DESIGN OF CONCRETE BRIDGES

Short Content: The course develops knowledge of concrete bridge entirely like structure and elements and the concretet bridges . It will elaborate kinds of static systems to bridges (simple beam, continuous, gerber, Frame) and their cross-section,
It would also discusses the types of loadst for cases mentioned by EC and dynamic and static analysis of ekementeve, and the bridge entirely. In the end it will studied and discuted the cases advanced buildid bridges , arc and hanging, presstres and prefabricates bridges , and aplaid construction technologies

Course objectives and learning outcomes: The objective of this course is to:

• To teach the student to anlyse the posible variants of the bridge
• To make optimal choices in assessing the function of the case.
• The adopt all elements of a bridge with approximate dimensions - the conceptual design of the bridge
• adopt and make appropriate live loads and calculate static and dynamic elements of the bridge
• To calculate cros section and elements and reinforcement plans for elements

Forms/Methods of teaching: Teaching ex-cathedra and discussion of topics related to interactive lectures with students analyzing specific bridges executed. Exercises are developed by working seminarik- complete conceptual design of a bridge, variants, provisions, calculation and dimensioning

Evaluation methods/Passing criteria: Participation in lectures and exercises 10%; Thesis writing seminar with 25%; Presentation of the workshop 10%; Test 25%; Final exam (oral) 30%.

Concretization tools/IT: projector, laptop, table.

Ratio between theoretical and practical part of study:

The theoretical part	The practical part
40%	60%

Literature:
Shaban Perjuci - lectures to autorizuara- Prishtine
Concret bridges. P.E.Mondorf
Additional literature:
Betonski mostovi .prirucnik za vezbe Nebojsa Mojsilovic.

BASES OF EARTHQUAKE ENGINEERING

Short Content: In Engineering viewpoint, are treated problems of the seismic reaction of structures, respectively modeled as systems with one or many degree of freedom. Also analyzed new concepts in the field of earthquake engineering. Regarding norms and standards, material was referred mainly Eurocodes, respectively EC 8.

Course objectives and learning outcomes: Better engineering forming with base knowledge of analysis and designing of engineering structures which are under seismic loads.

Forms/Methods of teaching: Presentation of lecture with computer and projector, explanations in table, collaboration between the professor and student during lecture respectively during numerical exercises beginning with elementary examples until more complicated examples of structures in seismic zone. Before beegining of each lecture will be realized repeat of prior topics with students. In time from 15 weeks will be organized three colloquies which have impact in final evaluation.

Evaluation methods/Passing criteria: In lecture forme, numerical exercise, discussion during lecture and exercises in group also visits of various objects in the construction phase or after completion. Three of colloquies will be evaluated (10+10+10)=30%, semestral work will be evaluated with 20%, presence at lectures and exercises 5%, presentation of the work 5%, theoretical part 40%. Student passing rate will be estimated in percentage, depending on learnning during the development of the subject. Value greater than 50% is a positive result.

Concretization tools/IT: Table, computers, working table and different projects.

Ratio between theoretical and practical part of study:

Theoretical part	Practical part
100%	0%

The relations between the theoretical and practical study:

Niko Pojani: Inxhinieria sizmike, Tiranë 2003,

Misin Misini: Bazat e inxhinierisë së tërmeteve, leksione të shkruara, UP, FNA, Prishtinë 2008

Clough R., Penzien J.: Dynamics of Structures, McGraw-Hill, 2ndEd 1993

TALL BUILDINGS

Short Content: tall buildings" includes:-in chapter I –general notes about tall building. Aspects to study during design of these buildings.Forms and structures of tall buildings.Steel structures, concrete structures, composite structures. Different forms and systems of floors, columns.Wind influence in tall buildings, construction of these buildings in seismic zones. In chapter II-tall chimney and towers, their constructive forms, geometrical parameters and ratio, loads from wind action according to Eurocodes , influence of seismic action.

Course objectives and learning outcomes: mainly to apply knowledge from lecture and exercise parts for designing (main design draw up) buildings with typical forms and systems for tall buildings and chimney, presentation of these knowledge with competence and possibility of continuation of future study. Mainly to apply knowledge from lecture and exercise parts for designing (main design draw up) buildings with typical forms and systems for tall buildings and chimney, presentation of these knowledge with competence and possibility of continuation of future study

Forms/Methods of teaching: Lecture and regular semestral exercise. Lecture are conducted with explanations for all the group, while in the part of exercise, each student has to achieve a seminar work assisted and helped by the lecturer of the course, and collaborating in group by discussions and reciprocal help.

