EPOKA UNIVERSITY | Department of Civil Engineering

ANNUAL REPORT

2020 – 2021

Annual Report

2020 – 2021

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A. Organization & Management

Introduction

General

Civil Engineering covers a wide range of engineering applications from dams, tunnels, pipelines and highways to buildings. Civil Engineering is distinguished as being one of the earliest engineering disciplines. Throughout the ages it has provided creative and feasible solutions to many of the basic human needs and problems, and it still continues to take pride in being a fundamental building block of civilization

Mission

Understanding of the fundamentals of science and engineering so that they can develop solutions to Civil Engineering problems and enhance their computing, communication, and research skills. It is aimed to especially emphasize teamwork, independent and innovative thinking and leadership qualities. In particular, the Civil Engineering Program aims to:

- Train the students to have theoretical background in basic sciences and engineering and to be equipped with necessary technical skills,
- Develop students' competency in reading, writing and oral communication,
- Provide practical experience which will enable students to utilize and enhance their engineering knowledge,
- Promote students' self-discipline and self-assurance and the ability to learn on their own,
- Encourage teamwork, collaboration and development of interpersonal skills,
- Motivate the students towards contributing to the progress of science and technology,
- Teach the importance of ethical behavior in social and professional life,
- Produce graduates for the engineering and the business communities who are observant, inquisitive and open to new technologies for developing better solutions,
- Produce graduates for the engineering and business communities with integrity, determination, judgment, motivation, ability and education to assume a leadership role to meet the demanding challenges of the society.

Study programs offered by the Department

1. The Bachelor

The Bachelor Program in Civil Engineering is composed of three years of full-time academic study.

The first year of the degree program present a broad, practical overview of the field of Civil Engineering. During this first year, presentation of the course material is primarily delivered at a foundational level with engineering fundamentals stressed and reinforced across the curriculum. A strong understanding of practical and physical principles is fostered and promoted, and an abundance of learning opportunities is provided to apply these fundamentals to the solution of real-world design scenarios that would be encountered by both technologists and engineers. Throughout the program, opportunities are presented to students to strengthen their graphical, written, and oral communication skills. A significant amount of time is directly related to hands-on training in material testing, surveying, manual and computer-aided drafting, and instruction in the use of engineering software tools.

The second and third year are mainly composed of basic engineering courses involving the study and application of the principles of geotechnical engineering (behavior of soils, design of foundations), structural engineering (analysis and design of reinforced concrete and steel structures), hydraulics engineering (flow of water in pipes, open channels, water resources), and the general systems approach to engineering problems. The final two years of the degree program are academically rigorous, with thorough investigation of the theoretical foundations of civil engineering science and design topics. At the same time, the practical application of civil engineering knowledge is presented and applied through course assignments and project work. Additionally, the student is challenged to view the engineer's role from an interdisciplinary and multidisciplinary perspective. The role of the engineer as a manager is also developed. In the final two years of the program, the student's educational experience is enriched through a series of liberal studies courses. To further develop engineering skills for professional practice, the degree concludes with the completion of a summer practice.

In the second semester of third year, students whose GPA is higher than 3.0 have the chance to choose between Graduation Project or Final Comprehensive Exam. Students whose GPA is below 3.0 are obliged to enter the Final Comprehensive Exam.

2. Professional Master

The Professional Master of CE Program offers a year of advanced study for graduate students with previous professional degrees in Civil Engineering (or equivalent with a strong knowledge background). This Professional Master's degree program is an interdisciplinary program of study with a concentrated time for completion. The program is intended for qualified students who already have professional work experience. Students without professional experience after completion of the professional degree may be admitted, depending on the quality of their work. Students must demonstrate evidence of high-quality work and potential for development based on their grade-point average, letters of recommendation. Classes generally take place in the evenings (5:15 pm – 9.00 pm). The program's goals are to further train professionals in civil engineering who are able to work effectively in teams across a large range of scales and with a well-developed knowledge. The program offers a unique blend of courses in different areas. Students will share working methods, acquire additional skills, and explore new avenues of professional development under the supervision of an interdisciplinary group of faculty members in the Department of Civil Engineering at EPOKA University.

Curriculum

The Professional Master's degree combines a core curriculum with the opportunity to take elective courses tailored to a student's particular areas of interest. These courses typically relate to the student's field of interest and are selected by the student in consultation with the department advisor. To earn the Professional Master's degree, students must complete one year in residence, 60 ECTS credits of coursework, and the core curriculum.

Course Structure

The program is taught in English. Therefore, Albanian and international applicants from countries in which the official language is not English are required to submit official evidence of English language proficiency.

3. Master of Science

Our practice-oriented Master of Science in Civil Engineering (MSc) program builds upon an undergraduate education and facilitates more advanced study in one of the branches of civil engineering. The program consists of 120 ECTS, and all graduate courses are offered in the late afternoon or evening.

Mission Statement

The Master of Science in Civil Engineering (MSc) program is intended to serve graduate students who have a Bachelor on Civil Engineering or closely related undergraduate degree in order to strengthen their knowledge and understanding of civil engineering principles and practices. The program is primarily intended for students who currently are, or intend to become, practicing civil engineers, and thus focuses on the application of these principles and practices to real-world problems encountered by professional civil engineers.

Another purpose of the program is to facilitate applied research on relevant civil engineering topics. Such research should 1) serve societal needs by addressing contemporary issues, 2) contribute to the professional development of both students and faculty and 3) provide preparation for further academic study and research for those students who wish to pursue a Ph.D.

Educational Objectives

Graduates of the MSc program should have:

1. A knowledge of engineering principles sufficient to understand the bases and applicability of standard analysis, design, and implementation practices within their emphasis area.
2. The ability to conduct engineering analyses and to develop and implement designs and problem solutions that conform to applicable codes and standards of practice.
3. An understanding of the various technical and non-technical factors that impact the feasibility and implementation of civil engineering projects, including: technical feasibility, multi-party involvement, environmental assessment, financial/economic planning, owner/public works administration, owners' strategic plans, and socioeconomic/equity issues.
4. The foundation needed to develop engineering judgment via professional practice, and to effectively identify, consider, and account for multiple and competing objectives.
5. The technical knowledge and skills needed to pursue lifelong learning with the ability to independently extend personal knowledge and understanding of engineering topics and

practices by conducting literature searches, consulting with others, and using other similar techniques.

6. Knowledge and skills necessary to pass specialty license examinations in their respective emphasis areas.

Curriculum

The **Master of Science** in Civil Engineering offers to the students the possibility of specializing into four profiles such as: **Structural Engineering**, **Construction Management, Construction Materials** and **Water Resources Engineering.** It combines a core curriculum with the opportunity to take elective courses tailored to a student's particular areas of interest. These courses typically relate to the student's thesis topic and are selected by the student in consultation with department advisor. To earn the MSc degree, students must complete in total 120 ECTS credits from their coursework and a Master thesis.

Curriculum:

Structural Engineering

Construction Management

Construction Materials

Water Resources Engineering

Course Structure

The program is taught in English. Therefore, Albanian and international applicants from countries in which the official language is not English are required to submit official evidence of English language proficiency.

Master Thesis

Thesis topics are developed individually by the student in consultation with department advisor. To prepare for their thesis research and writing, students must complete a course that offers instruction in

research methods and academic writing. Thesis committees consist of three members, usually department members of Civil Engineer at EPOKA University. Students can also invite an outside reader to partake in the thesis committee.

A preliminary thesis proposal is prepared during the fall semester and presented to the department after the winter break. The thesis project is substantially developed during the spring semester in close collaboration with the academic advisor. The thesis is typically finalized during the summer and formally presented in front of the jury. (Although MSc students are strongly encouraged to complete their written thesis during the summer, students have the option of going on filing fee for an extra semester and finalizing their written thesis during the fall semester.)

4. PhD (Doctorate)

The objective of the doctoral study program is the advancement of analytical and/or experimental knowledge through a combination of specialized courses and a research thesis under the supervision of an experienced researcher forms the main component of the doctoral programs. Where possible, research of interest to industry is encouraged. CE-PhD Program in Civil Engineering is necessary for the formation of academicians in various fields of research in Civil Engineering. Program also gives opportunity to qualified students from various academic disciplines for further education at an advanced level in Civil Engineering. The PhD study program for full-time students lasts for a minimum of six semesters (three academic years), up to a maximum of eight semesters (four academic years) and for part-time students, it lasts for a minimum of six semesters (three academic years), up to a maximum of twelve semesters (six academic years). The first year is devoted to the core courses. Formal work on the dissertation begins in the second year; students are encouraged to get the start on their thesis by research and writing.

