EPOKA UNIVERSITY | Department of Computer Engineering

ANNUAL REPORT

1 September 2023 – 15 August 2024

Annual Report

1 September 2023 – 15 August 2024

Contents

A. Organization & Management

Introduction

Assoc. Prof. Dr. Arban Uka
Head of Department

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 fastest developing area and the most required in the job market. It is related to all sciences, being able to push them forward from their current status by providing automatic control, improved computational speed and better optimization.

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 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.
- 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.

Study programs offered by the Department

The Department of Computer Engineering offers undergraduate and postgraduate study programs in Computer Engineering, Electronics and Digital Communication Engineering and Software Engineering. The undergraduate programs are based on the three-year bachelor system and the students graduate with Bachelor's in Computer Engineering, Electronics and Digital Communication Engineering, and Software Engineering. The postgraduate study programs include Master of Science, Professional Master and PhD in Computer Engineering and Master of Science in Electronics and Communication Engineering.

B. Resources

Department Staff

Assoc. Prof. Dr. Arban UKA

Arban Uka – holds the PhD degree in Physics from University of Texas at Austin, United States of America, 2009. He has been awarded from the Holland Research School of Molecular Sciences (HRSMC) fellow, Leiden University and University of Amsterdam, Summer 2015. Has offered courses: Electromagnetic Waves, Electromagnetic Field Theory, Antennas and Propagation, Numerical Analysis in the Bachelor level; Advanced Numerical Methods and Digital Image Processing in the graduate level. His current interests include i) image acquisition using portable microscopy techniques such as digital in line holography, phase contrast microscopy, and lens-free microscopy, ii) image analysis using both intensity information and machine learning approaches, iii) pattern recognition with a focus on biometrics. He uses deep learning algorithms for medical image classification, cell detection, cell counting and cell segmentation. His research interest is based on: Image acquisitions, Point of Care Microscopy, Image Analysis, Computational Imaging, Deep Learning Techniques for Image Analysis. Some of the projects that Dr. Uka has been part are Horizon 2020: PANBioRA- Personalized And/or Generalized Integrated Biomaterial Risk Assessment, EPOKA University, Project coordinator, 01/2018 – ongoing. COST Project: MULTI-modal Imaging of Forensic Science Evidence - tools for Forensic Science (MULTIFORSEE), Epoka University, Project coordinator, 09/2017 – ongoing. COST Project: Biomaterials and Advanced Physical Techniques for Regenerative Cardiology (BIONECA), EPOKA University, Project coordinator, 09/2018 – ongoing. Currently, he holds the position of Head of the Computer Engineering Department and at the same time is full – time lecturer.

Prof. Dr. Betim ÇIÇO

Prof. Betim Çiço has been graduated as a distinguished student from Polytechnic University of Tirana in Electronic Engineering and 1983 he received his PhD degree in Nuclear Physics. In 1999 he has been awarded full professorship. He has been working in several institutions as below mentioned: 1971-1972, Engineer in Shijak Broadcasting. From 1972 -1998, Scientific Researcher in the Institute of Nuclear Physics in the field of nuclear electronics. 1972 - 1998 part time professor in PUT. From November 1998 -2012, full time Professor in Electronic Department at PUT, 10 years Head of Computer Engineering Section (1998 -2008) and 4 years Head of Computer Department (2008 2012). 2012- 2014 - Dean of the CST Faculty in SEEU, Tetovo, Macedonia. 2014- 2016 October full time Professor in Aleksander Xhuvani University, Elbasan, Albania. From October 2016 professor in EPOKA University (2009 - September, 2016 part-time professor in EPOKA University). During this period, Prof.Dr. ÇIÇO teaches different courses in bachelor, master and PhD study related to Electronic Systems, Digital Design, Computer Architecture, Advance Computer Architecture, Research Methodology, and Artificial Intelligence in PUT and as an invited professor in many Universities in Albania, Kosovo (Prishtina University) and Macedonia (SEEU University, Tetovo). Participation in many trainings, workshops, and scientific visits in China, Germany, France, United Kingdom, Turkey, Italy, Greece, etc. Member of more than 55 different Programmes Committee in Scientific Conferences. Supervisor of 20 PhD students. From 2007 - 121 papers in Proceedings of Conferences (IEEE, ACM, Springer Verlag, etc) and 44 papers in Scientific Journals. Member of Project Group, MoES, for the implementation of the Education Management Information System (EMIS) Component under the Transition Education Reform Project in Albania 1999 – 2001. National consultant of the World Bank in this Education Reform Project in Albania, financed by the World Bank.

Prof. Dr. Gëzim KARAPICI

Prof. Dr. Gezim KARAPICI has received his Bachelor's degree in Electrical Engineering at the University of Tirana, a Candidate of Engineering Sciences in Milan, Italy, and he obtained his PhD degree in 1990 from University of Tirana. He has been working in several institutions as below mentioned: Responsible of Electrical Sector Oil Processing Plant – Fier, from 1969 – 1971 Electrical Engineer, General Directorate of Power Systems (today Electrical Energy Corporation of Albania). 1971 – 1979 Assistant Pedagogue, Pedagogue at the University of Tirana, Faculty of

Mechanical & Electrical. During 1985 – 2003 Responsible of the Chair of Automatic Control, University of Tirana & Polytechnic University of Tirana, Faculty of Electrical Engineering", 1989 – 1991 Dean of the Faculty of Mechanical and Electrical Engineering at the University of Tirana, 1991 –Professor of Automatic Control and Power System Control, Polytechnic University of Tirana, Faculty of Electrical Engineering, 1991 – 1995 Rector, Polytechnic University of Tirana, 1995 – 1998 National Contact Point for Distance Education, Head of National Board for Distance Education.

Prof. Dr. Bekir Karlik

Professor Bekir Karlik earned his PhD from Yildiz Technical University in Istanbul, Turkey, "Myoelectric Control of Multifunctional Prosthesis Using Neural Networks." Since 2000, he has worked as a lecturer at various universities across different countries. In October 2023, he joined Epoka University as a full-time faculty member in the Computer Engineering department. At Epoka University, he teaches courses such as Artificial Intelligence, Machine Learning, Signals and Systems, and Introduction to Neural Networks.

Assoc. Prof. Dr. Dimitrios Karras

Dimitrios A. Karras received his Diploma and M.Sc. Degree in Electrical and Electronic Engineering from the National Technical University of Athens, Greece in 1985 and the Phd Degree in Electrical and Computer Engineering, from the National Technical University of Athens, Greece in 1995, with honours. From 1990 and up to 2004 he collaborated as visiting professor and researcher with several universities and research institutes in Greece. Since 2004, after his election, he has been with the Sterea Hellas Institute of Technology, Automation Dept., Greece as associate professor in Digital Systems and Signal Processing as well as with the Hellenic Open University, Dept. Informatics as a visiting professor in Communication Systems (the latter since 2002 and up to 2010). Since 10/2018 he has been with the Epoka University, Computer Engineering Department with a primary appointment as Lecturer.

Dr. Shkëlqim HAJRULLA

Shkëlqim Hajrulla is a lecturer of the Department of Computer Engineering since 2019. He has received his B.Sc degree in University of Tirana "Teacher of Math at High School Level`" and his M.Sc degree in Applied Mathematics at "University of Vlora" and his PhD in Water Wave Equation. Numerical Methods and Application- "University of Vlora". The courses he is teaching are: Numerical Analysis, Mathematics for Engineering, Calculus I, Differential Equations, Probability and Statistics, Basic Mathematics. His research experience is: Differential forms for water wave equations in Applied Sciences. Dr. Shkëlqim Hajrulla has been teaching from 2003.

Dr. Valmir BAME

Valmir Bame has received a B.A, M.Sc., and PhD degree in mathematics engineering from the Polytechnic University of Tirana. He is a lecturer in the department of Computer Engineering, EPOKA University starting from the 2021 academic year. The courses that he is teaching are as follows: Calculus, Linear Algebra. He has published different articles named: "Numerical Solution for Semi Linear Hyperbolic Differential Equations", "Numerical Solution for Semi Linear Hyperbolic Differential", "Numerical Solution for Semi Linear Hyperbolic Differential", "Optimizing of Damping Parameters to Suppress Oscillations in Flexible Structures".

Dr. Florenc SKUKA

Florenc Skuka received a B.A and M.Sc. degree in computer engineering from Polytechnic University of Tirana and Epoka University respectively. He is a Lecturer in the Department of Computer Engineering at Epoka University since 2016. And has been a member of the research faculty since 2012. He has published articles and presented papers in International Conference on Information Technology in Jordan. His research interests lie in the area of point cloud data processing, computer vision, image fusion. He has collaborated actively with researchers in several other disciplines of computer science.