Evaluation methods/Passing criteria: In lecture forme, numerical exercise, discussion during lecture and exercises in group also visits of various objects in the construction phase or after completion. Three of colloquies will be evaluated (10+10+10)=30%, semestral work will be evaluated with 20%, presence at lectures and exercises 5%, presentation of the work 5%, theoretical part 40%. Student passing rate will be estimated in percentage, depending on learnning during the development of the subject. Value greater than 50% is a positive result

Concretization tools/IT: Table, computers, working table and different projects.

Ratio between theoretical and practical part of study:

Teorical part	Practical part
50%	50%

Base literature used in subjects:

1.A.Vokshi, M.Vranica--Objektet Speciale- -objektet e larta (dispense)

2.Bungale S. Taranath--Steel Concrete and Composite Design of Tall Buildings

3.Boris Androic, Darko Dujimovic , Ivica dzeba—Metalne konstrukcije 1

REPAIRING THE EXISTING STRUCTURES:

Short Content: Knowledge of different structures wit different materials. Effect of different factors in damages in existing structures and diagnostific the problems.Repairing the existing Concrete structures, results from different factors; corrosion; deflections; local damages; collapses and different structural behaviours under the critical loadings including the earthquake, wind and nonmaintenca of structures durig the exploattions. Structural strengthening using the FRP, and different methods and softwares for strengthening the structures or elements. Informative knowledge for strengthening the steel and wood structures using the FRP. In all cases using the EN 1504 in repairing using the methods and adequate materials.

Course objectives and learning outcomes: Repairing , sanation, such part of strengthening of the elements or structures. Dignostify the cuse of the damages and create the algoritm for repairing usin all the results from the visual or laboratory tests. Calculations and using the different softwares and different materials in examples during the course.

Forms/Methods of teaching: Presentation the lectures and necessary additiona informations in board , always in interactive process with the students. All the topics are linked with practical samples from different study cases.The students will extand the knowledge in theory of calculations : ULS, SLS, states, calculations of crackes and positions in structures during the exploations. During the 15 working weeks the student will prepare the seminar work in group of three strudents , and each group will present the results, and finaly comparing the results and experinces from different groups will increase the knowledge the students.
The seminar work will be evaluate in final evaluations.

Evaluation methods/Passing criteria: The evaluations will cover all the activities during the lectures; exercises and presentation the individual seminar work.The each group seminar will be evaluate in content: 10 %; presentation 10 %; presence in lecture and exercises 20 %; and final test 60 %. Passing the exam will be calculate based on the results for each activity; and summary when student achieve the more than 50 % will pass the exam. The grades will calculate based on the percent of total points.

Concretization tools/IT: White board; PC computer; Work table; Video projector, ect

Ratio between theoretical and practical part of study:

Theoritical part	Practical Part
60 %	40 %

Base literature :

1. N.Kabashi, Sanimi i Strukturave Ekzistuese (ligjerata te autorizuara) FNA, Prishtine

2. Michael Raupach;Till Buttner: Concrete Repair to EN 1504; Diagnosis, Design, Principles and Practice

3. Peter Campbell: Learning from Construction Failures; Appled Forensic Engineering

RHEOlOGICAL CHARACTERISTICS OF CONCRETE

Short Content: General knowledge about the possibilities of experimental determination, settings and features in particular the characteristics of fresh concrete, rheological characteristics of concrete and factors wich has impact in these characteristics.

Course objectives and learning outcomes: Students to be recognized with possibilities for experimental research of rheological characteristics. To have the opportunity to be recognized with the determination of deformations with long time process. Also be recognized with the experimental equipment for setting these deformations.

Forms/Methods of teaching: Presentation of lecture with computer and projector, explanations in table, collaboration between the professor and student during lecture respectively during numerical exercise. Before beegining of each lecture will be realized repeat of prior topics with students. In time from 15 weeks will be organized three colloquies which have impact in final evaluation.

Evaluation methods/Passing criteria: In lecture forme, numerical exercise, discussion during lecture and exercises in group also visits of various objects in the construction phase or after completion. Three of colloquies will be evaluated (10+10+10)=30%, semestral work will be evaluated with 20%, presence at lectures and exercises 5%, presentation of the work 5%, theoretical part 40%. Student passing rate will be estimated in percentage, depending on learnning during the development of the subject. Value greater than 50% is a positive result.

Concretization tools/IT: Table, computers, working table and different projects.

Ratio between theoretical and practical part of study:

Theoretical part	Practical part
100%	0%

Base literature used in subjects:

[1] Prof. Dr. Fetah Jagxhiu, Reologjia e betonit (ligjërata për magjistraturë), FNA, Prishtinë

[2] Prof asoc. Dr. Fisnik Kadiu, Teknologjia e materialeve të ndërtimit, FIN, Tiranë

[3] Mang Tia Yanjun Liu Danny Brown MODULUS OF ELASTICITY, CREEP AND SHRINKAGE OF CONCRETE Department of Civil & Coastal Engineering University of Florida May 2005.