B. Resources

Department Staff

Dr. Erion Luga is the Director of Center of Research and Design in Applied Sciences at EPOKA University and a Lecturer in the Department of Civil Engineering. He got his integrated diploma in Civil Engineering in February 2009 from the Civil Engineering Department at the Polytechnic University of Tirana, then completed his Master of Second Level in February 2011 at EPOKA University in the subdiscipline of Construction Materials. In February 2015 he completed the PhD studies in the same field at Erciyes University/Turkey. His current research focuses on recycling of industrial by-products in construction materials, mainly in concrete, sustainability and optimization in their production etc. During his PhD studies Mr. Luga has also worked in the investigation of several structures and materials in the region of Kayseri, Turkey. During his research he has been dealing with the design of different materials to be introduced in the construction sector. Regarding his lecturing experience, he has been teaching courses such as: General Chemistry, Materials Science, Introduction to Construction Materials, Properties of Fresh & Hardened Concrete, Durability of Concrete, Special Concretes, Supplementary Cementing Materials and Advanced Concrete Technology. On the other hand, Dr. Luga has several journal publications in indexed journals also he has participated in different conferences related to concrete and construction materials. He has also supervised some very successful Master thesis.

He is also the Head of the Department of Civil Engineering.

Assoc. Prof. Dr. Hüseyin Bilgin in the Civil Engineering Department at EPOKA University, Tirana Albania. He is actively taking part in teaching, research, and the practice of structural and earthquake engineering, with emphasis on the response, analysis and design of reinforced concrete and masonry structures.

He teaches the compulsory core courses Engineering Mechanics and Mechanics of Materials for second-year students and, he is the coordinator of the elective courses Introduction to Structural Dynamics, Supervised Independent Study and Research, and Introduction to Earthquake Resistant Design in the 7th and 8th semesters of the area of structural engineering specialization. He also teaches the graduate courses Structural Dynamics and Earthquake Engineering.

His main research interests are related to the response of structures to extreme loads focusing on the areas of structural and earthquake engineering with the emphasis on problems of non-linearity and performance evaluation of members, connections, and structures.

He has been involved in several research projects in these areas and has worked as an expert consultant on numerous engineering projects mostly made of reinforced concrete, but also of other structural materials. He has also participated in various national and international scientific activities related to structural and earthquake engineering.

He has supervised PhD, MSc and undergraduate students studying in the above fields.

Assoc Prof. Dr. Miriam Ndini. She is an Associated Professor in the Department of Civil Engineering at EPOKA University. Her research and teaching focuses on water, she is a hydrologist.

With a background in Civil Engineering- Hydraulics, she has been working as a researcher on the field of Hydrology. This work consists on estimation the water resources in the watershed, evaluating the flow parameters, measuring the data from the hydrologic network, elaboration and analyzing them.

Actively she is involved in projects dealing with effects of climate changes on water resources and its impact on different sectors.

All through research, she is involved in teaching. From the year 2000 she is teaching on the courses as Fluid Mechanics; River Mechanics; Water Resources Engineering and Hydrology.

Dr. Julinda Keçi is a faculty member of the Civil Engineering Department at EPOKA University, Albania. She has a Master of Science degree in Structural Engineering from Polytechnic University of Tirana, and a PhD in Civil Engineering, specializing in Construction Management. Her research interests include construction management and technology, project planning, risk management, and economic assessment of engineering projects. One of the primary foci of her work is the implementation of sustainable methods in projects management and building performance. She was involved in international projects and in the organization of several international Civil Engineering

conferences. She has published works on risk management, construction management, project planning, building optimization through geotechnical and earthquake design, etc.

Dr. Enea Mustafaraj is a full-time lecturer at the Department of Civil Engineering at EPOKA University. He has actively been taking part in teaching of fundamental courses related to reinforced concrete design and the fundamentals of steel design, as well as analysis of structures in bachelor and master level. He has also supervised bachelor and master students. His research activities are related to structural assessment of structures, mainly the historical ones, improvement of the performance of existing URM buildings using various retrofitting techniques. He completed his master studies in June 2012 with my thesis entitled "A Case Study of Structural Assessment of Five Ottoman Mosques in Albania". He was awarded the PhD degree in June 2016, with a dissertation entitled "External Shear Strengthening of Unreinforced Damaged Masonry Walls". During the last years, he has been studying structural performance of unreinforced, reinforced and damaged masonry walls subjected to diagonal compression (as of ASTM E-519-04). Dr. Mustafaraj has participated in national and international projects, conferences and workshops, and is author of more than 19 publications.

MSc. Marsed Leti is a Assistant Lecturer in Civil Engineering Department at EPOKA University, Tirana, Albania. He holds a Master of Science degree in Structural Engineering from EPOKA University therefore his main research interests are related to the response of reinforced concrete structures under static and dynamic loading conditions conducted mainly by the non-linear analysis methods. He is dynamically taking part in teaching, research and student activities since 2014-2015 academic year. He has been teaching and assisting in: Civil Engineering Drawing, Engineering Mechanics I, Mechanics of Materials, Statics and Strength of Materials and Structural Mechanics. Moreover, he has been involved in several activities such as: Open Forums, Workshops, Site Visits, Laboratory experiments etc. organized at EPOKA University during 2014-2019 academic years. He owns good command of English, Civil Engineering, AutoCAD, SAP2000, Etabs, Zeus NL, Perform 3D, Stereo Statika, Microsoft Office, Google sheet, Matlab, USEE, Nonlin, Photoshop, Illustrator, After effects etc.

MSc. Margarita Dajko- Assistant Lecturer in Civil Engineering Department at EPOKA University, Tirana, Albania. She holds a Master of Science degree in Structural Engineering from EPOKA

University. She has been teaching in courses: Engineering Mechanics II, Soil Mechanics, Foundation Engineering, Final Comprehensive Exam etc.

Part time Academic Staff

Prof. Dr. Ylber Muçeku
MSc. Derinela Tafçiu

Academic Visitors (2020-2021)

Civil Engineering Department organized the 4th INTERNATIONAL BALKANS CONFERENCE ON CHALLENGES OF CIVIL ENGINEERING (4-BCCCE).

On 18-19 December 2020 Epoka University, the Department of Civil Engineering at EPOKA University, Institute of Geosciences of Albania, University of Perugia, Polytechnic University of Bari, University of Novi Sad, Ss Cyril and Methodius University, "Gheorghe Asachi" Technical University of Iasi and the University of Prishtina jointly organized the **4th INTERNATIONAL BALKANS CONFERENCE ON CHALLENGES OF CIVIL ENGINEERING (4-BCCCE).**

The Chair of the Conference, **Dr. Erion Luga,** Dean of the Faculty of Architecture and Engineering, EPOKA University **Assoc. Prof. Dr. Sokol Dervishi** and the distinguished guests and keynote speakers **Prof. Dr. Jorge de Brito from University of Lisbon, Portugal, Prof. Dr. Arturo Schultz from the University of Texas at San Antonio, USA, and Assoc. Prof. Dr. Marco Corradi, Northumbria University, UK.** contributed with their valuable speeches in the opening ceremony of the conference.

The conference focused on ten core areas such as: Structural and Earthquake Engineering, Construction Management and Technology, Construction Materials, Geotechnical Engineering, Transportation Engineering, Historical and Monumental Buildings, Disaster Risk Management, Impact of Climate Change on Built Environment, Sustainable and Life Cycle Assessment, Innovative Practices

in Construction Industry. The Conference brought together many academicians and professionals from 12 different countries in the Balkans and beyond.

Due to COVID-19 Pandemic the conference was organized fully online. Despite this unprecedented situation, the conference was very successful and all the participants expressed their satisfaction for being part of this event and benefiting from the presentations and discussions.

Dr. Erion Luga and Dr. Enea Mustafaraj participated in ICGEE 2020

On November 26-27, 2020, Dr. Erion Luga and Dr. Enea Mustafaraj participated in the **INTERNATIONAL CONFERENCE ON GEOSCIENCES AND EARTHQUAKE ENGINEERING, CHALLENGES FOR BALKAN REGION ICGEE – 2020"** organized by the Academy of Sciences of Albania, where they were invited to present physically their experimental investigations.

