COMPUTER ENGINEERING DEPARTMENT ACTIVITY REPORT 2016-2017

For submission to the Epoka University,
Faculty of Architecture and Engineering

Tirana, June 2017

Contents

1 INTRODUCTORY KNOWLEDGE, MISSION AND GOALS

1.1 GENERAL

Computer Engineering covers a wide range of engineering applications from hardware, software, networking, system administration, database managements systems, etc. Computer Engineering is distinguished as being one of the latest engineering disciplines. It is involved to all sciences, being able to take those all more forward from their current positions by computerization.

1.2 MISSION

The mission of the Department of Computer Engineering is to educate the students to gain an understanding of the fundamentals of science and engineering so that they can develop solutions to Computer Engineering problems and enhance their computing, engineering, and research skills. It is aimed to especially emphasize teamwork, independent and innovative thinking and leadership qualities. In particular, the Computer Engineering Program aims to:

- Train the students to have theoretical background in basic sciences and engineering and to be equipped with necessary technical skills,
- 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 team work, 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.
- Develop students' competency in reading, writing and oral communication,
- The vision of the Department of Computer Engineering is to be a department whose graduates are highly preferred in worldwide IT industry and to gain a leadership position in Albania and Balkans.

1.3 PROGRAM

Computer engineering program is based on three-year Bachelor Degrees. The first year of the program is mostly dedicated to the study of basic sciences and mathematics which provide the engineering fundamentals. The second and third year are mainly composed of basic engineering courses besides fundamental courses of computer engineering. Summer practice at the end of the second year and the courses at the last year aim to provide a Computer Engineering perspective to students.

Curriculum of the program includes elective courses, which give an opportunity to students to improve their professional skills according to their interests. Some courses are nontechnical and free elective courses; the remaining are computer engineering electives. The requirements for a Diploma in Computer Engineering include the completion of minimum of 180 ECTS credits of formal course work and 30 days of approved practical training.

1.4 JOB PPORTUNITIES

In the global industry, there is a strong demand for Computer Engineers particularly those who combine technical skills with good communication skills and team-work ability. Some but not all of the job opportunities can be summarized as follows:

- Working for companies such as banks, airline industries, government departments, consulting companies, and computer organizations that run large computer based systems, and firms specifying computer equipment for a certain application,
- Implementing data communication systems and Internet technologies,
- Designing and developing hardware components and interface cards for computer systems,
- Managing and working in high level software development projects,
- Maintaining and administering distributed databases and corporate local area networks.

1.5 Educational aims and objectives

The aim is to produce graduates who have the potential to become future leaders of this profession. In their careers our graduates will,

- Work productively as Computer Engineers, including supportive and leadership roles on multidisciplinary teams,
- Communicate effectively, recognize and incorporate societal needs and constraints in their professional endeavors, and practice their profession with high regard to legal and ethical responsibilities,
- Engage in life-long learning, such as graduate study, to remain current in their profession and be leaders in our technological society.

1.6 Program outcomes

CEN Outcomes (Program Competencies) according to ABET Criterion 3

"Computer engineering program must demonstrate that their graduates have: Program Competencies-

Program Learning Outcomes	
1	an ability to apply knowledge of mathematics, probability & statistics, computer science, and engineering as it applies to the fields of computer software and hardware,
2	an ability to design and construct a hardware and software system, component, or process to meet desired needs, within realistic constraints such as economic, environmental, social, political, ethical, health & safety, manufacturability, and sustainability,

3	an ability to function on multidisciplinary teams,
4	an ability to identify, formulate, and solve hardware and software problems using computer engineering principles,
5	an understanding of professional, legal, and ethical issues and responsibilities as it pertains to computer engineering,
6	an ability to effectively communicate technical information in speech, presentation, and in writing,
7	the broad education necessary to understand the impact of computing in a global, economic, environmental, and societal context,
8	a recognition of the need for an ability to engage in lifelong learning,
9	a knowledge of contemporary issues, and
10	an ability to use the techniques, skills, and modern hardware and software tools necessary for computer engineering practice.

1.7 Department academic staff

1.7.1 Full Time Department Members

	Title	*Name Surname*
1.	Asst. Prof. Dr.	Arban Uka
2.	Prof. Dr.	Betim Çiço
3.	Asst. Prof. Dr.	Endri Stoja
4.	Asst. Prof. Dr.	Elton Domnori
5.	Asst. Prof. Dr.	Julian Hoxha
6.	Asst. Prof. Dr	Enriketa Söğütlü
7.	MSc.	Florenc Skuka
8.	MSc.	İbrahim Mesecan
9.	MSc.	Igli Hakrama
10.	MSc.	Mukremin Ozkul
11.	MSc.	Albana Roci
12.	BA	Xhoena Polisi
13.	BA	Erdjana Diada

1.7.2 Adjunct Department Members

	Title	*Name Surname*
1.	Prof. Dr.	Agron Tato
2.	Assoc. Prof. Dr.	Indrit Enesi
3.	Asst. Prof. Dr.	Albana Halili
4.	Dr.	Blerina Zanaj
5.	Dr.	Besiana Çobani
6.	Dr.	Erind Bedalli
7.	Dr.	Irena Papa
8.	M.Sc.	Klaudio Peqini

9. M.Sc. Kristel Bozhiqi
10. M.Sc. Mustafa Üstüner
11. M.Sc. Iva Kertusha
12. M.Sc. Migena Ceyhan
13. M.Sc. Rrezart Bozo

1.8 Students

Table 1.1 Number of students at the undergraduate level (as of June, 2017)

FACULTY	DEPARTMENT	STUDENTS
Faculty of Architecture and Engineering	Computer Engineering	**271**

Table 1.2 Number of students registered at the graduate level (as of June, 2017)

FACULTY	PROGRAM	STUDENTS
Faculty of Architecture and Engineering - Department of Computer Engineering	Master of Science in Computer engineering	**13**
	Master of Science in Electronics and Communication Engineering	**4**
	Professional Master in Computer Engineering	**1**
	Total	**18**

Table 1.3 Number of Students per Each Study Program

Program	**1st year**	**2nd year**	**3rd year**
Bachelor in CEN	55	59	37

Program	**1st year**	**2nd year**	**3rd year**
Bachelor in ECE	48	29	25

2 Curricula and teaching activity

Students are accepted to 3-year bachelor education after completing their 12 years high school education. All of the course syllabuses were revised and updated according to Albanian Government regulations and ABET criterion.