M.Sc. Hashmet DURMISHI

Hashmet Durmish full time assistant lecturer in the Department of Computer Engineering since September 2020. He has finished his B.Sc. and M. Sc. Degrees in Tirana University, Natural Science Faculty 1991-1995. M.Sc. Durmishi has been teaching at several institutions such as: Physics teacher to grades 9-12 and Mathematics teacher to grades 12 between 1995-1998. Interpreter of English-Albanian and Albanian-English at "Children' Aid Direct" Foundation between April 1999 and November 1999. Interpreter to a "Solicitor Company" dealing with Political Asylum and Civil Issues in the town of Northampton, United Kingdom from 2000 till 2004. Physics teacher for "Turgut Ozal" Tirana and Durrësi Colleges and "Mehmet Akif"Boys and Girls Colleges teaching grades 9, 10, 11 and 12 from 2005 until August 2020. Assistant lecturer teaching Physics course at Epoka University from September 01 2020 and ongoing.

M. Sc Sabrina BEGAJ

Sabrina Begaj - Full time Assistant Lecturer in the Department of Computer Engineering. She holds a Master of Science degree in Computer Engineering from EPOKA University. Sabrina has been involved in education activities since 2017 and starting from 2020 she has been working as Assistant Lecturer in EPOKA University. Her research is focused on Deep Learning and Image Process

M.Sc Eriselda GOGA

Eriselda Goga full time assistant lecturer in the Department of Computer Engineering starting from 2021-2022 academic year. She received her master's degree as well as her bachelor's degree in Mathematics at the Faculty of Natural Sciences, University of Tirana. Her research interests are focused mainly on the numerical analysis of partial differential equations and in the theory of electromagnetic wave scattering.

M. Sc. Redjola MANAJ

Redjola Manaj - Full time Assistant Lecturer in the Department of Computer Engineering, Faculty of Architecture and Engineering, EPOKA University, starting from October 2021. Prior to that she has worked as Data Analyst and has been engaged as Assistant Lecturer in Department of

Mathematics, Faculty of Natural Sciences, University of Tirana since 2019. She has a Master of Science degree in Mathematics from University of Tirana, Faculty of Natural Sciences, and from July 2022 she is a PhD Student in Mathematics, where her research is focused in Elliptic Partial Differential Equations. The courses that she is teaching are: Calculus, Linear Algebra, Probability, Discrete Mathematics and Differential Equations.

M.Sc Ari GJERAZI

Ari Gjerazi – Full-time assistant lecturer in the Department of Computer Engineering, Faculty of Architecture and Engineering, EPOKA University, starting at academic year 2021-2022. Prior to that he was engaged as a Teaching Assistant from 2019-2021. He has a Bachelor of Science degree from EPOKA University and a Master of Science degree from the same institution. His work so far has covered teaching courses mostly focusing on Object Oriented Programming, Software Engineering and Database Management Systems. He has had minor involvement with the Panbiora and V-Tech projects.

M. Sc. Igli DRAÇI

Igli Draçi – is a full-time lecturer in the Department of Computer Engineering at EPOKA University where he has been since 2021. He has received his B. Sc. Degree in Business Informatics from University of Tirana and his M. Sc. Degree in Computer Engineering from EPOKA University, Tirane. His research experience and interests are mainly Data Structures & Algorithms and Medical Image Processing through Deep Learning.

M.Sc. Edlira Cani

M. Sc. Edlira Cani is a full-time assistant lecturer in the Department of Computer Engineering. She finished her bachelor's study in Business Informatics at Epoka University and from 2009- 2011 finished her master's degree in Computer Engineering at Epoka University. She has worked as a Functional implementer in Oracle E-Business Suite Financial Applications at the Intech+ shpk where she was responsible for Requirement analysis, process design, system configuration, testing, and user training. During 2012-2013 she worked as a Researcher in Systems Science, and during June 2013 she was a lector assistant in Data

Mining at the Faculty of Computer Engineering, Canadian Institute of Technology in Tirana. Also, Ms. Cani has worked as a Software Business Analyst at Infosoft Business Solution, Tirana where she was responsible for gathering and analysis for the sector in local tax administration and modeling of main processes using BMPN. During 2014-2017 she worked as a Software Functional Analyst at Communication Progress, Tirana and since October 2019 the assistant lecturer has been working at Epoka University at the Department of Computer Engineering at the Faculty of Architecture and Engineering where she is responsible for teaching courses in Software Engineering Analysis and Design, Web Development , Software Project Management.

M.Sc. Stela Lila

Stela Lila - Full time assistant lecturer in the Department of Computer Engineering, Faculty of Architecture and Engineering at Epoka University, starting from September 2023. High awarded in Electronics and Digital Communication Engineering at Bachelor level. Recently graduated with Erasmus Mundus Joint Master Degree in the field of Medical Imaging and Applications with high honors on June 2023. For 6 months she worked as Graduate Researcher at VICOROB Research Institute, Girona, Spain. The courses that she is teaching are: Signals and Systems, Computer Network, Artificial Intelligence, C-programming, Digital Signal Processing and Machine Learning.

Prof. Dr. Polikron DHOQINA

Assoc. Prof. Dr. Dhoqina is a part-time lecturer in the department of Computer Engineering at EPOKA University. From 1982- 1986- Second Level Integrated Diploma, University of Tirana, Faculty of Natural Sciences, 1990-1993- Postgraduate qualification, University of Tirana, Faculty of Natural Sciences , 1994-1997- Doctor of Science in Physics, University of Tirana, Faculty of Natural Sciences. In 2007 he was awarded with the title of Associate Professor. His working experience is as follows: Lecturer of Physics, University of Tirana, Faculty of Natural Sciences, Department of Physics, Lecturer of Physics University of Gjirokastra, Department of Physics.

Assoc.Prof.Dr. Blerina ZANAJ

Assoc. Prof. Dr. Zanaj is a part–time lecturer of the Computer Engineering Department. From 2002-2008-has finished her bachelor's degree and master's degree in Telecommunication Engineering - Polytechnic University of Tirana. In 2010-2013- he was awarded with the title of PhD in Electronics, Electrical and Telecommunication Engineering- Università Politecnicà delle Marche Dipartimento di Ingegneria dell'Informazione, Ancona, Italy. 2015-2016- Post DoctorateTraining. In 2020 she was awarded with the title of Associate professor. She works as a full-time professor in the Department of Mathematics and Informatics, Faculty of Economy and Agribusiness, Agricultural University of Tirana, Tirana, Albania since 2014.

Dr. Erind BEDALLI

Dr. Erind BEDALLI has received his B.Sc. degree in Computer Engineering from Hacettepe University, Ankara, and his M.Sc. degree in Informatics from University of Tirana. He completed his doctoral studies in the field of fuzzy logic and exploratory data analysis at the University of Tirana in 2014. His research experience and interests are mainly in the areas of: Fuzzy Logic, Data Mining, Mathematical Modelling, Artificial Intelligence, Expert Systems and Large-Scale Computing.

Dr. Rrezart Bozo

Dr. BOZO studied Computer Sciences, Informatics (2001-2006) at Faculty of Natural Sciences, University of Tirana. During 2021-2022 he completed PhD thesis "WEB Application for monitoring seismic activity in Albania", Faculty of Geology and Mine, Polytechnic University of Tirana.

From 2008 he works as scientific researcher in the Institute of Geosciences, Tirana. He is also the main lecturer for "Software Engineering" in Geoinformatics at Faculty of Geology and Mine.The research interests are focused on research and teaching at the Polytechnic University of Tirana.

Dr. Bozo conducts research in Information Technology, Seismology, Web Applications, Software Engineering.

M. Sc. Ervis Trupja

M.Sc. Ervis Trupja has received his B.Sc. degree in Math and Computer Engineering from the University of Tirana and his master of science degree in Math and Computer Engineering from the University of Tirana. He works as an instructor in dotNet: How? With more than 50 successful projects with 5 rating stars. Turpja is author of different courses of 20 courses on LinkedIn, 14 courses in Pluralsight, and 10 courses on Udemy. He joined EPOKA University as part-time assistant lecturer on Fall Semester 20232024 academic year.

M.Sc. Ernaso Kërbizi

Ernaso Kerbizi is the Director of Community College Harry Fultz and also a part-time lecturer at Epoka University Computer Networks course. He is passionate about informatics that is why he acts as a trainer and teacher for courses like Computer Architecture, Excel Advanced, SQL Server, Python, Java programming, Matlab, Oracle etc. Holding a bachelor degree in informatics and a master degree in Computer Science, Ernaso has been working as programmer and IT in different national and international companies.