Dr. Luga presented "***Effect of Different Parameters on the Behavior of RC Columns Sections under Normal Compression***", a study done with his master student Sulejman Hyka and his other colleague Eng. Erion Periku. An experimental investigation involving the testing of 54 RC column sections of different cross sections, stirrup distances and concrete classes.

Dr. Mustafaraj presented his study on "***Improvement of unreinforced masonry shear strength using ferrocement jacketing technique***" conducted together with Assoc. Prof. Dr. Yavuz Yardım.

As the November 26, 2019 earthquake showed once again how vulnerable masonry buildings are, the proposed technique provided a considerable improvement in both shear resistance and deformation capacities, making the walls stronger and more ductile.

Our student, Mr. Marjo Hysenlliu defended his PhD dissertation

On January 27, 2021, Mr. Marjo Hysenlliu, PhD student at the Department of Civil Engineering, EPOKA University has successfully defended his PhD dissertation entitled **"Vulnerability Assessment of Current Masonry Building Stock in Albania".** Mr. Hysenlliu is the second PhD student graduated from the department of Civil Engineering at EPOKA University.

The Jury of the PhD Defence was composed of Distinguished Professors in this field in Albania and Kosovo:

Prof. Dr. Niko Pojani

Prof. Dr. Naser Kabashi

Prof. Dr. Perparim Hoxha

Assoc. Prof. Dr. Neritan Shkodrani

Assoc. Prof. Sokol Dervishi

We wish every success to Dr. Hysenlliu in his future academic career and professional engagements.

Administrative Staff

Amelia Bullari holds a Bachelor's degree in Business Informatics. She is continuing her Master of Science studies at Business Administration Department, Faculty of Economics and Administrative Sciences, EPOKA University. At the same time, she works as the Coordinator of Civil Engineering Department.

Finance

IT Resources, Physical Infrastructure and Library Resources

C. The Curriculum

Undergraduate Teaching

Faculty of Architecture and Engineering																
Department of Civil Engineering																
FIRST YEAR																
First Semester																
COURSES		**Course Type**	**Compulsory /Elective**	**Weekly Course Distribution**				**Epoka**	**Semestral Lecture and studying hours**						**ECTS**
Code	**Course Name**			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
MTH 101	Calculus I	A	Compulsory	3	2	0	5	4	48	32	0	0	95	175	7
PHY 101	General Physics I	A	Compulsory	3	2	0	5	4	48	32	0	0	95	175	7
CHM 103	General Chemistry	A	Compulsory	3	0	0	3	3	48	0	0	0	52	100	4
CE 101	Introduction to Civil Engineering	B	Compulsory	2	0	0	2	2	32	0	0	35	33	100	4
CE 121	Civil Engineering Drawing	B	Compulsory	2	2	0	4	3	32	32	0	0	36	100	4
ENG 103	Development of Reading and Writing Skills in English I	D	Compulsory	3	0	0	3	3	48	0	0	0	52	100	4
Semestral Total				**16**	**6**	**0**	**22**	**19**	**256**	**96**	**0**	**35**	**363**	**750**	**30**

FIRST YEAR															
Second Semester															
COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka	Semestral Course and studying hours						ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
CE 132	Engineering Mechanics I	B	Compulsory	2	2	0	4	3	32	32	0	10	76	150	6
CE 122	Materials Science	C	Compulsory	2	2	0	4	3	32	32	0	10	26	100	4
MTH 102	Calculus II	A	Compulsory	3	2	0	5	4	48	32	0	0	95	175	7
ENG 104	Development of Reading and Writing Skills in English II	D	Compulsory	3	0	0	3	3	48	0	0	0	52	100	4
CEN 104	Introduction to Computers and Programming	D	Compulsory	2	2	0	4	3	32	32	0	0	61	125	5
CE 104	Geology for Civil Engineers	C	Compulsory	3	0	0	3	3	48	0	0	32	20	100	4
Semestral Total				**15**	**8**	**0**	**23**	**19**	**240**	**128**	**0**	**52**	**330**	**750**	**30**
SECOND YEAR															
Third Semester															
COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka	Semestral Lecture and studying hours						ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
MTH 201	Differential Equations	A	Compulsory	3	0	0	3	3	48	0	0	0	77	125	5
CE 223	Introduction to Construction Materials	B	Compulsory	3	0	2	5	4	48	0	32	45	50	175	7
CE 213	Mechanics of Materials I	B	Compulsory	2	2	0	4	3	32	32	10	0	101	175	7
MTH 205	Probability and Statistics for Engineers	A	Compulsory	2	2	0	4	3	32	32	0	0	61	125	5
CE 233	Engineering Mechanics II	B	Compulsory	2	2	0	4	3	32	32	0	0	86	150	6
Semestral Total				**12**	**6**	**2**	**20**	**16**	**192**	**96**	**42**	**45**	**375**	**750**	**30**
SECOND YEAR															
Fourth Semester															
COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka	Semestral Course and studying hours						ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
	*Elective	C	Elective	3	0	0	3	3	48	0	0	0	77	125	5
CE 214	Mechanics of Materials II	B	Compulsory	2	2	0	4	3	32	32	0	0	86	150	6
CE 240	Engineering Hydrology	B	Compulsory	2	2	0	4	3	32	32	0	36	0	100	4

CE 260	Structural Mechanics	B	Compulsory	3	2	0	5	4	48	32	0	20	50	150	6
CE 284	Surveying	C	Compulsory	2	2	0	4	3	32	32	0	36	25	125	5
	Non-technical elective	C	Elective	3	0	0	3	3	48	0	0	0	52	100	4
Semestral Total				**15**	**8**	**0**	**23**	**19**	**240**	**128**	**0**	**92**	**290**	**750**	**30**
THIRD YEAR															
Fifth Semester															

COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka	Semestral Lecture and studying hours						ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
CE 301	Summer Practise I	D	Compulsory	0	0	0	0	0	0	0	0	70	5	75	3
CE 311	Engineering Economics	C	Compulsory	2	2	0	4	3	32	32	0	0	61	125	5
CE 381	Principles of Transportation and Traffic Engineering	B	Compulsory	3	2	0	5	3	48	32	0	10	60	150	6
CE 395	Structural Analysis	B	Compulsory	3	0	2	5	4	48	0	32	30	40	150	6
CE 361	Soil Mechanics	B	Compulsory	3	1	1	5	4	48	16	16	20	25	125	5
CE 341	Fluid Mechanics	B	Compulsory	2	2	0	4	3	32	32	0	32	29	125	5
Semestral Total				**13**	**7**	**3**	**23**	**17**	**208**	**112**	**48**	**162**	**220**	**750**	**30**

THIRD YEAR															
Sixth Semester															

COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka	Semestral Course and studying hours						ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
CE 332	Reinforced Concrete Fundamentals	B	Compulsory	3	2	0	5	4	48	32	0	20	25	125	5
CE 322	Construction Engineering and Management	B	Compulsory	3	2	0	5	4	48	32	0	20	25	125	5
CE 382	Foundation Engineering	B	Compulsory	2	2	0	4	3	32	32	0	36	25	125	5
CE 326	Hydromechanics	B	Compulsory	3	2	0	5	4	48	32	0	20	25	125	5
CE 348	Fundamentals of Steel Design	B	Compulsory	2	2	0	4	3	32	32	0	36	25	125	5
CE 388	Graduation Project	E	Compulsory	0	0	0	0	0	16	59	0	0	50	125	5
CE 366	Final Comprehensive Exam	E	Compulsory	0	0	0	0	0	16	0	0	0	109	125	
Semestral Total				**13**	**10**	**0**	**23**	**18**	**240**	**219**	**0**	**132**	**284**	**875**	**30**

Graduate Teaching

1. Structural Engineering Curricula

FIRST YEAR									
First Semester									
COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka	ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	
CE 423	Project Planning	B	Compulsory	2	2	0	4	3	7.5
CE 435	Reinforced Concrete Structures	B	Compulsory	2	2	0	4	3	7.5
CE 548	Intermediate Structural Dynamics	B	Compulsory	2	2	0	4	3	7.5
CE XXX	Technical Elective	C	Elective	2	2	0	4	3	7.5
Semestral Total				**8**	**8**	**0**	**16**	**12**	**128**
Second Semester									
COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka	ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	
CE 442	Advanced Numerical Methods	A	Compulsory	2	2	0	4	3	7.5