2.1 Aims and objectives for study program

General

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Aims

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- Communicate effectively, recognize and incorporate societal needs and constraints in their professional endeavors, and practice their profession with high regard to legal and ethical responsibilities,
- Engage in life-long learning, such as graduate study, to remain current in their profession and be leaders in our technological society.

2.2 Bachelor in Computer Engineering.

First Year

First Semester

COURSES		Course Type	Compulsory /Elective	ECTS
Code	**Course Name**			
CEN 103	Introduction to Computer Engineering	B	Compulsory	4
CEN 111	Introduction to Algorithms & Programming	B	Compulsory	6
MTH 101	Calculus I	A	Compulsory	7
PHY 101	General Physics I	A	Compulsory	7
ENG 101	Development of R. & W. Skills In English I	E	Compulsory	6
Semestral Total				30

Second Semester

COURSES		Course Type	Compulsory /Elective	ECTS
Code	**Course Name**			
MTH 106	Discrete Mathematics	A	Compulsory	5
CEN 112	C & C++ Programming	B	Compulsory	7
MTH 102	Calculus II	A	Compulsory	7
PHY 102	General Physics II	A	Compulsory	6
ENG 102	Development of R. & W. Skills In English II	E	Compulsory	5
Semestral Total				30

Second Year

Third Semester

COURSES		Course Type	Compulsory /Elective	ECTS
Code	**Course Name**			
CEN 213	Object Oriented Programming	B	Compulsory	5
CEN 211	Engineering Economics	C	Compulsory	5
CEN 281	Electrical & Electronic Circuits	C	Compulsory	5
MTH 201	Differential Equations	C	Compulsory	5
MTH 205	Probability and Statistics for Engineers	A	Compulsory	5
XXX xxx	Non Technical Elective	D	Elective	5
Semestral Total				30

Fourth Semester

COURSES		Course Type	Compulsory /Elective	ECTS
Code	**Course Name**			
CEN 222	Web Technologies	B	Compulsory	5
CEN 252	Database Management Systems	B	Compulsory	5
CEN 282	Digital Design	B	Compulsory	5
CEN 254	Data Structures	B	Compulsory	5
MTH 204	Numerical Analysis	C	Compulsory	5
XXX xxx	Non Technical Elective	D	Elective	5
Semester Total				30

Non technical electives

COURSES		Course Type	Compulsory /Elective	ECTS
Code	**Course Name**			
BUS 103	INTRODUCTION TO BUSINESS	D	Elective	5
BUS 114	COMMUNICATION SKILLS	D	Elective	5
FL 201	TURKISH I	D	Elective	5
FL 202	TURKISH II	D	Elective	5
FL 203	GERMAN I	D	Elective	5
FL 204	GERMAN II	D	Elective	5
FL 207	FRENCH I	D	Elective	5
FL 208	FRENCH II	D	Elective	5

Third Year

Fifth Semester

COURSES		Course Type	Compulsory /Elective	ECTS
Code	**Course Name**			
CEN 300	Summer Practice	E	Compulsory	5
CEN 361	Computer Networks	B	Compulsory	5
CEN 303	Analysis of Algorithms	B	Compulsory	5
CEN 323	Web Programming	B	Compulsory	5
CEN 385	Computer Organization	B	Compulsory	5
CEN xxx	Technical Elective	B	Elective	5
Semester Total				30

Sixth Semester

COURSES		Course Type	Compulsory /Elective	ECTS
Code	**Course Name**			
CEN 306	Operating Systems	B	Compulsory	7
CEN 302	Software Engineering	B	Compulsory	6
CEN 372	Artificial Intelligence	B	Compulsory	6
CEN 390	Graduation Project	F	Compulsory	6
CEN 399	Final Comprehensive Exam	F	Compulsory	
CEN xxx	Technical Elective	B	Elective	5
Semester Total				30

Technical electives

COURSES		Course Type	Compulsory /Elective	ECTS
Code	**Course Name**			
CEN 304	Fundamentals of System Administration	B	Elective	5
CEN 313	Programming Languages	B	Elective	5
CEN 315	Parallel Programming	B	Elective	5
CEN 317	Simulation and Modeling	B	Elective	5
CEN 319	Introduction to Distributed Systems	B	Elective	5
CEN 344	Computer Graphics	B	Elective	5
CEN 377	Management Information Systems	B	Elective	5
CEN 378	Introduction to E-Business and E-Commerce	B	Elective	5

2.3 Master of Science in Computer Engineering

Students are accepted to Master of Science education after completing their Bachelor of Science education and must complete 120 ECTS course work load with one semester thesis to get this title.

First Year

First Semester

COURSES		Course Type	Compulsory /Elective	ECTS
Code	**Course Name**			
CEN 409	Research Methods	A	Compulsory	7.5

CEN xxx	Elective	B	Compulsory	7.5
CEN xxx	Elective	B	Elective	7.5
CEN xxx	Elective	B	Elective	7.5
Semestral Total				30
Second Semester				
COURSES				
Code	**Course Name**	**Course Type**	**Compulsory /Elective**	**ECTS**
CEN xxx	Elective	A	Compulsory	7.5
CEN xxx	Elective	B	Compulsory	7.5
CEN xxx	Elective	B	Elective	7.5
CEN xxx	Elective	D	Elective	7.5
Semestral Total				30
Second Year				
Third Semester				
COURSES				
Code	**Course Name**	**Course Type**	**Compulsory /Elective**	**ECTS**
CEN 593	Graduate Project	F	Compulsory	15
CEN xxx	Elective	B	Elective	7.5
CEN xxx	Elective	B	Elective	7.5
Semestral Total				30
Fourth Semester				
COURSES				
Code	**Course Name**	**Course Type**	**Compulsory /Elective**	**ECTS**
CEN 500	Thesis	F	Compulsory	30
Semestral Total				30

Elective Courses

Based on the experience acquired in the last years and the academic staff, the department offers five different fields of studies:

1. Computational Mathematics

2. Theory of Computation

3. Data Management

4. Network & Security

5. Bioinformatics

A student, in order to acquire a general knowledge in the Computer Engineering area, needs to take at least one course from each of the mentioned fields.