M. Sc. Sindi DHIMA

M. Sc. Sindi DHIMA is a part-time assistant lecturer at the department of Computer Engineering who has received her bachelor's degree in Computer Engineering from University of Epoka, and

her master's degree in Computer Engineering study program from University of Epoka. Ms. Dhima is working as a Junior Software Developer at Communardo Software and from October 2021 to October 2022 she has been as a full stack developer trainee and item at Communardo Software , Tiranë. Also she has been as a part-time Teaching Assistant at the same department. She has been part of some conferences and seminars such as: -"Konferenca e dytë studentore e Fakultetit të Edukimit: "Studentët dhe kërkimi shkencor", AleksandërMoisiu,Durrës,Albania (certificateawarded) (The second student conference of Faculty of Education "Students and research methods", Seminaire regional "Milieu mediatique francophone a l'ecole " Sofia , November 24-25, 2016 (certificate awarded), Youthpass: Encouraging Minorities and Media, during 15/09/2018-23/09/2018, Pristina, Kosovo.

M. Sc. Violent ZANI

M. Sc. Violent ZANI has received his bachelor's degree in Computer Engineering at Epoka University and master's degree in Computer Engineering at the same University. He has been as a Web Developer Specialist in the Department of Development and Programming at the National Agency for Information Society. His experience as an IT Audit at the OSHEE Sh. A has helped him in the examination of the management controls in the Information Technology Infrastructure./ He has worked also as a software developer at V Zani shpk and as a chief technology officer at Instant. al, where his main responsibility was to develop the company's strategy for using technological resources.

M. Sc. Andia TAFA

M. Sc. Andia TAFA received her bachelor's degree in Computer Engineering at EPOKA University and from 2014-2016 she received a master's degree in the same study program at Epoka University. Her working experience are as follows: webmaster at RTSH - Radio Televizioni Shqiptar, Tiranë, she teaches the course Web Design in WordPress platform and HMTL/CSS technologies at Tirana Center of Technology. Her experience as a webmaster has help her on website building and maintenance, mainly in WordPress platform.

M. Sc. Jurgen CAMA

M. Sc. Jurgen CAMA has received his B. Sc. Degree in Telecommunication Engineering from Polytechnic University of Tirana, and his M. Sc. Degree in Telecommunication Engineering from Polytechnic University of Tirana. His working experiences are as follows: Founder at the NextGen Corp., also he has worked as a part-time lecturer at Harry Fultz Institute and as a lecturer for JAVA Programming at Crystal System. Computer programmer and Web Developer- Freelancer during 02/04/2012 – 03/2020, Telecommunications engineer at AlbaScan LTD during 30/11/2020 – 14/12/2021 and Telecommunications engineer at AL – COMM. Cama has worked as a General manager in retail store at Veto Balkans FILA during 09/09/2017 – 14/06/2018. He has done an internship as a Telecommunications engineering technician at Hellas Construction Inc. during 04/05/2017 – 04/06/2017. He participated in Multimedia Production and Post-Production conference at the VSB Technical University of Ostrava, Czech Republic during 01/09/2021 – 03/09/2021 and also in the ITU Seminar on RadioCommunication Matters for Europe in Tirana, Albania, 24/06/2019 – 27/06/2019.

M.Sc. Shkumbin FIDA

M.Sc. Shkumbin Fida received his B.Sc. degree in Communication Technologies and Computer Science from SEE University from 2001-2005. He worked as an IT Professional and Teaching Assistant at SEE University in the IT Department from 2005 to 2021. He offers Computer Networks and Operating Systems.

M. Sc. Grasjela QYLI

Grasjela Qyli is a part-time assistant lecturer at the Department of Computer Engineering, University of Tirana. She holds a bachelor's degree in Business Informatics and a master's degree in Information Systems. Alongside her studies, Grasjela has contributed to various projects including EU4 Innovation, Tirana Inc, and StartUp City 3, showcasing her commitment to innovation and entrepreneurship. Currently, she serves as an Associate Software Developer at Communardo Software, where she actively contributes to software engineering projects and provides guidance to new trainees. Grasjela participates in conferences and seminars such as Data Saturday in Munich, AtlasCamp, and REACT C'EST MAGIQUE, enhancing her professional

development and expanding her network. With her diverse background and ongoing dedication, she is poised to make significant contributions to academia and industry alike.

M.Sc. Saimir KOKONOZI

M. Sc. Saimir Kokonozi is a part-time assistant lecturer under the Department of Computer Engineering. He finished his bachelor's study in Telecommunication Engineering at the Polytechnic University of Tirana and from 2013 to 2015 finished his master's degree in Telecommunication Engineering at the Polytechnic University of Tirana. He has worked as a Laboratory assistant at the Polytechnic University at the Faculty of Information Technology. From 2015-2017 he worked as a Telecommunications Engineer at tb96 ltd in Tirana where his main responsibility was to design an implement microwave networks and RF transmitting sites. Since 2017 he worked as a radiofrequency planning and optimization engineer at Seven Consulting sh.p.k.

M.Sc. Edlir SPAHO

Experienced Computer Science Educator with a demonstrated history of working in the education management industry and IT services. Skilled in Research, Algorithms and Data Structures, Object-Oriented Programming, Networking, C++, Java, Python, Artificial Intelligence, Data Mining and Lecturing. Strong education professional with a Master of Science in Computer Engineering. Currently following my PhD with focus on implementation of AI to personalize online learning at Epoka University.

M. Sc. Olsi SHEHU

M.Sc. Olsi Shehu is a part-time assistant lecturer in the Department of Computer Engineering. He finished his bachelor's study in Multimedia & Digital Television at "Aleksander Moisiu" University of Durrës at the Faculty of Information and Technology. He graduated in a Master of Science in Informatics Engineering at the Metropolitan University of Tirana at the Faculty of Computer Sciences and IT and in 2022 he graduated in a Master of Science in Electronics Engineering at the Polytechnic University of Tirana at the Faculty of Information and

Technology. He worked as an assistant lecturer at the Metropolitan University of Tirana, as a part-time assistant lecturer at Aleksandër Moisiu" University, Durrës and since October 2023 he has been working as a part-time lecturer at Western Balkan University, May 2018 has worked a Senior Programmer at Pineal and since October 2022 is working at Beder University.

Administrative Staff

Ms. Fjona TOPÇIU

Fjona Topçiu is the Coordinator of the Department. She has finished her bachelor's in business informatics and master studies in Business Administration study program and since August 2020 works as Department Coordinator at Epoka University.

She exercises her duties in coordination with the Faculty Administrator and Head of Department. The Coordinator of the Department is responsible for management of the department activities with administrative character and incoming and outgoing correspondences.

Ms. Brikena HASA

Brikena Hasa is the Coordinator of the Department. She has finished her Bachelor and master studies in Banking and Finance study program and since October 2021 works as Department Coordinator at Epoka University.

She exercises her duties in coordination with the Faculty Administrator and Head of Department. The Coordinator of the Department is responsible for management of the department activities with administrative character and incoming and outgoing correspondences.

Finance

During this academic year the Department has been strongly supported both from internal and external funds to enrich its capacities.

- Miscellaneous revenues and financing for **BA in Computer Engineering** Study Program during the 2023-2024 academic year:

The revenues from:	Year 2023-2024
Local/Central government	
Non-Public Funds:	
Grants on research and contracts	30,784.96
Consultations, services	
Tution fees for and during studies	914,843.50
Sponsorships	
Training services (life-long qualifications)	
Donations, assurance activities, foundations etc.	
Commercial activities (cafeterias, fast-food, residential quarters)	
TOTAL	**945,628.46**

- Miscellaneous revenues and financing for **BA in Electronics and Communication Engineering** Study Program during the 2023-2024 academic year:

The revenues from:	Year 2023-2024
Local/Central government	
Non-Public Funds:	
Grants on research and contracts	7,792.69

Consultations, services	
Tution fees for and during studies	198,653.78
Sponsorships	
Training services (life-long qualifications)	
Donations, assurance activities, foundations etc.	
Commercial activities (cafeterias, fast-food, residential quarters)	
TOTAL	**206,446.47**

- Miscellaneous revenues and financing for **BA in Software Engineering** Study Program during the 2023-2024 academic year:

The revenues from:	Year 2023-2024
Local/Central government	
Non-Public Funds:	
Grants on research and contracts	29,627.63
Consultations, services	
Tution fees for and during studies	1,075,703.15
Sponsorships	
Training services (life-long qualifications)	
Donations, assurance activities, foundations etc.	
Commercial activities (cafeterias, fast-food, residential quarters)	
TOTAL	**1,105,330.78**

- Miscellaneous revenues and financing for **Msc in Computer Engineering** Study Program during the 2023-2024 academic year:

The revenues from:	Year 2023-2024
Local/Central government	
Non-Public Funds:	
Grants on research and contracts	6,326.73
Consultations, services	
Tution fees for and during studies	121,795.81
Sponsorships	
Training services (life-long qualifications)	
Donations, assurance activities, foundations etc.	
Commercial activities (cafeterias, fast-food, residential quarters)	
TOTAL	**128,122.54**