CE 454	Advanced Construction Materials	B	Compulsory	2	0	2	4	3	7.5
CE 555	Earthquake Resistant Design of Structure	B	Compulsory	2	2	0	4	3	7.5
CE 562	Computer Application in Civil Engineering	B	Compulsory	2	0	2	4	3	7.5
Semestral Total				**8**	**4**	**4**	**8**	**12**	**30**

SECOND YEAR

Third Semester

COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka	ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	
CE 503	Research Methods	B	Compulsory	2	2	0	4	3	7.5
	Technical Elective	C	Elective	2	2	0	4	3	7.5
CE 507	Supervised Independent Study and Research	B	Compulsory	4	2	2	8	6	15
Semestral Total				**8**	**6**	**2**	**16**	**12**	**30**

Fourth Semester

COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka	ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	
CE 500	Master Thesis	E	Compulsory	0	0	0	0	0	30
Semestral Total				**0**	**0**	**0**	**0**	**0**	**30**

		Weekly Course Distribution				Epoka	ECTS		
	Electives	Theory	Pract.	Lab.	Total	Credits			
CE 584	Admixtures for Concrete	2	2	0	4	3	7,5		
CE 543	Advanced Concrete Technology	2	2	0	4	3	7,5		
CE 540	Advanced Materials Science	2	2	0	4	3	7,5		
CE 591	Advanced Structural Analysis	2	2	0	4	3	7,5		
CE 419	Building Construction Estimating	2	2	0	4	3	7,5		
CE 538	Composite Materials	2	2	0	4	3	7,5		

CE 437	Computational Fluid Dynamics	2	2	0	4	3	7,5		
CE 443	Construction Contracts	2	2	0	4	3	7,5		
CE 417	Construction Site Techniques	2	2	0	4	3	7,5		
CE 459	Durability of Concrete	2	0	2	4	3	7,5		
CE 484	Earthquake Disaster Mitigation	2	2	0	4	3	7,5		
CE 449	Economics of Sustainability	2	2	0	4	3	7,5		
CE 463	Fundamentals of River Engineering	2	2	0	4	3	7,5		
CE 451	Groundwater Engineering	2	2	0	4	3	7,5		
CE 478	Hydraulic Structures	2	2	0	4	3	7,5		
CE 464	Intermediate Fluid Mechanics	2	2	0	4	3	7,5		
CEN 436	Introduction to Remote Sensing for Earth Observation	2	2	0	4	3	7,5		
ARC H 451	Landscape Perspectives in DRM & FS	2	0	2	4	3	7,5		
CE 413	Legal Aspects In Construction Works	2	2	0	4	3	7,5		
CE 469	Life Cycle Assesment -Sustainable Construction	2	2	0	4	3	7,5		
CE 587	Masonry Structures	2	2	0	4	3	7,5		
CE 544	Materials Testing and Measurements	2	2	0	4	3	7,5		
CE 520	Modeling In Hydrology	2	2	0	4	3	7,5		
CE 416	Risk Management in Construction	2	2	0	4	3	7,5		
CE 455	River Engineering	2	2	0	4	3	7,5		
CE 533	Soil Improvement Techniques	2	0	2	4	3	7.5		
CE 532	Soil Structure Interaction	2	2	0	4	3	7.5		
CE 549	Special Concretes	2	0	2	4	3	7,5		

CE 452	Statistical Techniques In Hydrology	2	2	0	4	3	7,5		
CE 547	Supplementary Cementing Materials	2	2	0	4	3	7,5		
CE 526	Water Resources Engineering	2	2	0	4	3	7,5		
CE 584	Admixtures for Concrete	2	2	0	4	3	7,5		
CE 543	Advanced Concrete Technology	2	2	0	4	3	7,5		

2. Construction Management Curricula

COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka	ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	
CE 423	Project Planning	B	Compulsory	2	2	0	4	3	7.5
CE 435	Reinforced Concrete Structures	B	Compulsory	2	2	0	4	3	7.5
CE 419	Building Construction Estimateing	B	Compulsory	2	2	0	4	3	7.5
	Technical Elective	C	Elective	2	2	0	4	3	7.5
Semestral Total				**8**	**8**	**0**	**16**	**12**	**30**
Second Semester									
COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka	ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	
CE 442	Advanced Numerical Methods	A	Compulsory	2	2	0	4	3	7.5
CE 454	Advanced Construction Materials	B	Compulsory	2	0	2	4	3	7.5
CE 416	Risk Management in Construction	B	Compulsory	2	2	0	4	3	7.5
CE 562	Computer Application in Civil Engineering	B	Compulsory	2	0	2	4	3	7.5
Semestral Total				**8**	**4**	**4**	**16**	**12**	**30**
SECOND YEAR									
Third Semester									
COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka	ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	
CE 503	Research Methods	B	Compulsory	2	2	0	4	3	7.5
	Technical Elective	C	Elective	2	2	0	4	3	7.5
CE 507	Supervised Independent Study and Research	B	Compulsory	4	2	2	8	6	15

Semestral Total				**8**	**6**	**2**	**16**	**12**	**30**
Fourth Semester									
COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka	ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	
CE 500	Master Thesis	E	Compulsory	0	0	0	0	0	30
Semestral Total				0	0	0	0	0	30
		Weekly Course Distribution				Epoka	ECTS		
	Electives	Theory	Pract.	Lab.	Total	Credits			
CE 584	Admixtures for Concrete	2	2	0	4	3	7.5		
CE 543	Advanced Concrete Technology	2	2	0	4	3	7.5		
CE 540	Advanced Materials Science	2	2	0	4	3	7.5		
CE 591	Advanced Structural Analysis	2	2	0	4	3	7.5		
CE 538	Composite Materials	2	2	0	4				
CE 443	Construction Contracts	2	2	0	4				
CE 417	Construction Site Techniques	2				2	0	4	
CE 459	Durability of Concrete	2	0	2	4	3			
CE 484	Earthquake Disaster Mitigation	2	2	0	3	3	7,5		
CE 555	Earthquake Resistant Design of Structure	2	2	0	4	3	7,5		
CE 449	Economy of Sustainability in Construction	2	2	0	4	3	7,5		
CE 463	Fundamentals of River Engineering	2	2	0	4	3	7,5		
CE 476	Hydraulic Structures I	2	2	0	4	3	7,5		
CE 477	Hydraulic Structures II	2	2	0	4	3	7,5		
CE 548	Intermediate Structural Dynamics	2	2	0	4	3	7,5		
CEN 436	Introduction to Remote Sensing for Earth Observation	2	2	0	3	3	7,5		
ARC H 451	Landscape Perspectives in DRM & FS	2	0	2	4	3	7,5		
CE 413	Legal Aspects In Construction Works	2	2	0	4	3	7,5		
CE 469	Life Cycle Assesment-Sustainable Construction	2	2	0	4	3	7,5		

CE 587	Masonry Structures	2	2	0	4	3	7,5		
CE 544	Materials Testing and Measurements	2	2	0	4	3	7,5		
CE 455	River Engineering	2	2	0	4	3	7,5		
CE 473	River Hydraulics	2	2	0	4	3	7.5		
CE 533	Soil Improvement Techniques	2	0	2	4	3	7.5		
CE 532	Soil Structure Interaction	2	2	0	4	3	7.5		
CE 549	Special Concretes	2	0	2	4	3	7.5		
CE 452	Statistical Techniques in Hydrology	2	2	0	4	3	7.5		
CE 547	Supplementary Cementing Materials	2	2	0	4	3			
CE 523	Waste Water Treatment Plants	2	2	0	4	3	7,5		
CE 526	Water Resources Engineering	2	2	0	4	3	7,5		
CE 483	Water Supply System	2	2	0	4	3	7,5		
CE 584	Admixtures for Concrete	2	2	0	4	3	7,5		
CE 543	Advanced Concrete Technology	2	2	0	4	3	7,5		
CE 540	Advanced Materials Science	2	2	0	4	3	7,5		

3. Water Resources Profile Curricula:

COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka	ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	
CE 423	Project Planning	B	Compulsory	2	2	0	4	3	7.5
CE 435	Reinforced Concrete Structures	B	Compulsory	2	2	0	4	3	7.5
CE 452	Statistical Techniques in Hydrology	B	Compulsory	2	2	0	4	3	7.5
CE	Technical Elective	C	Elective	2	2	0	4	3	7.5
Semestral Total				**8**	**8**	**0**	**16**	**12**	**30**
Second Semester									
COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka	ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	