2.4 Professional Master in Computer Engineering

First Semester				
COURSES				
Code	**Course Name**	**Course Type**	**Compulsory /Elective**	**ECTS**
CEN xxx	Elective	B	Compulsory	7.5
CEN xxx	Elective	B	Elective	7.5
CEN xxx	Elective	B	Elective	7.5
CEN xxx	Elective	B	Elective	7.5
Semestral Total				30
Second Semester				
COURSES				
Code	**Course Name**	**Course Type**	**Compulsory /Elective**	**ECTS**
CEN 590	Term Project	F	Compulsory	7.5
CEN xxx	Elective	B	Elective	7.5
CEN xxx	Elective	B	Elective	7.5
CEN xxx	Elective	B	Elective	7.5
Semestral Total				30

Elective Courses

Based on the experience acquired in the last years and the academic staff, the department offers five different fields of studies:

1. Computational Mathematics

2. Theory of Computation
3. Data Management
4. Network & Security
5. Bioinformatics

A student, in order to acquire a general knowledge in the Computer Engineering area, needs to take at least one course from each of the mentioned fields.

2.5 Bachelor in Electronics and Digital Communication Engineering

First Year				
First Semester				
COURSES		**Course Type**	**Compulsory /Elective**	**ECTS**
Code	**Course Name**			
CHM 101	General Chemistry	A	Compulsory	6
ECE 105	Introduction to Algorithms and Programming	B	Compulsory	4
MTH 101	Calculus I	A	Compulsory	7
PHY 101	General Physics I	A	Compulsory	7
ENG 101	Development of Reading and Writing Skills in English I	E	Compulsory	6
Semestral Total				30
Second Semester				
COURSES		**Course Type**	**Compulsory /Elective**	**ECTS**
Code	**Course Name**			
MTH 106	Discrete Mathematics	C	Compulsory	5
ECE 112	C & C++ Programming	B	Compulsory	7
MTH 102	Calculus II	A	Compulsory	7
ECE 114	Basics of Electric Circuits	A	Compulsory	6
ENG 102	Development of Reading and Writing Skills in English II	E	Compulsory	5
Semestral Total				30

Second Year				
Third Semester				
COURSES		**Course Type**	**Compulsory /Elective**	**ECTS**
Code	**Course Name**			
CEN 213	Object Oriented Programming	B	Compulsory	5
ECE 252	Electromagnetic Field Theory	B	Compulsory	5
ECE 221	Electronic Circuits I & Measurements and Laboratory	B	Compulsory	5
MTH 201	Differential Equations	C	Compulsory	5
MTH 203	Probability and Statistics for Engineers	A	Compulsory	5
XXX xxx	Non Technical Elective	D	Elective	5
Semester Total				30
Fourth Semester				
COURSES		**Course Type**	**Compulsory /Elective**	**ECTS**
Code	**Course Name**			
CEN 222	Web Technologies	C	Compulsory	5
ECE 317	Signals and Systems	B	Compulsory	5
ECE 260	Electronic Circuits II	B	Compulsory	5
ECE 284	Logic Circuits and Laboratory	B	Compulsory	5
MTH 204	Numerical Analysis	C	Compulsory	5
XXX xxx	Non Technical Elective	D	Elective	5
Semester Total				30
Non technical electives				
COURSES		**Course Type**	**Compulsory /Elective**	**ECTS**
Code	**Course Name**			
BUS 103	INTRODUCTION TO BUSINESS	D	Elective	5
BUS 114	COMMUNICATION SKILLS	D	Elective	5
FL 201	TURKISH I	D	Elective	5
FL 202	TURKISH II	D	Elective	5
FL 203	GERMAN I	D	Elective	5
FL 204	GERMAN II	D	Elective	5
FL 207	FRENCH I	D	Elective	5
FL 208	FRENCH II	D	Elective	5

Third Year				
Fifth Semester				
COURSES		**Course Type**	**Compulsory /Elective**	**ECTS**
Code	**Course Name**			
ECE 300	Summer Practice	E	Compulsory	5
ECE385	Microcontrollers	B	Compulsory	5
CEN361	Computer Networks	B	Compulsory	5
ECE 341	Power Electronics	B	Compulsory	5
ECE325	Telecommunication Circuits	B	Compulsory	5
ECE xxx	Technical Elective	D	Elective	5
Semester Total				30
Sixth Semester				
COURSES		**Course Type**	**Compulsory /Elective**	**ECTS**
Code	**Course Name**			
ECE 382	Mobile Communication Systems	B	Compulsory	5
ECE 370	Television Technique	B	Compulsory	5
ECE xxx	Technical Elective	B	Elective	5
ECE xxx	Technical Elective	B	Elective	5
ECE xxx	Technical Elective	B	Elective	5
ECE 390	Graduation Project	F	Compulsory	
ECE 399	Final Comprehensive Exam	F	Compulsory	5
Semester Total				30
Technical electives				
COURSES		**Course Type**	**Compulsory /Elective**	**ECTS**
Code	**Course Name**			
ECE 311	COMMUNICATION THEORY	B	Elective	5
ECE 319	CIRCUIT THEORY	B	Elective	5
ECE 322	WEB TECHNOLOGIES	B	Elective	5
ECE 325	TELECOMMUNICATION CIRCUITS	B	Elective	5
ECE 328	MULTIMEDIA SIGNAL DISTRIBUTION	B	Elective	5
ECE 344	COMPUTER GRAPHICS	B	Elective	5

ECE 345	COMPUTER ANIMATION-II	B	Elective	5
ECE 349	DIGITAL PHOTOGRAPHY	B	Elective	5
ECE 352	ANTENNAS & PROPAGATION AND LABORATORY	B	Elective	5
ECE 354	MICROWAVES	B	Elective	5
ECE 362	INTRODUCTION TO OPTICAL FIBERS	B	Elective	5
ECE 365	DIGITAL DATA TRANSMISSION	B	Elective	5
ECE 377	DIGITAL SIGNAL PROCESSING	B	Elective	5
ECE 378	SATELLITE COMMUNICATIONS	B	Elective	5
ECE 384	MICROCONTROLLERS	B	Elective	5
ECE 386	FUNDAMENTALS OF AUDIO ENGINEERING	B	Elective	5

2.6 Master of Science in Electronics and Communication Engineering

Students are accepted to Master of Science education after completing their Bachelor of Science education and must complete 120 ECTS course work load with one semester thesis to get this title.