- Miscellaneous revenues and financing for **PM in Computer Engineering** Study Program during the 2023-2024 academic year:

The revenues from:	Year 2023-2024
Local/Central government	
Non-Public Funds:	
Grants on research and contracts	231.47
Consultations, services	
Tution fees for and during studies	1,999.86
Sponsorships	
Training services (life-long qualifications)	2,231.33

Donations, assurance activities, foundations etc.	
Commercial activities (cafeterias, fast-food, residential quarters)	
TOTAL	

- Miscellaneous revenues and financing for **Msc in Electronics and Communication Engineering** Study Program during the 2023-2024 academic year:

The revenues from:	Year 2023-2024
Local/Central government	
Non-Public Funds:	
Grants on research and contracts	2,391.81
Consultations, services	
Tution fees for and during studies	37,032.70
Sponsorships	
Training services (life-long qualifications)	
Donations, assurance activities, foundations etc.	
Commercial activities (cafeterias, fast-food, residential quarters)	
TOTAL	39,424.51

- Miscellaneous revenues and financing for **PhD in Computer Engineering** Study Program during the 2023-2024 academic year:

The revenues from:	Year 2023-2024
Local/Central government	
Non-Public Funds:	
Grants on research and contracts	308.62

Consultations, services	
Tution fees for and during studies	1,553.89
Sponsorships	
Training services (life-long qualifications)	
Donations, assurance activities, foundations etc.	
Commercial activities (cafeterias, fast-food, residential quarters)	
TOTAL	1,862.51

IT Resources, Physical Infrastructure and Library Resources

ICTC Office Services:
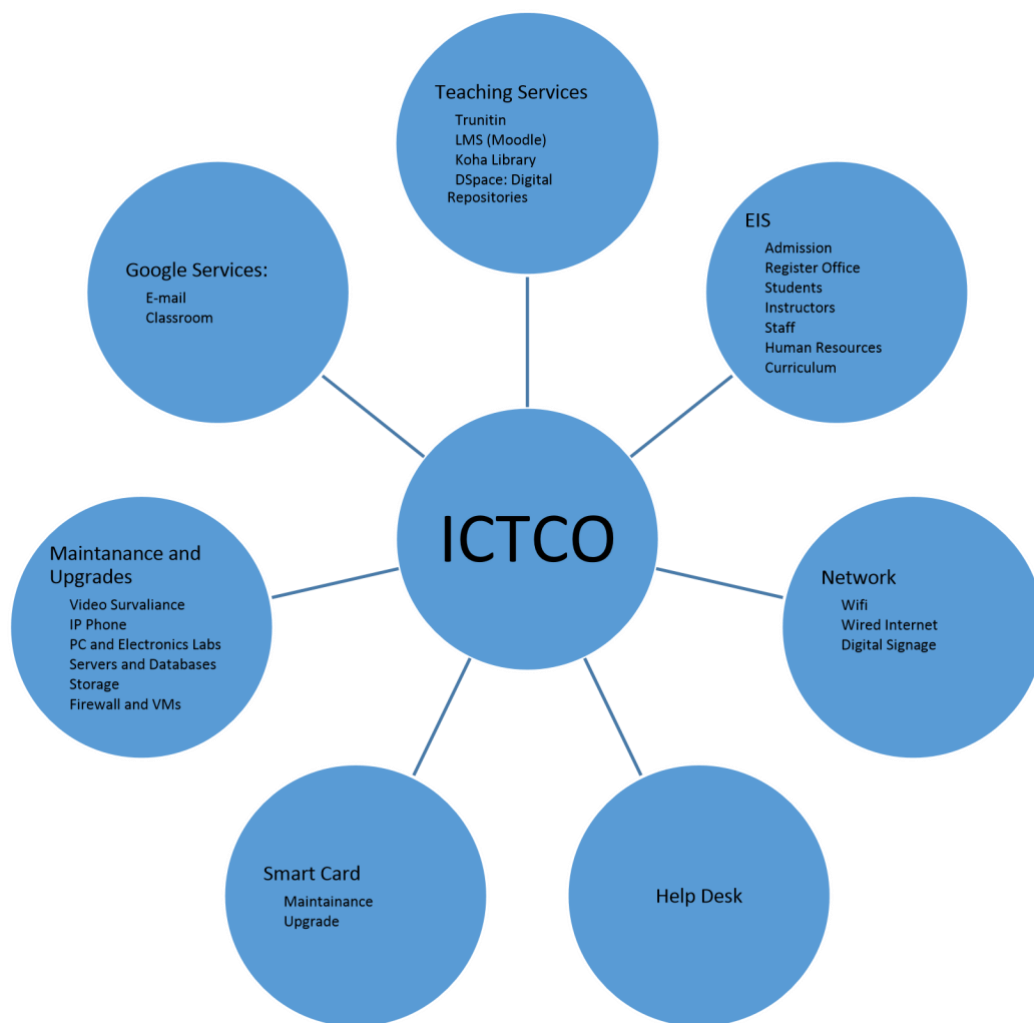
The Information and Communication Technologies Coordinating Office (ICTCO) provides informatics services needed in the University. It plans the informatics infrastructure of the University, provides its security and ensures the continuation of its functions. ICTCO works on the project for effective, legal and extensive usage of the informatics services for students and personnel.

The Information and Communication Technologies Coordinating Office (ICTCO) provides:

Teaching Services:

- **Turnitin** software helps you to understand and avoid plagiarism and develop your understanding of how to cite sources as part of an academic argument. ICTC office manages the users and train the staff about how to use turnitin.

- **Learning Management System (LMS)** – A service based on Moodle offered for students and instructors in order to access, coordinate and organize course materials online. Students and instructor can login on LMS using the provided official email account.

- **Library Automation System (Koha) -** Koha is an open-source Integrated Library System in use today by hundreds of libraries worldwide. Koha is web based, so there is no software to install on desktop computers. Users can check the books online and reserve them via web. Its features are more than enough to manage the Epoka Library effectively and efficiently.

- **DSpace** – The institutional repository of Epoka University: DSpace is an open source repository software package typically used for creating open access repositories for scholarly and/or published digital content. The proceedings of the conferences which are organized by Epoka University can be accessed from this repository. Epoka University is the only university who has digital repository in Albania (http://repositories.webometrics.info/en/Europe/Albania). We also provide services to other international journals to publish their publications (http://dspace.epoka.edu.al/handle/1/1378) in our digital repository.

Google Services:

- **Webmail (Google account)** – Epoka University is using Google Apps for Education services and all students and academic and administrative staff are provided with an email address under epoka.edu.al domain which is a Google account. Beside official communication which is done through this email address, this account can be used for authentication to other online systems offered by university.

- **Google Classroom** – A more interactive service offered by Google as part of Google Apps for education in order to access, coordinate and organize course materials on cloud. By

using Google Classroom, course materials can be integrated with other Google services where assigned users can collaborate. Students and instructors can access this service using the provided account.

Education Information System (Curriculum) – a website containing information related to study programs, curriculum and course syllabus.

Smart Card: All students and staff are provided with Smart Card identification cards. The Smart Card is put as an e-ID application at three buildings, two PC labs, one Electronics Lab, and campus gate entry turnstiles and barriers. The e-wallet application is active for staff but has not started yet for students.

Help Desk: ICTCO is also responsible for the maintenance of personnel and PC Lab computers in respect to software and hardware. Its staff monitors the personal computers within the frame of distribution of duty and authority and brings the issues to a conclusion. At the same time, ICTCO plans servers and cabling services of the University. Staff can open ticket via help.epoka.edu.al for their ICTCO related problems and follow the process from here. You can share your opinions on every subject related to information technologies and informatics with help@epoka.edu.al and you can also write your complaints and suggestions for a better campus life.

Software Opportunities

Epoka University has a subscription of Microsoft Program which is called DreamSpark. It supports technical education by providing access to Microsoft software for learning, teaching and research purposes. Epoka family members can download software through www.dramspark.com website at no cost. Epoka University also provides Office 365 accounts to all staffs and students which includes all office applications for free.

Network

Wireless: Epoka University provides wireless internet connection to all Epoka members in the campus. As ICTCO, we ensure that the wireless signal is strong and covers everywhere in campus.

Wired: Besides wireless, there are three PC labs, one Civil Engineering lab, one Electronics lab,

one PhD study room, and library where PCs serve students and staffs with wired internet. In the Epoka Library and one of the classroom, there are plug and use stations next to each table where students and staff can use for wired internet and electricity for their laptops.

Digital Signage: There are four TVs in the campus, they are used to inform Epoka members about latest news and announcements.