CE 442	Advanced Numerical Methods	A	Compulsory	2	2	0	4	3	7.5
CE 454	Advanced Construction Materials	B	Compulsory	2	0	2	4	3	7.5
CE 463	Fundamentals of River Engineering	B	Compulsory	2	2	0	4	3	7.5
CE 562	Computer Application in Civil Engineering	B	Compulsory	2	0	2	4	3	7.5
Semestral Total				**8**	**4**	**4**	**16**	**8**	**30**
SECOND YEAR									
Third Semester									
COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka	ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	
CE 503	Research Methods	B	Compulsory	2	2	0	4	3	7.5
CE	Technical Elective	C	Elective	2	2	0	4	3	7.5
CE 507	Supervised Independent Study and Research	B	Compulsory	4	2	2	8	6	15
Semestral Total				**8**	**6**	**2**	**16**	**12**	**30**
Fourth Semester									
COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka	ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	
CE 500	Master Thesis	E	Compulsory	0	0	0	0	0	30
Semestral Total				**0**	**0**	**0**	**0**	**0**	**30**
	Electives	Weekly Course Distribution				Epoka	ECTS		
		Theory	Pract.	Lab.	Total	Credits			
CE 584	Admixtures for Concrete	2	2	0	4	3			
CE 543	Advanced Concrete Technology	2	2	0	4	3	7.5		
CE 540	Advanced Materials Science	2	2	0	4	3	7.5		
CE 591	Advanced Structural Analysis	2	2	0	4	3	7.5		
CE 419	Building Construction Estimating	2	2	0	4	3	7.5		
CE 538	Composite Materials	2	2	0	4	3	7.5		
CE 525	Computational Fluid Dynamics	2	2	0	4	3	7.5		
CE 443	Construction Contracts	2	2	0	4	3	7.5		
CE 417	Construction Site Techniques	2	2	0	4	3	7.5		
CE 459	Durability of Concrete	2	0	2	4	3			
CE 484	Earthquake Disaster Mitigation	2	2	0	4	3			
CE 555	Earthquake Resistant Design of Structures	2				2	0	4	3

CE 449	Economics of Sustainability	2	2	0	4	3			
CE 463	Fundamentals of River Engineering	2	2	0	4	3	7,5		
CE 451	Groundwater Engineering	2	2	0	4	3	7,5		
CE 478	Hydraulic Structures	2	2	0	4	3	7,5		
CE 476	Hydraulic Structures I	2	2	0	4	3	7,5		
CE 477	Hydraulic Structures II	2	2	0	4	3	7,5		
CE 464	Intermediate Fluid Mechanics	2	2	0	4	3	7,5		
CE 548	Intermediate Structural Dynamics	2	2	0	4	3	7,5		
CEN 436	Introduction to Remote Sensing for Earth Observation	2	2	0	4	3	7,5		
ARC H 451	Landscape Perspectives in DRM & FS	2	0	2	4	3	7,5		
CE 413	Legal Aspects In Construction Works	2	2	0	4	3	7,5		
CE 469	Life-Cycle Assesment-Sustainable Construction	2	2	0	4	3	7,5		
CE 587	Masonry Structures	2	2	0	4	3	7,5		
CE 544	Materials Testing and Measurements	2	2	0	4	3	7,5		
CE 520	Modeling In Hydrology	2	2	0	4	3	7,5		
CE 416	Risk Management in Construction	2	2	0	4	3	7,5		
CE 455	River Engineering	2	2	0	4	3	7,5		
CE 473	River Hydraulics	2	2	0	4	3	7,5		
CE 533	Soil Improvement Techniques	2	0	2	4	3	7,5		
CE 532	Soil Structure Interaction	2	2	0	4	3	7,5		
CE 549	Special Concretes	2	0	2	4	3	7,5		
CE 547	Supplementary Cementing Materials	2	2	0	4	3	7,5		
CE 523	Waste Water Treatment Plants	2	2	0	4	3	7,5		
CE 526	Water Resources Engineering	2	2	0	4	3	7,5		
CE 483	Water Supply System	2	2	0	4	3	7,5		

4. Construction Materials Profile Curricula:

FIRST YEAR									
First Semester									
COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka	ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	
CE 423	Project Planning	B	Compulsory	2	2	0	4	3	7.5
CE 435	Reinforced Concrete Structures	B	Compulsory	2	2	0	4	3	7.5
CE 459	Durability of Concrete	B	Compulsory	2	0	2	4	3	7.5
CE	Technical Elective	C	Elective	2	2	0	4	3	7.5
Semestral Total				**8**	**6**	**2**	**16**	**12**	**30**
Second Semester									
COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka	ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	
CE 442	Advanced Numerical Methods	A	Compulsory	2	2	0	4	3	7.5
CE 454	Advanced Construction Materials	B	Compulsory	2	0	2	4	3	7.5
CE 555	Earthquake Resistant Design of Structure	B	Compulsory	2	2	0	4	3	7.5
CE 562	Computer Application in Civil Engineering	B	Compulsory	2	0	2	4	3	7.5
Semestral Total				**8**	**4**	**4**	**16**	**12**	**30**
SECOND YEAR									
Third Semester									
COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka	ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	
CE 503	Research Methods	B	Compulsory	2	2	0	4	3	7.5
	Technical Elective	C	Elective	2	2	0	4	3	7.5
CE 507	Supervised Independent Study and Research	B	Compulsory	4	2	2	8	6	15
Semestral Total				**8**	**6**	**2**	**16**	**12**	**30**
Fourth Semester									
COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka	ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	
CE 500	Master Thesis	E	Compulsory	0	0	0	0	0	30
Semestral Total				**0**	**0**	**0**	**0**	**0**	**30**
		Weekly Course Distribution				Epoka	ECTS		
	Electives	Theory	Pract.	Lab.	Total	Credits			
CE 584	Admixtures for Concrete	2	2	0	3	3	7,5		

CE 543	Advanced Concrete Technology	2	2	0	3	3	7,5		
CE 540	Advanced Materials Science	2	2	0	3	3	7,5		
CE 591	Advanced Structural Analysis	2	2	0	3	3	7,5		
CE 419	Building Construction Estimating	2	2	0	3	3	7,5		
CE 538	Composite Materials	2	2	0	3	3	7,5		
CE 437	Computational Fluid Dynamics	2	2	0	3	3	7,5		
CE 443	Construction Contracts	2	2	0	3	3	7,5		
CE 417	Construction Site Techniques	2	2	0	3	3	7,5		
CE 484	Earthquake Disaster Mitigation	2	2	0	3	3	7,5		
CE 449	Economics of Sustainability	2	2	0	3	3	7,5		
CE 463	Fundamentals of River Engineering	2	2	0	3	3	7,5		
CE 451	Groundwater Engineering	2	2	0	3	3	7,5		
CE 478	Hydraulic Structures	2	2	0	3	3	7,5		
CE 464	Intermediate Fluid Mechanics	2	2	0	3	3	7,5		
CE 548	Intermediate Structural Dynamics	2	2	0	3	3	7,5		
CEN 436	Introduction to Remote Sensing for Earth Observation	2	2	0	3	3	7,5		
ARC H 451	Landscape Perspectives in DRM & FS	2	0	2	3	3	7,5		
CE 413	Legal Aspects In Construction Works	2	2	0	3	3	7,5		
CE 469	Life-Cycle Assesment-Sustainable Construction	2	2	0	3	3	7,5		
CE 587	Masonry Structures	2	2	0	3	3	7,5		
CE 544	Materials Testing and Measurements	2	2	0	3	3	7,5		
CE 520	Modeling In Hydrology	2	2	0	3	3	7,5		
CE 416	Risk management in Construction	2	2	0	3	3	7,5		
CE 455	River Engineering	2	2	0	3	3	7,5		
CE 533	Soil Improvement Techniques	2	0	2	3	3	7.5		
CE 532	Soil Structure Interaction	2	2	0	3	3	7.5		
CE 549	Special Concretes	2	0	2	4	3	7,5		
CE 452	Statistical Techniques In Hydrology	2	2	0	4	3	7,5		
CE 547	Supplementary Cementing Materials	2	2	0	4	3	7,5		