First Year				
First Semester				
COURSES		**Course Type**	**Compulsory /Elective**	**ECTS**
Code	**Course Name**			
CEN 409	Research Methods	A	Compulsory	7.5
ECE 512	Digital Communication Systems	B	Compulsory	7.5
ECE xxx	Elective	B	Elective	7.5
ECE xxx	Elective	B	Elective	7.5
Semestral Total				30
Second Semester				
COURSES		**Course Type**	**Compulsory /Elective**	**ECTS**
Code	**Course Name**			
CEN 545	Advanced Numerical Methods	A	Compulsory	7.5
ECE 520	Integrated Systems	B	Compulsory	7.5
ECE xxx	Elective	B	Elective	7.5
ECE xxx	Elective	D	Elective	7.5
Semestral Total				30

Second Year				
Third Semester				
COURSES		**Course Type**	**Compulsory /Elective**	**ECTS**
Code	**Course Name**			
ECE 590	Term Project	F	Compulsory	7.5
ECE xxx	Elective	B	Elective	7.5
ECE xxx	Elective	B	Elective	
ECE xxx	Elective	B	Elective	7.5
Semestral Total				30
Fourth Semester				
COURSES		**Course Type**	**Compulsory /Elective**	**ECTS**
Code	**Course Name**			
ECE 500	Thesis	F	Compulsory	30
Semestral Total				30

List of Elective courses:

Course Code	Course Name	T	P	C	ECTS
ECE 433	Introduction to Neural Networks	3	2	4	7.5
ECE 439	Electronics for Bioengineering Applications	3	2	4	7.5
ECE 445	Advanced Optical Communication	3	2	4	7.5
ECE 464	Automatic Control Systems	3	2	4	7.5
ECE 468	Computer Vision	3	2	4	7.5
ECE 472	Special Topics in Artificial Intelligence	3	2	4	7.5
ECE 478	Industrial Electronics	3	2	4	7.5
ECE 483	Computer Architecture	3	2	4	7.5
ECE 533	Advanced Antenna Theory	3	2	4	7.5
ECE 537	Advanced Topics in Mobile Cellular Communication Systems	3	2	4	7.5
ECE 541	Design of Embedded Systems	3	2	4	7.5

2.7 PhD in Computer Engineering

Year 1 - First Semester		
Code	**Course Name**	**ECTS**
CEN 8xx	Elective Course	7.5
CEN 8xx	Elective Course	7.5
CEN 8xx	Elective Course	7.5
CEN 8xx	Elective Course	7.5
Semester Total		30

Year 1 - Second Semester		
Code	**Course Name**	**ECTS**
CEN 8xx	Elective Course	7.5
CEN 8xx	Elective Course	7.5
CEN 8xx	Elective Course	7.5
CEN 8xx	Elective Course	7.5
Semester Total		30

Year 2 & Year 3		
Code	**Course Name**	**ECTS**
CEN 800	PhD. Thesis	120
Semester Total		120

Code	**Course Name**	**ECTS**
CEN 801	Special Topics in Software Engineering	7.5
CEN 802	Complex Systems	7.5
CEN 803	Software Project Management	7.5
CEN 804	Advanced Topics in Computer Engineering	7.5
CEN 805	Operating System Design	7.5
CEN 806	Distributed Systems	7.5
CEN 807	Object Oriented Software Engineering	7.5
CEN 809	Research Methods	7.5
CEN 811	Advanced Object Oriented Programming	7.5
CEN 813	Formal Languages & Compilers	7.5
CEN 814	Metaheuristics	7.5
CEN 815	Information Retrieval	7.5
CEN 816	Mobile Applications Programming	7.5

CEN 818	System Administration I	7.5
CEN 819	System Administration II	7.5
CEN 820	Theory of Computation	7.5
CEN 821	Web Engineering	7.5
CEN 823	XML and Web Services	7.5
CEN 825	E-Business and E-commerce	7.5
CEN 827	Directed Study I	7.5
CEN 828	Directed Study II	7.5
CEN 831	Information Security and Comp. Forensics	7.5
CEN 833	Advanced Simulation and Modelling	7.5
CEN 835	Advanced Math for Computer Science	7.5
CEN 839	Intro. to Nano-Science and Nano-Technology	7.5
CEN 843	Digital Image Processing	7.5
CEN 845	Advanced Numerical Methods	7.5
CEN 848	Programming Languages I	7.5
CEN 849	Programming Languages II	7.5
CEN 850	Programming Languages III	7.5
CEN 851	Speech Processing	7.5
CEN 852	Advanced Database Management Systems	7.5
CEN 853	Design and Analysis of Algorithms	7.5
CEN 855	Bioinformatics	7.5
CEN 856	Introduction to Cloud Computing	7.5
CEN 861	Network Programming	7.5
CEN 862	Network Security	7.5
CEN 863	Advanced Concepts in Computer Networks	7.5
CEN 864	Wireless Networks	7.5
CEN 865	Tissue Engineering	7.5
CEN 867	Advanced Algorithms and Data Structures	7.5
CEN 869	Theory of Computation	7.5
CEN 870	Cryptography	7.5
CEN 871	Data Mining	7.5
CEN 872	Special Topics in Artificial Intelligence	7.5
CEN 873	Artificial Neural Networks	7.5
CEN 874	Fuzzy Logic	7.5
CEN 875	Computer Vision	7.5
CEN 876	Management Information Systems	7.5
CEN 877	Nanomaterials	7.5
CEN 878	Machine Learning	7.5
CEN 879	Randomized Algorithms	7.5
CEN 881	Information Theory	7.5
CEN 883	Computer Architecture	7.5
CEN 884	Design of Embedded Systems	7.5