Epoka Interactive Systems (EIS)

Recognizing the needs of campus community, Epoka has made a strategic decision to replace its aging, cumbersome, and vendor-supported student, instructors, and staff systems with a modern, nimble and effective internally built system that includes admissions, enrollment, registration, financial aid, student, instructor, and staff accounts, and advising in one platform.

EIS is developed by ICTCO at Epoka University. From the user interface, EIS is an online interactive system where users can log in using the provided official email account. It is a modular system organized by roles and respective units at the university and the information is stored in a centralized database. All users have access to their personal information, can update general details and CV and they can manage job related tasks and activities according to their role and job position.

- **Students:** Students in their profile can access their personal information and information related to their study program. Course registration is done through the system and after that, students can view the ongoing academic activity of the registered courses during the semester. They can check attendance, exam dates, interim grades and final grades. Also in the system, they can access the program curriculum, transcript, grade calculation, weekly schedule, requests and notifications. The EIS prompts students when they are in the "warning zone" for financial or academic issues. It empowers students to create course plans to ensure timely graduation.

- **Instructors:** Academic staff including full-time and part-time lecturers, can have access to their courses assigned in the current semester and can also view previously assigned courses. Lecturers can update the syllabus, complete student attendance, assign and finalize grades. Advisor lecturers can have access to academic information of the students assigned for advisory and they can approve student course registration.

- **Coordinators:** The opening of courses according to course appointment in each semester is done by department coordinators and approved by faculty coordinators. Coordinators can monitor the academic activity of the lecturers under respective department.

- **Admissions and Registrar's Office:** Admissions Office enters all pre-registered student information and assigns scholarships. After the student has completed the registration, all the related information entered by Admissions office, is managed by Registrar's office.

- **Finance:** Finance office can manage and follow up all student financial information related to tuition fees and scholarship.

- **Human Resources:** Human resources office can manage all staff information data and assigns roles and job position for each staff.

- **Curriculum:** a website containing information related to study programs, curriculum and course syllabus.

All users have access to their personalized reports according to their roles and respective units. Faculties and units are liberated from tedious manual tasks. EIS supplies them with new and most updated information that will empower them to make informed decisions based on data.

EIS can be continuously updated with new modules according to the university needs. EIS can be accessed via: https:// eis.epoka.edu.al and users can log-in by their Epoka Mail account credentials.

Measurable indicators:

Number of PCs for students	217
Number of PC furnished labs for students	9
Number of PCs for academic staff	88
Number of PCs for administration	53
Number of printers	19
Number of photocopying machines	19
Number of head projectors	1
Number of video-projectors	30
Number of scanners	19
Number of TV Screen	10

PHYSICAL INFRASTRUCTURE

Epoka University is located on the Tirana-Rinas road, on the 12th kilometer. The campus extends over a total area of 67,000 m2. The 2019-2020 academic year is being conducted regularly in the premises of two buildings with a total area of 14352 m2.

The E-building has a modern infrastructure and a central heating and cooling system. The classrooms are equipped with video projectors and smart boards that enable the normal conduct of the learning process.

On September 2013, the construction of A-Buiding the "Cultural Social Object of Epoka University" was completed. In addition to classes, there are plenty of recreational facilities for students such as cafeterias, libraries, Wi-Fi, facilities for the Student Council and student clubs, sports facilities, etc. Below are shown current picture of the building.

On October 2021, the reconstruction of "D-Buiding" was completed. In addition to classrooms, offices and lab, there are plenty of recreational facilities for students such as cafeterias, Wi-Fi, leisure facilities etc. There are also 11 staff offices and a meeting room. Below are shown current picture of the building.

Measurable indicators:

☑ Premises of the Faculty

Premises for the Faculties (FAE)	Quantity	Surface (m²)
Auditoria/Classrooms for lectures	7	955.9
Classrooms for seminars	9	871.6
Premises for promotion activities	1	128
Classrooms for course/professional practice	5	496.6
Laboratories for courses	5	496.6
Informatics laboratories	4	218.7
Internet Room	4	218.7
Library Hall	1	400
Premises for photocopying, bookshop etc.	1	33.6
Student information office	2	71
Corridors/halls	12	1426.4
Sports premises	4	2100
Premises for service to third parties	1	56
Restrooms (WC) for students	20	138.5
Total Surface		7611.6
Ratio m²/students	**7611.6 m2 / 1384 std = 5.5 m2/std**	

Premises for personnel:	Quantity	Surface
Offices for the Dean/Vice-Dean	1	32
Office for the Administrator	1	22.5
Office for Vice Rector	1	31.5
Offices for the Department Coordinators	1	60.8
Offices for departments/research centres	4	36.2
Offices for the academic personnel	14	347.2
Office for the Finance Office	2	37
Office for the Internal Quality Assurance Unit	1	13
Meeting rooms	2	27.5
Premises for service personnel	8	143
Premises for the activities of the Student Council	1	30
Recreation premises:cafeteria/fast food/ restaurant	2	537
Restrooms (WC) for academic personnel	11	64.7
Total Surface		1382.4
Ratio m^2 per person	**1382.4 m2 / 89 pers = 15.53**	

During the academic year 2022-2023, in the EPOKA University Campus, are in use:

24 classes: (E-B31, E-B32, E-B33, E-211, E-311, E-312, A-118, A-119, A-120, A-127, A-128, A-129, A-130, A-131, D-101, D-102, D-103, D-104, D-201, D-202, D-203, D-204, D-301, D-302.

10 Auditories: E-012, E-110, E-212, E-213, E-214, E-313, E-314, A-005, A-117, A-212) and one conference room (E-B01).

5 Computer laboratories (E-011, E-015, E-B30, D005 and A-126).

5-Laboratory for courses: Electronic laboratory (E-010), Architecture laboratory (A-120/1), Projects laboratory (A-027), Panbiora laboratory (E-B02) and Civil Engineering Laboratory (I-001).

There are 2 internet rooms as it is reflected in the table above, but the University offers wireless internet all over its space. The capacities used are given in the table below.

Classes used during the 2023-2024 academic year.

No.	Name of the Class	Surface (m2)	Capacity
1	E-B31	75	40
2	E-B32	75	40
3	E-B33	75	40
4	E-211	64	36
5	E-311	63.46	35
6	E-312	81.32	60
7	A-118 Studio II	138	35
8	A-119 Studio III	138	35
9	A-120 Studio IV	138	35
10	A-127	72.41	56

11	A-128	73.53	56
12	A-129	73.71	56
13	A-130	72.02	56
14	A-131	72.02	56
15	D-101	72	47
16	D-102	66	40
17	D-103	50	33
18	D-104	52	24
19	D-201	72	47
20	D-202	66	41
21	D-203	50	26
22	D-204	52	27
23	D-301	94	67
24	D-302	66	45
total	**24**	**1851.47**	**1033**

Auditoriums used during the 2023-2024 academic year

No.	Name of Auditorium	Surface (m2)	Capacity
1	E 012	131.54	70
2	E 110	130.82	136
3	E-212	51.32	72

4	E-213	81.72	72
5	E 214	154.32	150
6	E-313	81.72	70
7	E 314	154.32	134
8	A-005	145.2	70
9	A-117 Studio I	138	35
10	A-212	85	72
total	**10**	**1153.96**	**881**

The facilities are equipped with heating-cooling system and video projectors. The construction materials and laboratory tools found in the Civil Engineering Laboratory are also being used in the teaching and research process.

The capacity of the laboratories used is given in the table below.

Laboratories used during the 2023-2024 academic year

Name	**Laboratories**	**Surface (m2)**	**Capacity**
E 015	Computer Laboratory 1	77.9	40
E 011	Computer Laboratory 2	96.6	42
E B30	Computer Laboratory 3	123.7	47
A-126	Computer Laboratory 4	72.4	42
D-005	Computer Laboratory 5	95.0	36
E 010	Electronic Laboratory	132.0	50
A 120/1	Architecture Laboratory	27.6	12

I 001	Civil Engineering Laboratory	283.0	40
A-027	Projects Laboratory	39.0	25
D-104	Courtroom (salla e gjyqit)	52	25
E-B02	Panbiora Laboratory	15.0	12
Total	**11**	**1014.3**	**371**

Civil Engineering Laboratory is used for study of various materials, especially concrete and the study of the earthquakes and its elements. This lab is one of the most important assets of the Department of Civil Engineering. Along with the use of different subjects, students can use laboratory facilities for different scientific research either individually or in groups. Civil Engineering Laboratoryhas a total area of 283 m²

Epoka University has a conference hall with a surface of 128 m² and a capacity of 99 persons. The conference hall is used more for social, cultural and various national and international conferences. The hall is equipped with central heating-cooling system, video projector, sound system and two cabins for simultaneous translation. Also, in the premises of the "Cultural Social Object" building is a conference hall with a surface of about 400 m² and a capacity of 300 persons.