CE 526	Water Resources Engineering	2	2	0	4	3	7,5		

5. Professional Master Curricula

COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka credits	ECTS
Code	Course Name			Theory	Pract.	Lab.	Total		
CE 423	Project Planning	A	Compulsory	2	2	0	4	3	7.5
CE 435	Reinforced Concrete Structures	B	Compulsory	2	2	0	4	3	7.5
CE 419	Building Construction Estimating	B	Compulsory	2	2	0	4	3	7.5
	Technical Elective	C	Elective	2	2	0	4	3	7.5
Semestral Total				**8**	**8**	**0**	**16**	**12**	**30**
Second Semester									
COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka credits	ECTS
Code	Course Name			Theory	Pract.	Lab.	Total		
CE 420	Term Project	E	Compulsory	1	4	0	5	3	7.5
CE 454	Advanced Construction Materials	B	Compulsory	2	2	0	4	3	7.5
CE 470	Professional Practice	D	Compulsory	1	4	0	5	2	7.5
	Elective	C	Elective	3	0	1	4	3	7.5
Semestral Total				**7**	**0**	**0**	**18**	**11**	**30**
List of Elective Courses									

Code	Course Name	Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka credits	ECTS
				Theory	Pract.	Lab.	Total		
	Electives								
CE 584	Admixtures for Concrete	2	2	0	4	CE 584	Admixtures for Concrete	3	7.5
CE 543	Advanced Concrete Technology	2	2	0	4	CE 543	Advanced Concrete Technology	3	7.5
CE 540	Advanced Materials Science	2	2	0	4	CE 540	Advanced Materials Science	3	7.5
CE 591	Advanced Structural Analysis	2	2	0	4	CE 591	Advanced Structural Analysis	3	7.5
CE 419	Building Construction Estimating	2	2	0	4	CE 419	Building Construction Estimating	3	7.5
CE 538	Composite Materials	2	2	0	4	CE 538	Composite Materials	3	7.5
CE 437	Computational Fluid Dynamics	2	2	0	4	CE 437	Computational Fluid Dynamics	3	7.5
CE 562	Computer Application in Civil Engineering	2	2	0	4	CE 562	Computer Application in Civil Engineering	3	7.5
CE 443	Construction Contracts	2	2	0	4	CE 443	Construction Contracts	3	7.5
CE 417	Construction Site Techniques	2	2	0	4	CE 417	Construction Site Techniques	3	7.5
CE 484	Earthquake Disaster Mitigation	2	2	0	4	CE 484	Earthquake Disaster Mitigation	3	7.5
CE 449	Economics of Sustainability	2	2	0	4	CE 449	Economics of Sustainability	3	7.5
CE 463	Fundamentals of River Engineering	2	2	0	4	CE 463	Fundamentals of River Engineering	3	7.5
CE 451	Groundwater Engineering	2	2	0	4	CE 451	Groundwater Engineering	3	7.5
CE 478	Hydraulic Structures	2	2	0	4	CE 478	Hydraulic Structures	3	7.5
CE 464	Intermediate Fluid Mechanics	2	2	0	4	CE 464	Intermediate Fluid Mechanics	3	7.5
CE 548	Intermediate Structural Dynamics	2	2	0	4	CE 548	Intermediate Structural Dynamics	3	7.5
CEN 436	Introduction to Remote Sensing for Earth Observation	2	2	0	4	CEN 436	Introduction to Remote Sensing for Earth Observation	3	7.5
ARCH 451	Landscape Perspectives in DRM & FS	2	0	2	4	ARCH 451	Landscape Perspectives in DRM & FS	3	7.5

CE 413	Legal Aspects In Construction Works	2	2	0	4	CE 413	Legal Aspects In Construction Works	3	7.5
CE 469	Life-Cycle Assesment-Sustainable Construction	2	2	0	4	CE 469	Life-Cycle Assesment-Sustainable Construction	3	7.5
CE 587	Masonry Structures	2	2	0	4	CE 587	Masonry Structures	3	7.5
CE 544	Materials Testing and Measurements	2	2	0	4	CE 544	Materials Testing and Measurements	3	7.5
CE 520	Modeling In Hydrology	2	2	0	4	CE 520	Modeling In Hydrology	3	7.5
CE 416	Risk management in Construction	2	2	0	4	CE 416	Risk management in Construction	3	7.5
CE 455	River Engineering	2	2	0	4	CE 455	River Engineering	3	7.5
CE 533	Soil Improvement Techniques	2	2	0	4	CE 533	Soil Improvement Techniques	3	7.5
CE 532	Soil Structure Interaction	2	2	0	4	CE 532	Soil Structure Interaction	3	7.5
CE 549	Special Concretes	2	2	0	4	CE 549	Special Concretes	3	7.5
CE 452	Statistical Techniques In Hydrology	2	2	0	4	CE 452	Statistical Techniques In Hydrology	3	7.5
CE 547	Supplementary Cementing Materials	2	2	0	4	CE 547	Supplementary Cementing Materials	3	7.5
CE 526	Water Resources Engineering	2	2	0	4	CE 526	Water Resources Engineering	3	7.5

6. Professional Master in “Disaster Risk Management and Fire Safety in Civil Engineering” Curricula:

COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka credits	ECTS
Code	Course Name			Theory	Pract.	Lab.	Total		
CE 431	Project Planning, Management and Coordination	A	Compulsory	2	2	0	4	3	7.5
CE 447	Structural Fire Safety	B	Compulsory	2	2	0	4	3	7.5
CE 473	Flood Risk Assessment	C	Compulsory	2	2	0	4	3	7.5
	Elective	C	Elective	2	2	0	4	3	7.5
Semestral Total				**8**	**8**	**0**	**16**	**12**	**30**
Second Semester									

COURSES		Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka credits	ECTS
Code	Course Name			Theory	Pract.	Lab.	Total		
CE 454	Risk Analysis in Decision-making Process	B	Compulsory	2	2	0	4	3	7.5
ARCH 428	Evaquation Calculation Modeling	B	Compulsory	2	2	0	4	3	7.5
CE 476	Supervised Independent Study	E	Compulsory	2	2	0	4	2	7.5
CE 470	Professional Practice	D	Compulsory	2	2	0	4	3	7.5
Semestral Total				**8**	**8**	**0**	**16**	**12**	**30**
List of Elective Courses									
Code	Course Name	Course Type	Compulsory /Elective	Weekly Course Distribution				Epoka credits	ECTS
				Theory	Pract.	Lab.	Total		
CE 584	Admixtures for Concrete	2	2	0	4	CE 584	4	3	7.5
CE 543	Advanced Concrete Technology	2	2	0	4	CE 543	4	3	7.5
CE 540	Advanced Materials Science	2	2	0	4	CE 540	4	3	7.5
CE 591	Advanced Structural Analysis	2	2	0	4	CE 591	4	3	7.5
CE 419	Building Construction Estimating	2	2	0	4	CE 419	4	3	7.5
CE 538	Composite Materials	2	2	0	4	CE 538	4	3	7.5
CE 437	Computational Fluid Dynamics	2	2	0	4	CE 437	4	3	7.5
CE 562	Computer Application in Civil Engineering	2	2	0	4	CE 562	4	3	7.5
CE 443	Construction Contracts	2	2	0	4	CE 443	4	3	7.5
CE 417	Construction Site Techniques	2	2	0	4	CE 417	4	3	7.5
CE 484	Earthquake Disaster Mitigation	2	2	0	4	CE 484	4	3	7.5
CE 449	Economics of Sustainability	2	2	0	4	CE 449	4	3	7.5
CE 463	Fundamentals of River Engineering	2	2	0	4	CE 463	4	3	7.5
CE 451	Groundwater Engineering	2	2	0	4	CE 451	4	3	7.5
CE 478	Hydraulic Structures	2	2	0	4	CE 478	4	3	7.5
CE 464	Intermediate Fluid Mechanics	2	2	0	4	CE 464	4	3	7.5
CE 548	Intermediate Structural Dynamics	2	2	0	4	CE 548	4	3	7.5
CEN 436	Introduction to Remote Sensing for Earth Observation	2	2	0	4	CEN 436	4	3	7.5
ARCH 451	Landscape Perspectives in DRM & FS	2	0	2	4	ARC H 451	4	3	7.5
CE 413	Legal Aspects In Construction Works	2	2	0	4	CE 413	4	3	7.5