CEN 885	Parallel Computing	7.5
CEN 886	Advanced Computer Architecture	7.5
CEN 887	Advanced Topics in Computer Science	7.5
CEN 892	Knowledge Management	7.5

3 DEPARTMENT ACTIVITIES

3.1 Internal activities

Invited talk: Using scada data analysis in renewables: Diagnosing wind turbine problems

Dr. Klaus Vogstad from Norwegian University of Science and Technology gave a seminar to the students of Computer Engineering Department. He talked about the need to use scada data for the analysis of issues that can arise in the wind turbines. Many countries have started to use the wind as a source of energy and have invested considerably in wind turbine technology.

Prof. Mira Mezini talk on her personal experience and research

Professor Mira Mezini is lecturer of Computer Science at the Technical University of Darmstadt and serves as the Vice President. She gave a talk to the students of Computer Engineering and Electronics and Digital Communication Engineering in Epoka University. In a friendly environment she talked about the beginning of computer science in Albania, about her experience while working at prestigious institutions and about the opportunities that students of computer engineering have. She mentioned the way that the courses of computer science in a newly opened department were offered in the early eighties. After completing with excellent

results from the University of Tirana she joined the University of Siegen for her PhD studies. She advised the students to follow the new trends and get involved in research areas as the nature of computer engineering is such that is continuously developing. She explained that through challenging selfinvolvement with the research community she got early offers from universities of US. After a minimum record time of three years with positions at the Northeastern University (USA) and University of Siegen she joined with a permanent position the University of Darmstadt.

Computer Technologies Workshop

On April 21st, Computer Engineering Department organized Computer Technologies Workshop. The aim of the series of workshops is to offer to the students a glimpse into the research that is conducted in computer engineering. Prof. Betim Çiço opened the event. There were two main oral presentation by Dr. Arban Uka and M.Sc. Ibrahim Meşecan, that were later followed by poster presentations. Dr. Uka presented the mathematical background for pattern recognition with a focus on principal component analysis of large datasets. In the first part of his talk, Ibrahim then explained how scale-invariant feature transform (SIFT) is used in iris recognition. In the second part of the talk, he presented how the principle component analysis can be used in face recognition. Later, the students presented their work in the poster presentation session.

Pizza Seminar

The aim of these seminars is to have invited speakers to give talks and presentations to our students, including even informative sessions. The majority of the seminars will involve staff of Computer Engineering Department.

The first session was offered by three students from the third year of the Electronics and Digital Communication program. The topics of their presentations was on how to write a lab report, best practices of lab work and an introduction to LaTeX. Free pizza was served.

ICT Awards Albania

This year in ICT Award Albania 2016, Albana Roçi, Research Assistant in our department, was awarded the ICT Thesis of Year 2016. The title of her diploma thesis is Iris Recognition. During her master studies, she has been working with algorithms of Iris Recognition, which is one of the fields of Biometrics.

Anita Borg Scholarship 2017

Egla Hajdini, our student of third year in Computer Engineering Department is awarded the prestigious Google Anita Borg Memorial Scholarship. She is one of the 20 recipients from all Europe, Africa and Middle East. This scholarship is to further Dr. Anita Borg's vision of creating gender equality in the field of computer science, and to encourage and support women in tech to become active role models and leaders in the field. It is the first time a student studying in Albania, from an Albanian University gets this scholarship. She is also invited to attend the annual Woman Techmakers Scholars' Retreat in Google Office, London this June to connect with fellow scholars,Google mentors and participate in a number of workshops.

COST ICT1302

Dr. Elton Domnori participated in a Short Term Scientific Mission financed by COST Action IC1302 during the two week period February 26 - March 10.

4 Didactic activity

4.1 Course appointment for Fall Semester

The course appointment for the Fall Semester 2016-2017 for Computer Engineering:

Faculty of Architecture and Engineering											
2016/2017 Academic Year											
Fall Semester											
COMPUTER ENGINEERING											
CODE	COURSE NAME	Th	P	L	C	ECTS	Lecturer	Stud	Gr.	Year	Cl/E
MTH101	Calculus I	3	2	0	4	7	Erind Bedalli	60	1	I	C
ENG103	Dev. of Reading and Writing Skills in English I	3	0	0	3	4	Irena Papa	60	2	I	C
PHY101	General Physics I	3	2	0	4	7	Arban Uka	60	1	I	C
CEN103 F	Introduction to Computer Engineering	3	0	0	3	4	Mukremin Ozkul	10	1	I	C
CEN109	Introduction to Algorithms & Programming	3	0	2	4	7	Ibrahim Mesecan	60	1	I	C
CEN111F	Introduction to Algorithms & Programming	3	0	2	4	6	Ibrahim Mesecan	20	1	I	C
CEN105	Linear Algebra	3	0	0	3	5	Besiana Hamzallari	60	1	I	C
ENG101	Dev. of Reading and Writing Skills in English I	4	0	0	4	6	Irena Papa	20	2	I	C
MTH125	Basic Mathematics	2	1	0	3	4	Erind Bedalli	60	1	I	C
MTH201	Differential Equations	3	0	0	3	5	Erind Bedalli	60	1	II	C
CEN281	Electrical and Electronic Circuits	3	0	2	4	5	Betim Çiço	60	1	II	C
CEN211	Engineering Economics	3	0	0	3	5	Julinda Keçi	60	1	II	C
CEN213	Object Oriented Programming	3	0	2	4	5	Elton Domnori	60	1	II	C
MTH205	Probability and Statistics for Engineers	3	0	0	3	5	Julian Hoxha	60	1	II	C
XXX	*Non-Technical Elective*	3	0	0	3	5	*FEAS*	60	1	II	C
CEN303	Analysis of Algorithms	2	0	2	3	5	Ibrahim Mesecan	30	1	III	C
CEN361	Computer Networks	2	0	2	3	5	Julian Hoxha	30	1	III	C
CEN385	Computer Organization	3	0	2	4	5	Mukremin Ozkul	33	1	III	C
ECE 347	*(Elective)* Control Systems	3	0	0	3	5	Ali Osman Topal	30	1	III	E
ECE 216	*(Elective)* Digital Multimedia	3	0	0	4	5	Indrit Enesi	30	1	III	E
CEN300	Summer Practice	0	0	0	0	5	Elton Domnori	30	1	III	C
CEN323	Web Programming	2	0	2	3	5	Igli Hakrama	33	1	III	C
CEN409	Research Methods	3	2	0	4	7.5	Albana Halili	20	1	M.Sc I&II	C
CEN563	*(Elective)* Advanced Concepts in Computer	3	2	0	4	7.5	Indrit Enesi	20	1	M.Sc I&II	E
CEN552	*(Elective)* Advanced Database Management	3	2	0	4	7.5	Elton Domnori	20	1	M.Sc I&II	E
CEN583	*(Elective)* Advanced Computer Architecture	3	2	0	4	7.5	Betim Çiço	20	1	M.Sc I&II	E
CEN593	Graduate Project	1	9	0	6	15	Elton Domnori - Arban Uka	20	1	M.Sc II	C
CEN500	Thesis	0	0	0	0	30	Elton Domnori - Arban Uka - Betim	20	1	M.Sc II	C
CEN562	*(Elective)* Advanced Concepts in Computer	3	2	0	4	7.5	Indrit Enesi	20	1	PM	E
CEN552	*(Elective)* Advanced Database Management	3	2	0	4	7.5	Elton Domnori	20	1	PM	E
CEN409	Research Methods	3	2	0	4	7.5	Albana Halili	20	1	PM	E
CEN583	*(Elective)* Advanced Computer Architecture	3	2	0	4	7.5	Betim Çiço	20	1	PM	E

The course appointment for the Fall Semester 2016-2017 for Electronic and Digital Communication Engineering:

Faculty of Architecture and Engineering											
2016/2017 Academic Year											
Fall Semester											
CODE	**COURSE NAME**	**Th**	**P**	**L**	**C**	**ECTS**	**Lecturer**	**Stud**	**Gr.**	**Year**	**C/E**
ELECTRONICS AND DIGITAL COMMUNICATION ENGINEERING											
MTH101	Calculus I	3	2	0	4	7	Arban Uka - Erind Bedalli	30	1	I	C
ENG103	Dev. of Reading and Writing Skills in English I	3	0	0	3	4	Irena Papa	30	1	I	C
PHY101	General Physics I	3	2	0	4	7	Klaudio Peqini	30	1	I	C
ECE105	Introduction to Algorithms & Programming	3	0	2	4	7	Ibrahim Mesecan	30	1	I	C
MTH103	Linear Algebra	3	0	0	3	5	Besiana Hamzallari	50	1	I	C
ENG101	Dev. of Reading and Writing Skills in English I	4	0	0	4	6	Irena Papa	15	2	I	C
MTH201	Differential Equations	3	2	0	4	5	Agron Tato	30	1	II	C
ECE252	Electromagnetic Field Theory	3	0	0	3	5	Arban Uka	30	1	II	C
ECE221	Electronic Circuits I	3	0	2	4	5	Endri Stoja	40	1	II	C
CEN213	Object Oriented Programming	2	0	2	3	5	Ali Osman Topal	30	1	II	C
MTH203	Probability and Statistics for Engineers	3	0	0	3	5	Julian Hoxha	30	1	II	C
XXX	*Non-Technical Elective*	3	0	0	3	5	*FEAS*	30	1	II	C
CEN361	Computer Networks	3	0	2	4	5	Julian Hoxha	30	1	III	C
ECE 347	*(Elective)* Control System	2	2	0	3	5	Ali Osman Topal	25	1	III	E
ECE 216	*(Elective)* Digital Multimedia	2	2	0	3	5	Indrit Enesi	30	1	III	E
ECE385	Microcontrollers	3	2	0	4	5	Mukremin Ozkul	30	1	III	C
ECE341	Power Electronics	3	0	2	4	5	Betim Çiço	30	1	III	C
ECE300	Summer Practice	0	0	0	0	5	Endri Stoja	30	1	III	C
ECE325	Telecommunication Circuits	3	0	2	4	5	Endri Stoja	25	1	III	C
CEN583	Advanced Computer Architecture	3	2	0	4	7.5	Betim Çiço	20	1	M.Sc I	E
ECE512	Digital Communication Systems	3	2	0	4	7.5	Julian Hoxha	20	1	M.Sc I	E
CEN563	Advanced Concepts in Computer Networks	3	2	0	4	7.5	Indrit Enesi	20	1	M.Sc I	E
CEN409	Research Methods	3	2	0	4	7.5	Albana Halili	20	1	M.Sc I	C
ECE500	Thesis	0	0	0	0	30	Endri Stoja	1	1	M.Sc II	C

4.2 Course appointment for Spring Semester

The course appointment for the Spring Semester 2016-2017 for Computer Engineering:

Faculty of Architecture and Engineering											
2016/2017 Academic Year											
Fall Semester											
COMPUTER ENGINEERING											
CODE	COURSE NAME	Th	P	L	C	ECTS	Lecturer	Stud	Gr	Year	C/E
MTH101	Calculus I	3	2	0	4	7	Erind Bedalli	60	1	I	C
ENG103	Dev. of Reading and Writing Skills in English	3	0	0	3	4	Irena Papa	60	2	I	C
PHY101	General Physics I	3	2	0	4	7	Arban Uka	60	1	I	C
CEN103	Introduction to Computer Engineering	3	0	0	3	4	Mukremin Ozkul	10	1	I	C
CEN109	Introduction to Algorithms & Programming	3	0	2	4	7	Ibrahim Mesecan	60	1	I	C
CEN111	Introduction to Algorithms & Programming	3	0	2	4	6	Ibrahim Mesecan	20	1	I	C
CEN105	Linear Algebra	3	0	0	3	5	Besiana Hamzallari	60	1	I	C
ENG101	Dev. of Reading and Writing Skills in English	4	0	0	4	6	Irena Papa	20	2	I	C
MTH125	Basic Mathematics	2	1	0	3	4	Erind Bedalli	60	1	I	C
MTH201	Differential Equations	3	0	0	3	5	Erind Bedalli	60	1	II	C
CEN281	Electrical and Electronic Circuits	3	0	2	4	5	Betim Çiço	60	1	II	C
CEN211	Engineering Economics	3	0	0	3	5	Julinda Keçi	60	1	II	C
CEN213	Object Oriented Programming	3	0	2	4	5	Elton Domnori	60	1	II	C
MTH205	Probability and Statistics for Engineers	3	0	0	3	5	Julian Hoxha	60	1	II	C
XXX	*Non-Technical Elective*	3	0	0	3	5	*FEAS*	60	1	II	C
CEN303	Analysis of Algorithms	2	0	2	3	5	Ibrahim Mesecan	30	1	III	C
CEN361	Computer Networks	2	0	2	3	5	Julian Hoxha	30	1	III	C
CEN385	Computer Organization	3	0	2	4	5	Mukremin Ozkul	33	1	III	C
ECE 347	*(Elective)* Control Systems	3	0	0	3	5	Ali Osman Topal	30	1	III	E
ECE 216	*(Elective)* Digital Multimedia	3	0	0	4	5	Indrit Enesi	30	1	III	E
CEN300	Summer Practice	0	0	0	0	5	Elton Domnori	30	1	III	C
CEN323	Web Programming	2	0	2	3	5	Igli Hakrama	33	1	III	C
CEN409	Research Methods	3	2	0	4	7.5	Albana Halili	20	1	M.Sc I&II	C
CEN563	*(Elective)* Advanced Concepts in Computer	3	2	0	4	7.5	Indrit Enesi	20	1	M.Sc I&II	E
CEN552	*(Elective)* Advanced Database Management	3	2	0	4	7.5	Elton Domnori	20	1	M.Sc I&II	E
CEN583	*(Elective)* Advanced Computer Architecture	3	2	0	4	7.5	Betim Çiço	20	1	M.Sc I&II	E
CEN593	Graduate Project	1	9	0	6	15	Elton Domnori - Arban Uka	20	1	M.Sc II	C
CEN500	Thesis	0	0	0	0	30	Elton Domnori - Arban Uka - Betim	20	1	M.Sc II	C
CEN562	*(Elective)* Advanced Concepts in Computer	3	2	0	4	7.5	Indrit Enesi	20	1	PM	E
CEN552	*(Elective)* Advanced Database Management	3	2	0	4	7.5	Elton Domnori	20	1	PM	E
CEN409	Research Methods	3	2	0	4	7.5	Albana Halili	20	1	PM	E
CEN583	*(Elective)* Advanced Computer Architecture	3	2	0	4	7.5	Betim Çiço	20	1	PM	E

The course appointment for the Spring Semester 2016-2017 for Electronic and Digital Communication Engineering:

Faculty of Architecture and Engineering									
2016/2017 Academic Year									
Appointment of Courses for Spring Semester									
Electronics and Digital Communication Engineering									
CODE	COURSE NAME	T	P	L	C	ECTS	Lecturer	Gr.	Depar
CEN 110	C Programming	3	0	2	4	7	Florenc Skuka	1	ECE I
MTH 102	Calculus II	3	2	0	4	7	Erind Bedalli	1	ECE I
MTH 106	Discrete Mathematics	3	0	0	3	5	Erind Bedalli	1	ECE I
PHY 104	General Physics II	3	2	0	4	7	Klaudio Peqini	1	ECE I
ENG 104	Development of Reading and Writing Skills in English II	3	0	0	3	4	Enriketa Sogutlu	1	ECE I
ECE 112	C and C++ Programming (Failed students)	3	0	2	4	7	Florenc Skuka	1	ECE II
ECE 114	Basics of Electric Circuits (Failed students)	3	2	0	4	6	Mukremin Ozkul	1	ECE II
ENG 102	Development of Reading and Writing Skills in English II (Failed Student	4	0	0	4	5	Enriketa Sogutlu	1	ECE II
ECE 317	Signals and Systems	3	0	2	4	5	Julian Hoxha	1	ECE II
CEN 222	Web Techologies	2	0	2	3	5	Rrezart Bozo	1	ECE II
ECE 260	Electronic Circuits II	3	0	2	4	5	Endri Stoja	1	ECE II
ECE 284	Logic Circuits and Laboratory	3	0	2	4	5	Mukremin Ozkul	1	ECE II
MTH 20	Numerical Analysis	3	0	0	3	5	Arban Uka	1	ECE II
XXX	*Non-Technical Elective*	3	0	0	3	5	FEAS Staff	1	ECE II
ECE 300	Summer Practice	0	0	0	0	5	Endri Stoja	1	ECE III
ECE 382	Mobile Communication Systems	2	0	2	3	5	Blerina Zanaj	1	ECE III
ECE 370	Television Technique	3	0	0	3	5	Indrit Enesi	1	ECE III
ECE 352	*Technical Elective* Antennas and Propagation and Laboratory	3	0	0	3	5	Endri Stoja	1	ECE III
ECE 365	*Technical Elective* Digital Data Transmission	3	0	0	3	5	Julian Hoxha	1	ECE III
ECE 377	*Technical Elective* Digital Signal Processing	3	0	0	3	5	Ali Osman Topal	1	ECE III
ECE 355	*Technical Elective* Computer Architecture Principles	3	0	0	3	5	Betim Cico	1	ECE III
ECE 390	Graduation Project	1	4	0	3	6	Betim Cico - Endri Stoja - Julian Hoxha - Mukremin Oz	1	ECE III
ECE 399	Final Comprehensive Exam	1	4	0	3	6	Endri Stoja	1	ECE III
ECE 545	Advance Numerical Methods	3	2	0	4	7.5	Arban Uka	1	M.Sc
ECE 520	Integrated Systems	3	2	0	4	7.5	Betim Cico	1	M.Sc
CEN 462	*Technical Elective* Network Security	3	2	0	4	7.5	Indrit Enesi	1	M.Sc
ECE 407	*Technical Elective* Supervised Group Study and Research	3	2	0	4	7.5	Endri Stoja - Julian Hoxha	1	M.Sc
ECE 403	*Technical Elective* Information Theory and Coding	3	2	0	4	7.5	Julian Hoxha	1	M.Sc
ECE 426	Advanced Digital Data Transmission	3	2	0	4	7.5	Endri Stoja	1	M. Sc
ECE 533	Advanced Antenna Theory	3	2	0	4	7.5	Julian Hoxha	1	M. Sc
ECE 500	Thesis	0	0	0	0	30	Elton Domnori - Arban Uka	1	M. Sc