LIBRARY

The Epoka University Library, which is located on the first floor of A-Building in the Rinas Campus, was founded to support the education and research activities of the university by providing and organizing the needed documents.

With its 100-seating capacity, our library has a 400 square meters area of use. Our University Library is composed of the entrance, Library and reading hall. In the entrance, there is a check out desk and research center. The periodicals, including the exhibition of new arrivals, are also shelved in this section. The reading hall is equipped for students to study and to do research.

We collaborate with academic staff to help students and faculties with vital content by reducing costs and increasing opportunities for better and more practical study, providing independent researchers with free and low-cost access.

Our library collection is enriched by purchases and donations. The books to buy are chosen in accordance with the needs and requests of the students, administrative and academic staff. Under the Library Unit and Documentation, the library has a total of about 25000 printed books

Digital Databases

Epoka University has full membership in JSTOR, a shared digital library created in 1995 that includes more than 12 million academic journal articles, books, and primary sources in 75 disciplines. JSTOR helps to explore a wide range of scientific content through a powerful research and teaching platform. JSTOR is part of ITHAKA, a not-for-profit organization.

JSTOR was founded to help libraries and academic publishers transition their activities from print to digital operations, to expand access to scholarly content around the world and to preserve it for future generations. JSTORE is offered free to our students and academic staff.

Every member of Epoka staff can access JSTOR's collections by going to http://www.jstor.org/ and searching or browsing for content.

Using the Library

Our library works on an open shelf system enabling you to reach the books directly. The books in the open shelves are topically sorted in the book hall according to LC classification method. To find the book you are looking for, you should follow these steps:

Through the catalog search computers in the library; you can search author name, book name, and publisher, topic, or keyword areas.

To get the book, you can go to the shelves with the classification and location numbers of the books appearing on the screen as a result of your search.

<u>Example of LC number</u> for the book: "Exchange rates and international finance", Laurence S. Copeland / Financial Times, 2008 **HG 3821.C78 2008**

The first part of the LC number "**HG**" represents the category of the book by its topic. In the LC system, the first letter **H** stands for **Social Science** class. Each subsequent letter indicates next level of subcategories of the main topic. In the given example **G** stands for **Finance**, **3821** indicates subcategories included between 3810-4000 (Foreign exchange, international finance, International monetary system), C78 indicates the first letter of authors surname, **2008** indicates book publication year.

Regulations

Students of PHD, Associate Degree, Bachelor's Degree and Master Students and academic and administrative personnel are the members of the library. They can borrow library materials in accordance with the rules.

Researchers coming from outside the university are not lent books, they are only allowed to use them in accordance with the rules.

Readers in this group are requested to fill up the related form Lending Service.

Circulation Rules

Resource	Patron	Loan period(days)	Maximum number of check-outs(items)
Book	Pre-undergraduate/Undergraduate students	15	3
	Graduate students	15	5
	Staff	20	5
Bound Journal	Graduate students Staff	5	2
Visual/Audio Resources	Pre-undergraduate/Undergraduate students Graduate students Staff	3	3

A. The Curriculum

Undergraduate Teaching

<div align="center">

FACULTY OF ARCHITECTURE AND ENGINEERING
DEPARTMENT OF COMPUTER ENGINEERING
3 (THREE) YEARS BACHELOR DIPLOMA IN COMPUTER ENGINEERING

</div>

First Year

First Semester

COURSES		Course	Compulsory /Elective	Weekly Course Distribution				Epoka	Semestral Lecture and studying hours					ECTS	
Code	Course Name	Type		Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
CEN 105	Linear Algebra	A	Compulsory	3	0	0	3	3	48	0	0	77	0	125	5
CEN 109	Introduction to Algorithms & Programming	B	Compulsory	3	0	2	5	4	48	0	32	95	0	175	7
MTH 101	Calculus I	A	Compulsory	3	2	0	5	4	48	32	0	95	0	175	7
PHY 101	General Physics I	A	Compulsory	3	2	0	5	4	48	32	0	95	0	175	7
ENG 103	Development of R. & W. Skills In English I	D	Compulsory	3	0	0	3	3	48	0	0	52	0	100	4
Semestral Total				15	4	2	21	18	240	64	32	414	0	750	30

First Year

Second Semester

COURSES		Course	Compulsory /Elective	Weekly Course Distribution				Epoka	Semestral Course and studying hours					ECTS	
Code	Course Name	Type		Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
MTH 106	Discrete Mathematics	B	Compulsory	3	0	0	3	3	48	0	0	77	0	125	5
CEN 110	C Programming	B	Compulsory	3	0	2	5	4	48	0	32	95	0	175	7
MTH 102	Calculus II	A	Compulsory	3	2	0	5	4	48	32	0	95	0	175	7
PHY 104	General Physics II	A	Compulsory	3	2	0	5	4	48	32	0	95	0	175	7
ENG 104	Development of R. & W. Skills In English II	D	Compulsory	3	0	0	3	3	48	0	0	52	0	100	4
Semestral Total				15	4	2	21	18	240	64	32	414	0	750	30

Second Year

Third 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	
CEN 215	Object Oriented Programming	B	Compulsory	3	0	2	3	4	48	0	32	95	0	175	7
CEN 217	Electrical & Electronic Circuits	B	Compulsory	3	0	2	5	4	48	0	32	95	0	175	7
CEN 219	Computer Organization	B	Compulsory	2	2	0	4	3	32	32	0	86	0	150	6
MTH 207	Fundamentals of Probability	B	Compulsory	2	2	0	4	3	32	32	0	86	0	150	6
	Non Technical Elective	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4
Semestral Total				13	4	4	21	17	208	64	64	414	0	750	30

Non technical electives

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	
BUS 103	Introduction to Business	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4
FL 201	Turkish I	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4
FL 203	German I	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4
FL 205	Italian I	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4
FL 207	French I	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4

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	
CEN 202	Database Management Systems	B	Compulsory	2	1	1	4	3	32	16	16	86	0	175	6
CEN 204	Digital Design	B	Compulsory	3	2	0	5	4	48	32	0	95	0	175	7

Code	Course Name	Course Type	Compulsory/Elective	Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	ECTS
CEN 206	Data Structures	B	Compulsory	2	0	2	5	4	48	0	32	95	0	150	7
MTH 206	Numerical Analysis	B	Compulsory	4	0	0	4	4	64	0	0	86	0	150	6
	Non Technical Elective	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4
Semestral Total				15	3	3	21	18	240	48	48	414	0	750	30

Non technical electives

COURSES		Course Type	Compulsory /Elective	Weekly Distribution			Course Epoka		Semestral Course and studying hours					ECTS	
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
BUS 103	Introduction to Business	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4
FL 202	Turkish II	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4
FL 204	German II	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4
FL 206	Italian II	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4
FL 208	French II	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4

Third Year
Fifth Semester

COURSES		Course Type	Compulsory /Elective	Weekly Distribution			Course Epoka		Semestral Course and studying hours					ECTS	
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
CEN 307	Computer Networks	B	Compulsory	3	0	2	5	4	48	0	32	70	0	150	6
CEN 351	Professional Practice	D	Compulsory	0	0	0	0	0	0	0	0	128	22	150	6
CEN 311	Web Technologies and Programming	B	Compulsory	3	0	2	5	4	48	0	32	70	0	150	6
	Technical Elective	C	Elective	2	2	0	4	3	32	0	0	118	0	150	6
	Technical Elective	C	Elective	2	2	0	4	3	32	0	0	118	0	150	6
Semestral Total				10	4	4	18	14	160	0	64	504	0	750	30

Third Year
Sixth Semester

COURSES		Course	Compulsory /Elective	Weekly Course Distribution				Epoka	Semestral Course and studying hours					ECTS	
Code	Course Name	Type		Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
CEN 308	Operating Systems	B	Compulsory	3	0	2	5	4	48	0	32	70	0	150	6
CEN 302	Software Engineering	B	Compulsory	3	0	2	5	4	48	0	32	70	0	150	6
CEN 390/ CEN 399	Graduation Project/ Final Comprehensive Exam	E	Compulsory	2	2	0	4	3	32	32	0	118	0	150	6
	Technical Elective	C	Elective	2	2	0	4	3	32	32	0	118	0	150	6
	Technical Elective	C	Elective	2	0	2	4	3	32	0	32	86	0	150	6
Semestral Total				12	4	6	22	17	192	64	96	462	0	750	30