CE 469	Life-Cycle Assesment-Sustainable Construction	2	2	0	4	CE 469	4	3	7.5
CE 587	Masonry Structures	2	2	0	4	CE 587	4	3	7.5
CE 544	Materials Testing and Measurements	2	2	0	4	CE 544	4	3	7.5
CE 520	Modeling In Hydrology	2	2	0	4	CE 520	4	3	7.5
CE 416	Risk management in Construction	2	2	0	4	CE 416	4	3	7.5
CE 455	River Engineering	2	2	0	4	CE 455	4	3	7.5
CE 533	Soil Improvement Techniques	2	2	0	4	CE 533	4	3	7.5
CE 532	Soil Structure Interaction	2	2	0	4	CE 532	4	3	7.5
CE 549	Special Concretes	2	2	0	4	CE 549	4	3	7.5
CE 452	Statistical Techniques In Hydrology	2	2	0	4	CE 452	4	3	7.5
CE 547	Supplementary Cementing Materials	2	2	0	4	CE 547	4	3	7.5
CE 526	Water Resources Engineering	2	2	0	4	CE 526	4	3	7.5

7. PhD Curricula:

Year I - First Semester		**T**	**P**	**C**	**ECTS**
CE 8xx	ELECTIVE COURSE	3	0	3	7.5
CE 8xx	ELECTIVE COURSE	3	0	3	7.5
CE 8xx	ELECTIVE COURSE	3	0	3	7.5
CE 8xx	ELECTIVE COURSE	3	0	3	7.5
Total:		**12**	**0**	**12**	**30**

Year I - Second Semester		**T**	**P**	**C**	**ECTS**
CE 8xx	ELECTIVE COURSE	3	0	3	7.5
CE 8xx	ELECTIVE COURSE	3	0	3	7.5
CE 8xx	ELECTIVE COURSE	3	0	3	7.5
CE 8xx	ELECTIVE COURSE	3	0	3	7.5
Total:		**12**	**0**	**12**	**30**

Year II+III		**T**	**P**	**C**	**ECTS**
CE 800	PhD Thesis	0	0	0	120
Total:		0	0	0	**120**

D. Teaching, Learning, Assessment & Research

Undergraduate Students' List of Graduation Project

1. *Bora Tufa,"* Properties of Seaweed Fiber-Reinforced Plaster*" Dr. Erion Luga*
2. *Dajana Baraj*, " Impacts of Seaweeds Fiber in Cement" , *Dr. Erion Luga*
3. *Denis Cërri,* " Usage of Seaweed As an Sustanable Alternative for Thermoinsulation", *Dr. Erion Luga*
4. *Diana Leka*, " Application of Pushover and Time History Analysis to an Old Moment Frame Building in Albania with SAP2000", *MSc. Marsed Leti*
5. *Dorian Kraja,* " Design and Analysis of a Four- Story Reinforced Concrete Structures", *Dr. Enea Mustafaraj*
6. *Henri Brunga,* " A Comparison Study between Pile and Jacketing Method for Foundations Reinforcement", *Msc. Margarita Dajko*
7. *Ilirjana Hajdarmataj,* " Automation of Civil Engineering Problems with Python Programming Language. Special Focus on Beam Deformation Analysis" , *MSc. Marsed Leti*
8. Jozefina Sterkaj, " Structural Design and Analysis of a 3-Storey Building", Dr. Enea Mustafaraj
9. *Klara Ferati,* " Application of Nonlinear Static And Dynamic Analysis to a Reinforced Concrete Building Designed in 1982", *MSc. Marsed Leti*
10. *Kleandro Gjoka,* " The Effect of Brick Dust/Ground Mortar Mixture As Partial Replacement of Portland Cement And Reuse of the Steel", *MSc. Margarita Dajko*
11. *Marvi Shkrepa,* " Project Management & Cost Estimation of Residential Building", *MSc. Margarita Dajko*
12. *Nertila Syri,* " Automation of Civil Engineering Problems with Python Programming Language. Special Focus on Beam Deformation Analysis", *MSc. Marsed Leti*
13. *Pranvera Progni,* " Performance Assessment of an Old Reinforced Concrete Building In Albania Using Pushover and Time History Analysis " , *MSc. Marsed Leti*
14. *Rafaelo Xhangolli*, " Application of o Practical Methodology From Land Surveying to a Road Design Using Modern Tools" , *MSc. Marsed Leti*

15. *Sara Ceno,* " A Practical Methodology on the Highway Design Using Fundamental Concepts of Surveying and Transportation Engineering " , *MSc. Marsed Leti*
16. *Sindi Krasta,* " Pushover Analysis Of a RC Framed Building Designed in 1984 As Per Albanian Codes of Practice ", *Assoc. Prof. Dr. Huseyin Bilgin*
17. *Klaudjo Kaloti,* " Design and Analysis of a Three-Story Reinforced Concrete Structure", *Dr. Enea Mustafaraj*

Graduate Students' List of Theses

1. *Denisa Shaba,"*Earthquake Resistant Design Of a Multistorey RC Building" *,Dr. Enea Mustafaraj*
2. *Griselda Haxhija*, " Seismic risk Assessment of Reinforced Concrete Building Using FEMA P-58 Methodology", *Assoc. Prof. Dr. Huseyin Bilgin*
3. *Dritan Bratko*, " River Basin Management and Flood Risk Mitigation", *Assoc. Prof. Dr. Mirjam Ndini*
4. *Kevin Zaçe, "* Improvement of Shear Resistance of Unreinforced Masonry (URM) Walls made of Recycled Clay Bricks*", Dr. Enea Mustafaraj*
5. *Kristi Latifi,* "Design of Reinforced Concrete Structures", *Dr. Enea Mustafaraj*
6. *Edvaldo Ipcari*, " Risk Analysis in Fixed Design -Build Construction Projects- a case Study in Albania", *Dr. Julinda Keçi*
7. *Eni Duzha,* " Influence of Soil Types and Importance Factors on the Seismic Response of RC Buildings", *Assoc. Prof. Dr. Huseyin Bilgin*
8. *Enkeleida Çela,* " A Case Study on Structural Assessments of Two School Buildings in Albania" *,Dr. Enea Mustafaraj*
9. *Jona Koçiu*, " Investigation on Water Treatment Plants: "Case of Rrogozhina Aquifer", *Dr. Erion Luga*

Research Areas and Research Groups

Research Area: Structural/Earthquake Engineering

The goal of our research group in structural/earthquake engineering is to improve the seismic resiliency of societies through improved engineering and management tools for critical infrastructure systems including reinforced concrete, masonry as well as steel structures. Graduates courses are available in static/dynamic analysis and structural design theory.

Failures of structures during severe earthquakes are responsible for losses and casualties in seismic regions around the world including our region. Most of the structural failures can be attributed to poorly detailed/constructed components of the buildings systems (e.g. columns, beam-column joints, masonry walls). Recent research has proven the effectiveness of various innovative strengthening techniques at enhancing the performance of such substandard components, it is still necessary to develop design guidelines that lead to more cost-effective solutions.

Potential MSc/PhD topics include assessment, retrofit/strengthening of Reinforced Concrete, steel and masonry structures as follows:

- Use of Fiber Reinforced Polymers (FRP) for strengthening,

- Use of hybrid strengthening solutions for rehabilitation,
- Testing techniques for seismic performance assessment,
- Seismic analysis and design of buildings equipped with energy dissipative devices,
- Vulnerability assessment and upgrading of existing infrastructure,
- Fragility based assessment of existing infrastructure,
- Performance based evaluation of the existing infrastructure,

Another research area is related with the stability and dynamics of the historical masonry buildings constructed during the Post-Byzantine period on massive Roman vaulted structures. Using the methods of Heyman's limit analysis approach, load bearing mechanism and collapse analysis of these structures will be investigated. Based on the findings, seismic safety of the theses monumental structures will be explored.

Team Memebers: Assoc. Prof. Hüseyin Bilgin, PhD. Enea Mustafaraj, PhD. Erion Luga. PhD (c) Mario Hysenlliu, PhD (c) Marsed Leti, Asisst. MSc. Armando Demaj.