MASONRY STRUCTURES

Short Content: Basic knowledge of the masonry structure forming. Design and Computation of sturctural unreinforced masonry members. Diferent unit masonry elements, their performances on the masonry structures, rules and principles of masonry walls and structures, their capability computation. Designs of bearing capacity walls, shear walls and bending walls from unreinforced masonry systems. Reinforced Concrete structural systems their Performances.

Course objectives and learning outcomes: An theoretical course which knowledge pupils to learn for the masonry units, infilds, Structural unreinforced and reinforced masonry systems. Design capacity for the entair structure and their members.

Forms/Methods of teaching: Computer lecture presentation of with the projector, Clarification on desk, during the time learning of subject the collaboration of the students and the teachers thru the exercises, numerical examples starting from the elementary level up to the more complicated cases. Compilation and assessment of different work design presentation, increase the design and computation performances. During the semester time period on 15 weeks it will be organize the colloquiums as a learning test which they are have influenced in the final score.

Evaluation methods/Passing criteria: The lectures, numerical exercises, collaboration of the students during the time of semester learning and the sites visits will be evaluated each students. The semester colloquiums - tests will be estimated as 30%, work semester 20%, presence 5%, work presentation 5%. and remain of 40% will be from final exams. The final score of students will be in percentage, from the final students achievements of percentage will be passing of course.

Concretization tools/IT: Board, Computer, Projector.

Ratio between theoretical and practical part of study:

Theoretical part	Practical part
60 %	40 %

Basic Literatue:

F. Grajcevci, Konstruksionet muraturë,(ligjërata të autorizuara) FNA, Prishtinë

Eurodi 1, EN 1991, Eurokodi 6, EN 1996, Manual for the design of plain masonry in building strukture to Eurocode 6, The institution of Structural Engineers; Seismic design guide for Masonry Buildings, Donald Anderson Svetlana Brzev; Design of Masonry Structures according Eurocode 6, Prof Dr. Wieland Ramm, TCHU of Kaiserslautern

SPECIAL FOUNDATION

Short Content: Pile foundations from different materials, the reason of the application of piles, types of piles and method of transferring loads to the ground, the calculation the bearing capacity of piles - analytical methods and from the field, the behavior of the isolated pile and group of piles from the action of horizontal force, settlement of the isolated piles and group of piles, excavation with screen, screen reinforcement techniques, caisson foundations and calculation, foundations on difficult soils.

Course objectives and learning outcomes: The reason of selecting deep Funding methods foundations. Knowing methods of deep foundations, determining the size of the foundations and basic techniques for the design of deep foundations and techniques of reinforcement of excavation pit.

Forms/Methods of teaching: Computor presentation of the with the projector, Clarification on desk, during the time learning of subject the colaboration of the students and the teachrs thru the exersises, numerical examples starting from the elemnetary level up to the more complicated casses. During the semester time period on 15 weeks it will be orginse the colociumes as a learining test which they are have influenced in the final scoore.

Evaluation methods/Passing criteria: The lectures, numerical exercises, collaboration of the students during the time of semester learning and the sites visits will be evaluated each students. The semester colloquiums - tests will be estimated as 40%, work semester 20%, presence 5%, work presentation 5%. and remain of 30% will be from final exams. The final score of students will be in percentage, from the final students achievements of percentage will be passing of course.

Concretization tools/IT: Board, Computer, Projector.

Ratio between theoretical and practical part of study:

Theoretical part	Practical part
60%	40%

Basic Literature: 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: Fizibility of construction projects, Price Analysis in construction, project financial planing, return of investment, project life-cycle cost, Capitalisation and depretiation of property and plant, project cash flow.

Course objectives and learning outcomes: Learning and understanding of financial part of engineering projects. After completion of this course the Student will be able to understand how to: Prepare and evaluate project feasibility, Prepare construction price anaylysis, Analyze project RoI, Prepare financial proposal, Follow up project finances.

Forms/Methods of teaching: Computor presentation of the with the projector, Clarification on desk, during the time learning of subject the colaboration of the students and the teachrs thru the exersises, numerical examples starting from the elemnetary level up to the more complicated casses. During the semester time period on 15 weeks it will be orginse the colociumes as a learining test which they are have influenced in the final scoore.

Evaluation methods/Passing criteria: Evaluation of the students capability for resolving of case studies, Presentation of the finding from field work in correlation with theoretical knowledge, Participation during the lecturing and exercise hours, Evaluation of final exam which is divided in two parts, project problem solving and discussion of case studies..

Concretization tools/IT: Board, Computer, Projector.

Ratio between theoretical and practical part of study:

Theoretical part	Practical part
60%	40%

Basic Literature:

Gashi E, Engineering Economica (working book) 2012,
Donald N, Engineering Economic Analysis ;
Panneer selvam R., Engineering Economics;
James L.RIGGS, Economic Engineering