Technical Electives

COURSES		Course	Compulsory /Elective	Weekly Course Distribution				Epoka	Semestral Course and studying hours					ECTS	
Code	Course Name	Type		Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
CEN 326	Fundamentals System Administration	C	Elective	2	2	0	4	3	32	32	0	86	0	150	6
CEN 328	Programming Languages I	C	Elective	2	2	0	4	3	32	32	0	86	0	150	6
CEN 330	Parallel Programming	C	Elective	2	2	0	4	3	32	32	0	86	0	150	6
CEN 332	Simulation and Modeling	C	Elective	2	2	0	4	3	32	32	0	86	0	150	6
CEN 336	Computer Graphics	C	Elective	2	2	0	4	3	32	32	0	86	0	150	6
CEN 338	Management Information Systems	C	Elective	2	2	0	4	3	32	32	0	86	0	150	6
CEN 346	Mobile Programming	C	Elective	2	2	0	4	3	32	32	0	86	0	150	6
CEN 348	Internship	C	Elective	2	2	0	4	3	32	32	0	86	0	150	6

CEN 350	Theory of Computation	C	Elective	2	2	0	4	3	32	32	0	86	0	150	6
CEN 352	Artificial Intelligence	C	Elective	2	2	0	4	3	32	32	0	86	0	150	6
CEN 354	Web Engineering	C	Elective	2	2	0	4	3	32	32	0	86	0	150	6
CEN 356	XML and WEB Services	C	Elective	2	2	0	4	3	32	32	0	86	0	150	6
CEN 358	Computer Graphics	C	Elective	2	2	0	4	3	32	32	0	86	0	150	6
CEN 366	Digital Data Communication	C	Elective	2	2	0	4	3	32	32	0	86	0	150	6
CEN 368	Network Security	C	Elective	2	2	0	4	3	32	32	0	86	0	150	6
CEN 370	Distributed Systems	C	Elective	2	2	0	4	3	32	32	0	86	0	150	6
CEN 374	Mobile and Wireless Networking	C	Elective	2	2	0	4	3	32	32	0	86	0	150	6
CEN 376	Data Mining	C	Elective	2	2	0	4	3	32	32	0	86	0	150	6
CEN 380	Machine Learning	C	Elective	2	2	0	4	3	32	32	0	86	0	150	6
CEN 386	Management Information Systems	C	Elective	2	2	0	4	3	32	32	0	86	0	150	6
CEN 389	Embedded Systems	C	Elective	2	2	0	4	3	32	32	0	86	0	150	6
CEN 340	Smartphone Applications	C	Elective	2	2	0	4	3	32	32	0	86	0	150	6
CEN 309	Analysis of Algorithms	C	Elective	2	2	0	4	3	32	32	0	86	0	150	6

FACULTY OF ARCHITECTURE AND ENGINEERING
DEPARTMENT OF COMPUTER ENGINEERING
3 (THREE) YEARS BACHELOR DIPLOMA IN ELECTRONICS AND DIGITAL COMMUNICATION ENGINEERING

First Year

First 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	
MTH 103	Linear Algebra	A	Compulsory	3	0	0	3	3	48	0	0	77	0	125	5
CEN 109	Introduction to Algorithms & Programming	B	Compulsory	3	0	2	5	4	48	0	32	95	0	175	7
MTH 101	Calculus I	A	Compulsory	3	2	0	5	4	48	32	0	95	0	175	7
PHY 101	General Physics I	A	Compulsory	3	2	0	5	4	48	32	0	95	0	175	7
ENG 103	Development of Reading and Writing Skills in English I	D	Compulsory	3	0	0	3	3	48	0	0	52	0	100	4
Semestral Total				15	4	2	21	18	240	64	32	414	0	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	
MTH 106	Discrete Mathematics	C	Compulsory	3	0	0	3	3	48	0	0	77	0	125	5
CEN 110	C Programming	B	Compulsory	3	0	2	5	4	48	0	32	95	0	175	7
MTH 102	Calculus II	A	Compulsory	3	2	0	5	4	48	32	0	95	0	175	7
PHY 104	General Physics II	A	Compulsory	3	2	0	5	4	48	32	0	95	0	175	7
ENG 104	Development of Reading and Writing Skills in English II	D	Compulsory	3	0	0	3	3	48	0	0	52	0	100	4
Semestral Total				15	4	2	21	18	240	64	32	414	0	750	30

Second Year
Third Semester

COURSES		Course Type	Compulsory /Elective	Weekly Distribution			Course Epoka	Semestral Course and studying hours						ECTS	
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Le ct.	Pract.	Lab.	Site W.	Other	Total	
ECE 201	Signals and Systems	B	Compulsory	3	0	2	5	4	48	0	32	95	0	175	7
ECE 203	Circuit Theory	B	Compulsory	3	0	2	5	4	48	0	32	95	0	175	7
CEN 219	Computer Organization	B	Compulsory	2	2	0	4	3	32	32	0	86	0	150	6
MTH 207	Fundamentals of Probability	C	Compulsory	4	0	0	4	4	64	0	0	86	0	150	6
	Non technical elective	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4
Semestral Total				15	2	4	21	18	240	32	64	414	0	750	30

Non-technical electives

COURSES		Course Type	Compulsory /Elective	Weekly Distribution			Course Epoka	Semestral Course and studying hours						ECTS	
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
BUS 103	Introduction to Business	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4
FL 201	Turkish I	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4
FL 203	German I	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4
FL 205	Italian I	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4
FL 207	French I	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4

Second Year
Fourth Semester

COURSES		Course Type	Compulsory /Elective	Weekly Distribution			Course Epoka	Semestral Course and studying hours						ECTS	
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
ECE 202	Electromagnetic Field Theory	B	Compulsory	2	0	2	4	3	32	0	32	86	0	150	6
ECE 204	Electronics I	B	Compulsory	3	0	2	5	4	48	0	32	95	0	175	7
ECE 206	Digital Electronics I	B	Compulsory	3	0	2	5	4	48	0	32	95	0	175	7
ECE 208	Numerical Analysis	C	Compulsory	2	2	0	4	3	32	32	0	86	0	150	6
	Non technical elective	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4
Semestral Total				13	2	6	21	17	208	32	96	414	0	750	30

Non technical electives

COURSES		Course Type	Compulsory /Elective	Weekly Distribution			Course Total	Epoka Credits	Semestral Course and studying hours					ECTS Total	
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
BUS 103	Introduction to Business	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4
FL 202	Turkish II	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4
FL 204	German II	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4
FL 206	Italian II	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4
FL 208	French II	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4

Third Year
Fifth Semester

COURSES		Course Type	Compulsory /Elective	Weekly Distribution			Course Total	Epoka Credits	Semestral Course and studying hours					ECTS Total	
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
ECE 301	Electronics II	B	Compulsory	2	0	2	4	3	32	0	32	86	0	150	6
ECE 303	Electromagnetic Waves	B	Compulsory	2	0	2	4	3	32	0	32	86	0	150	6
ECE 305	Digital Communication I	B	Compulsory	2	0	2	4	3	32	0	32	86	0	150	6
ECE 307	Computer Networks	B	Compulsory	2	0	2	4	3	32	0	32	86	0	150	6
ECE 351	Professional Practice	D	Compulsory	0	0	0	0	0	0	0	0	128	22	150	6
Semestral Total				8	0	8	16	12	128	0	128	472	22	750	30

Third Year
Sixth Semester

COURSES		Course Type	Compulsory /Elective	Weekly Distribution			Course Total	Epoka Credits	Semestral Course and studying hours					ECTS Total	
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
ECE 302	Antennas and Propagation	B	Compulsory	2	0	2	4	3	32	0	32	86	0	150	6
ECE 304	Control Systems	B	Compulsory	2	0	2	4	3	32	0	32	86	0	150	6
ECE 306	Power Electronics	B	Compulsory	2	0	2	4	3	32	0	32	86	0	150	6
ECE 3xx	Technical Elective	C	Elective	2	0	2	4	3	32	0	32	86	0	150	6
ECE 390	Graduation Project		Compulsory	1	4	0	5	3	16	64	0	70	0	150	6
ECE 399	Final Comprehensive Exam	E	Compulsory	1	4	0	5	3	16	64	0	70	0	150	6
Semestral Total				9	4	8	21	15	144	64	128	414	0	750	30