Research area: Water Resources Engineering

This research area deals with research and practical applications of hydrology and hydraulics as an integral part of the civil engineering. Water is the key element and a valuable resource for human development which depends on the availability of water resources. It is of great importance a comprehensive understanding of the fundamental force of water to be capable to deal with its consequences—such as flooding—manage the increasing demands for water, managing the water in a sustainable way, and utilize hydraulic energy. Due to climate change impact, population growth

and increasing water demand, the importance of research on water issues is going to increase in the future. Hydrology and hydraulics are two of fundamental sciences providing the basic knowledge for the development and controlling of water resources.

Hydraulic structures for flow controls are important elements of application and their designs, involves the interaction between structure and flow. Engineering studies include the analysis of flows, the ways in which the water regime and the flow pattern are affected by the structure and the environment responds to these changes.

The most prominent hydraulic structures are dams for water storage. They are indispensable structures for the watershed-based development. The planning, design, construction and operation of dams are vital parts of a variety of water uses: water supply for domestic, irrigation and industrial uses; protection of life and property from flooding; hydro-electric energy generation and storage of large amounts of energy for economic growth, etc. But all these uses involve systems of other structures as well and all these elements comprise structural analysis, materials science and the technology of structures. The types of structures and their design have evolved, and new challenges come from applying new construction technologies and from the application of value engineering and probabilistic design to provide economically balanced solutions.

The research of hydraulic engineering group will contribute to these challenges not just to give an understanding of the processes but recommending effective measures for practical solutions.

Team Members: Assoc. Prof. Miriam Ndini, Assoc. Prof. Hüseyin Bilgin, PhD Enea Mustafaraj, PhD Erion Luga, PhD Julinda Keci.

3. Research Area: Sustainability in Civil Engineering

This research area deals with the contribution of civil engineering and related disciplines in the creation of a sustainable living environment. Sustainability in civil engineering means, performing construction and management activities without any reduction of resources or causing any harmful effect to the environment. In this context the Department of Civil Engineering at Epoka University is dedicated to work and contribute for building a better future for the next generations by conducting research on:

- **Assessing the structural integrity of civil engineering structures and develop retrofitting methods and techniques for a more secure built environment.**

  Old buildings, bridges or historical monuments are part of people's daily life. In many countries hundreds of casualties are reported because of lack of assessment and maintenance of these structures. For that reason, they need to be assessed for structural integrity and retrofitted in case of improper conditions.

- **Solutions related to the reuse of underused facilities or reuse of structural members of these facilities.**

  In Albania there are many industrial sites or buildings which for the moment are underused. On the other hand, many infrastructure projects cannot be implemented, or people cannot afford the cost of brand-new houses. These underused facilities may be totally or partially reused to construct low budget infrastructure or houses.

- **Recycling of industrial and demolition wastes in the production of construction materials.**

  The production of many construction materials is responsible for the release of high amounts of wastes and consumption of unbelievably large amounts of natural resources. On the other hand, industrial by products such as slag, fly ash, silica fume etc. or demolition wastes are becoming serious problems for occupying large areas of land and causing serious environmental problems, for that reason the reuse and recycling of these wastes has become an emergency for many countries including Albania. So, by developing efficient and sustainable techniques we aim to offer to our society a cleaner and more livable environment.

- **Development of innovative and high-performance materials for safer and more comfortable structures.**

  Traditional materials used in the construction offer many advantages to the construction industry, but beside these advantages there are also some deficiencies of these materials which need to be improved or sometimes even produce innovative materials to withstand better their conditions of service. The development of innovative and high-performance materials for safer and more comfortable environment rises as a necessity for a more sustainable living.

- **Integration of sustainability principles in the design and management of construction projects.**

  Construction projects involve activities such as: use of materials from various sources, machineries, demolition of existing structures, use of green fields, cutting down of trees etc. All of these processes affect the environment in different ways like generation of waste materials, emissions from vehicles, machineries, noise pollution due to use of heavy vehicles and construction machineries, consumption of natural resources etc. Sustainability assessment of construction projects is essential to the fact that it does not create any harmful effects on the living ecosystem while optimizing the cost of construction. In order to ensure the availability of resources for the future generations and build affordable and manageable structures, it is very important to integrate the sustainability principles in the design and management of construction projects.

Team Members: Assoc. Prof. Miriam Ndini, Assoc. Prof. Hüseyin Bilgin, PhD Enea Mustafaraj, PhD Erion Luga, PhD Julinda Keci, PhD (c) Marsed Leti

List of Publications

No	Name Surname	Scientific Publications and Academic Activities
1	Periku, Erion; Luga, Erion; Dushaj, Drilon; Sheperi, Paulin;	Cementitious Grout Method Application on Tunnel Rockbolts and its Effect on Bond and Load Carrying Capacity. A Real-Scale Pull Out Test on Fan River HPP Power Tunnels
2	Luga, Erion; Lamaj, Terens; Periku, Erion;	The effect of Elbasan GGBFS addition on different properties of cement mortars
3	Luga, Erion; Mustafaraj, Enea; Lika, Ervis;	Behavior of RC frames under quasi-static diagonal loads
4	Luga, Erion; Periku, Erion; Sheperi, Paulin;	The Effect of Concrete Sample Size in the Compressive Strength Value of Concrete
5	Dr. Enea Mustafaraj	Polypropylene reinforced mortar coating for improvement of unreinforced masonry (URM) shear resistance
6	Dr. Enea Mustafaraj	Improvement of flexural strength of reinforced concrete beams using CFRP wraps
7	Dr. Enea Mustafaraj	Structural Assessment of Mehmed Pasha Hammam in Prizren, Kosovo
8	Dr. Enea Mustafaraj	Physical–Mechanical and Mineralogical Properties of Fired Bricks of the Archaeological Site of Harran, Turkey

9	Assoc. Prof. Dr. Huseyin Bilgin	Influence of interventions on the seismic performance of URM buildings designed according to pre-modern codes
10	Assoc. Prof. Dr. Huseyin Bilgin	The effect of material strength and discontinuity in RC structures according to different site-specific design spectra
11	Assoc. Prof. Dr. Huseyin Bilgin	Model of Seismic Design Lateral Force Levels for the Existing Reinforced Concrete European Building Stock
12	Assoc. Prof. Dr. Huseyin Bilgin	Structural performance of URM school buildings during the 2019 Albania earthquakes
13	Assoc. Prof. Dr. Huseyin Bilgin	Influence of material properties on the seismic response of masonry buildings".
14	Assoc. Prof. Dr. Huseyin Bilgin	Comparison of near and far-fault ground motion effects on low and mid-rise masonry buildings
15	MSc. Marsed Leti	Structural performance of URM school buildings during the 2019 Albania earthquakes
16	Dr. Julinda Keçi	Towards a Dısaster Rısk Management Plan of Hıstorıcal Centers: Case Study of the Hıstorıcal Center of Gjırokastra
17	Dr. Julinda Keçi	Public-Private Partnerships in Albania: From the Legislative Provisions to Risk Management
18	Dr. Julinda Keçi	Disaster Risk Management in the Western Balkans: A comprehensive approach on technical and economic perspectives

19	Dr. Julinda Keçi	Menaxhimi i Riskut nga Katastrofat në Ballkanin Perëndimor: Një qasje gjithëpërfshirëse mbi aspektet teknike dhe ekonomike

Participation of Academic Staff in Academic Events

Projects

E. Support, Resources & Representation

Participation in Academic Events

Research Projects

(Write a paragraph for each project applied and/ or awarded highlighting the area of the project, members, targeted group, grant used, expected outcomes). Associate the text with at least one picture.

Industry Projects

(Write a paragraph for each project highlighting the area of the project, members, targeted group, grant used, expected outcomes). Associate the text with at least one picture.

Community Projects

(Write a paragraph for each project highlighting the area of the project, members, targeted group, grant used, expected outcomes). Associate the text with at least one picture.

Student Club Projects

1.

Student Best Success Stories

(Choose up to five best student success stories and write one to two paragraphs for each. Associate the text with a picture of the student)

Office Holders

The department would like to thank the following for their valuable contribution to teaching, administration and management over the past year:

Assoc. Prof. Dr. Miriam Ndini

Prof. Dr. Hűseyin Bilgin

Dr. Erion Luga

Dr. Enea Mustafaraj

Dr. Julinda Keçi

MSc. Marsed Leti

MSc. Margarita Dajko

Department Coordinator Amelia Bullari

Acknowledgements

In addition to the Office Holders listed above, the department would like to thank the following for their collaboration to make this department offer all the facilities needed for the students.

Department of Civil Engineering

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