4.3 Publications

Below is the list of publications that the staff of Computer Engineering during 2016-2017 academic year:

1	**Julian Hoxha, Endri Stoja, Elton Domnori** and Gabriella Cincotti, "Multicarrier digital fractional Fourier transform for coherent optical communications", EUROCON2017, Ohrid (FYROM)
2	**Mukremin Ozkul, Elton Domnori**, "A Traffic Signal Control System through Anonymous Messages", IV2017 California (USA)
3	Migena Ceyhan, Zeynep Orhan, **Elton Domnori**, "e-Medical Test Recommendation System Based on the Analysis of Patients' Symptoms and Anamneses", CMBEBiH 2017, Sarajevo (BiH);
4	Migena Ceyhan, Zeynep Orhan, **Elton Domnori**, "Health service quality measurement from patient reviews in Turkish by opinion mining", CMBEBiH 2017, Sarajevo (BiH);
5	Andi Bejleri, Mira Mezini, Patrick Eugster, **Elton Domnori**, *"Cooperative Decoupled Processes"*, Software Quality Journal (in press);
6	**Endri Stoja, Jualian Hoxha, Elton Domnori**, Lara Pajewski, Fabrizio Frezza, *"Parametric Study of the Scattered Electromagnetic Field by Differently-Shaped Buried Objects in Various Scenarios"*, European Geosciences Union General Assembly 2017, Vienna (AT) (accepted);
7	O. Koc, **A. Roci, A. Uka**, Iris Recognition and a new approach in encoding. Journal of Natural and Technical Sciences, (1) 89-101, 2016.
8	O. Koc, **A. Uka**, A new Encoding of Iris Images Employing Eight Quantization Levels. Journal of Image and Graphics, 4(2), 2016.
9	O. Koc, **A. Roci, A. Uka**. Segmentation Improvement For The Poorly Segmented Iris Images, International Conference on Engineering and Natural Science (ICENS), Bosnia. ISBN: 978-605-83575-1-8, 2016
10	O. Koc, **A. Uka**. Iris Recognition using a New Metric. International Conference on Electrical and Electronics Engineering (ICEEE), Istanbul, April 2016.
11	**A. Uka**, E. Bilali, Flat and Stepped Surfaces Mimicking Nanoparticles, Journal of Natural and Technical Sciences, XXII (43), 131-143, 2017.

12	C. Dollinger, A. Ndreu-Halili, **A. Uka**, S. Singh, H. Sadam, T. Neuman, M. Rabineau, P. Lavalle, M. R. Dokmeci, A. Khademhosseini, A. M. Ghaemmaghami, N. E. Vrana. Controlling Incoming Macrophages to Implants: Responsiveness of Macrophages to Gelatin Micropatterns under M1/M2 Phenotype Defining Biochemical Stimulations. Advanced Biosystems, 1(4), 2017
13	**A. Uka**, **Xh. Polisi**, A. Halili, C. Dollinger, N. E. Vrana. Analysis of Cell Behavior On Micropatterned Surfaces By Image Processing Algorithms. 17th IEEE International Conference on Smart Technologies, EUROCON 2017, Ohrid
14	**A. Uka, A. Roci**, O. Koc Improved Segmentation Algorithm and Further Optimization for Iris Images. 17th IEEE International Conference on Smart Technologies, EUROCON 2017, Ohrid
15	S. Kacamak, **A. Uka**. Sound Steganography using Shamir Secret Sharing Scheme. 6th Mediterranean Conference on Embedded Computing (MECO), Bar, Montenegro, 2017
16	**I. Mesecan, A. Uka, E. Stoja, B. Cico**. Comparison of Histograms of Oriented Gradients and 3-row average subtraction (3RAS) using GprMax, 6th Mediterranean Conference on Embedded Computing (MECO), Bar, Montenegro, 2017.
17	**Igli Hakrama**, Neki Frasheri, A comparison between two simulations based on agent-based methods: NetLogo vs Jason, International Journal of Science, Innovation and New Technology (IJSINT), Issue 17, Nov. 2016, pp , ISSN:2223-2257
18	**Igli Hakrama**, Rezart Tabaku, Modelling and Implementation of a virtual warehouse through Jason and RMI, 4th International Conference on Advanced Technology & Science, Rome, Italy, Nov. 2016, pg. 32-28, ISBN: 978-605-9119-79-5
19	**Igli Hakrama**, Iris Kraja, The self-regulated model of a closed economy: An Agent-Based simulation model for experimental purposes, 7th International Conference of Information Systems and Technology Innovations: the New Paradigm for a Smarter Economy, Tirana, Albania, June 2016, pg. 12, ISBN: 978-9928-148-56-8

4.4 Scientific Research

The research group established by the department of Computer Engineering:

Group Name: **Biometrics and Image Analysis Lab (BIAL)**

Members of the group:

1. **Dr. Arban Uka (Chair)**
2. **M.Sc. Ibrahim Mesecan (Member)**
3. **M.Sc. Florenc Skuka (Member)**
4. **M.Sc. Albana Roci (Member)**
5. **BA. Xhoena Polisi (Member)**