Technical electives

COURSES		Compulsory /Elective	Course Type	Weekly Distribution			Course Total	Epoka Credits	Semestral Course and studying hours					ECTS Total	
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
ECE 310	Communication Theory	Elective	C	3	0	0	3	3	48	0	0	102	0	150	6
From CEN	Web Technologies and Programming	Elective	C	3	0	0	3	3	48	0	0	102	0	150	6
ECE 325	Telecommunication Circuits	Elective	C	3	0	0	3	3	48	0	0	102	0	150	6
ECE 318	Multimedia Signal Distribution	Elective	C	3	0	0	3	3	48	0	0	102	0	150	6
ECE 320	Computer Graphics	Elective	C	3	0	0	3	3	48	0	0	102	0	150	6
ECE 324	Computer Animation	Elective	C	3	0	0	3	3	48	0	0	102	0	150	6
ECE 326	Digital Photography	Elective	C	3	0	0	3	3	48	0	0	102	0	150	6
ECE 330	Microwaves	Elective	C	3	0	0	3	3	48	0	0	102	0	150	6
ECE 332	Introduction to Optical Fibers	Elective	C	3	0	0	3	3	48	0	0	102	0	150	6
ECE 334	Digital Data Transmission	Elective	C	3	0	0	3	3	48	0	0	102	0	150	6
ECE 336	Digital Signal Processing	Elective	C	3	0	0	3	3	48	0	0	102	0	150	6
ECE 338	Satellite Communication	Elective	C	3	0	0	3	3	48	0	0	102	0	150	6
ECE 384	Microcontrollers	Elective	C	3	0	0	3	3	48	0	0	102	0	150	6
ECE 342	Fundamentals of Audio Engineering	Elective	C	3	0	0	3	3	48	0	0	102	0	150	6
ECE 340	Internship	Elective	C	0	0	0	0	0	0	0	0	150	0	150	6
ECE 346	Television Technique	Elective	C	3	0	0	3	3	48	0	0	102	0	150	6
CEN 308	Operating Systems	Elective	C	3	0	0	3	3	48	0	0	102	0	150	6
ECE 358	Information Theory and Coding	Elective	C	3	0	0	3	3	48	0	0	102	0	150	6
ECE 366	Introduction to Nanoscience and Nanotechnology	Elective	C	3	0	0	3	3	48	0	0	102	0	150	6

CEN 370	Distributed Systems	Elective	C	3	0	0	3	3	48	0	0	102	0	150	6
CEN 328	Programming Languages I	Elective	C	3	0	0	3	3	48	0	0	102	0	150	6
ECE 312	Digital Multimedia	Elective	C	3	0	0	3	3	48	0	0	102	0	150	6
ECE 348	Communication Theory	Elective	C	3	0	0	3	3	48	0	0	102	0	150	6

FACULTY OF ARCHITECTURE AND ENGINEERING
DEPARTMENT OF COMPUTER ENGINEERING
3 (THREE) YEARS BACHELOR DIPLOMA IN SOFTWARE ENGINEERING

First Year

First Semester

COURSES		Course	Compulsory /Elective	Weekly Course Distribution			Epoka		Semestral Lecture and studying hours					ECTS	
Code	Course Name	Type		Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
CEN 105	Linear Algebra	A	Compulsory	3	0	0	3	3	48	0	0	77	0	125	5
CEN 109	Introduction to Algorithms & Programming	B	Compulsory	3	0	2	5	4	48	0	32	95	0	175	7
MTH 101	Calculus I	A	Compulsory	3	2	0	5	4	48	32	0	95	0	175	7
PHY 101	General Physics I	A	Compulsory	3	2	0	5	4	48	32	0	95	0	175	7
ENG 103	Development of R. & W. Skills In English I	D	Compulsory	3	0	0	3	3	48	0	0	52	0	100	4
Semestral Total				15	4	2	21	18	240	64	32	414	0	750	30

First Year

Second Semester

COURSES		Course	Compulsory /Elective	Weekly Course Distribution			Epoka		Semestral Course and studying hours					ECTS	
Code	Course Name	Type		Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
MTH 106	Discrete Mathematics	A	Compulsory	3	0	0	3	3	48	0	0	77	0	125	5
CEN 110	C Programming	B	Compulsory	3	0	2	5	4	48	0	32	95	0	175	7
MTH 102	Calculus II	A	Compulsory	3	2	0	5	4	48	32	0	95	0	175	7
SWE 101	Introduction to Software Engineering	B	Compulsory	3	2	0	5	4	48	32	0	95	0	175	7
ENG 104	Development of R. & W. Skills In English II	D	Compulsory	3	0	0	3	3	48	0	0	52	0	100	4
Semestral Total				15	4	2	21	18	240	64	32	414	0	750	30

Second Year

Third Semester

COURSES		Course	Compulsory /Elective	Weekly Course Distribution				Epoka	Semestral Course and studying hours						ECTS	
Code	Course Name	Type		Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total		
CEN 215	Object Oriented Programming	B	Compulsory	3	0	2	5	4	48	0	32	95	0	175	7
CEN 203	Database Management Systems	B	Compulsory	3	1	1	5	4	48	16	16	95	0	175	7
CEN 219	Computer Organization	C	Compulsory	2	2	0	4	3	32	32	0	86	0	150	6
MTH 207	Fundamental of Probability	A	Compulsory	2	2	0	4	3	32	32	0	86	0	150	6
	Non Technical Elective	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4
Semestral Total				13	5	3	21	17	208	80	48	414	0	750	30

Second Year

Fourth Semester

COURSES		Course	Compulsory /Elective	Weekly Course Distribution				Epoka	Semestral Course and studying hours						ECTS	
Code	Course Name	Type		Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total		
SWE 202	Software Modeling and Design	B	Compulsory	2	0	2	4	3	32	0	32	86	0	150	6
SWE 211	Programming Language Paradigms	B	Compulsory	3	0	2	5	4	48	0	32	95	0	175	7
CEN 206	Data Structures	B	Compulsory	3	0	2	5	4	48	0	32	95	0	175	7
CEN 311	Web Technologies and Programming	B	Compulsory	2	0	2	4	3	32	0	32	86	0	150	6
XXX	Non Technical Elective	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4
Semestral Total				13	0	8	21	17	208	0	128	414	0	750	30

Non technical electives

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	
BUS 103	Introduction to Business	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4
BUS 114	Communication Skills	C	Elective	3	0	0	3	3	48	0	0	52	0	100	4
LAW 105	Introduction to Law	D	Elective	3	0	0	3	3	48	0	0	52	0	100	4

Third Year

Fifth 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	
CEN 307	Computer Networks	C	Compulsory	3	0	2	5	4	48	0	32	70	0	150	6
CEN 309	Analysis of Algorithms	B	Compulsory	2	0	2	4	3	32	0	32	86	0	150	6
SWE 303	Software Testing and Quality Assurance	B	Compulsory	2	0	2	4	3	32	0	32	86	0	150	6
CEN 376	Data Mining	B	Compulsory	2	0	2	4	3	32	0	32	86	0	150	6
CEN 3XX	Technical Elective	C	Elective	2	2	0	4	3	48	32	0	86	0	100	6
Semestral Total				11	2	8	21	16	176	32	128	414	0	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	
CEN 308	Operating Systems	B	Compulsory	3	0	2	5	4	48	0	32	70	0	150	6
SWE 302	Software Project Management	B	Compulsory	2	0	2	4	3	32	0	32	86	0	150	6

Code	Course Name	Course Type	Compulsory/Elective	Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	ECTS
CEN XXX	Technical Elective	C	Compulsory	2	2	0	4	3	32	32	0	86	0	150	6
CEN XXX	Technical Elective	C	Compulsory	2	2	0	4	3	32	32	0	86	0	150	6
CEN 390	Graduation project/ final exam	E	Compulsory	1	4	0	5	3	16	64	0	70	0	100	6
Semestral Total				10	8	4	22	16	160	128	64	398	0	750	30

Technical electives

COURSES		Compulsory /Elective	Course Type	Weekly Distribution			Course Epoka		Semestral Course and studying hours					ECTS	
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
CEN 326	Fundamentals of System Administration	Elective	B	2	2	0	4	3	48	0	0	77	0	125	6
CEN 328	Programming Languages I	Elective	B	2	2	0	4	3	48	0	0	77	0	125	6
CEN 336	Computer Graphics	Elective	B	2	2	0	4	3	48	0	0	77	0	125	6
CEN 338	Management Information Systems	Elective	B	2	2	0	4	3	48	0	0	77	0	125	6
CEN 352	Artificial Intelligence	Elective	B	2	2	0	4	3	48	0	0	77	0	125	6
CEN 351	Multimedia and Graphic Design	Elective	C	2	2	0	4	3	48	0	0	77	0	125	6
CEN 366	Digital Data Communication	Elective	C	2	2	0	4	3	48	0	0	77	0	125	6
CEN 389	Embedded Systems	Elective	C	2	2	0	4	3	48	0	0	77	0	125	6
CEN 340	Smartphone Applications	Elective	C	2	2	0	4	3	48	0	0	77	0	125	6
CEN 342	User Interface Design	Elective	C	2	2	0	4	3	48	0	0	77	0	125	6

Graduate Teaching

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FACULTY OF ARCHITECTURE AND ENGINEERING
DEPARTMENT OF COMPUTER ENGINEERING
MASTER OF SCIENCE PROGRAM IN COMPUTER ENGINEERING

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FIRST YEAR

First Semester

COURSES		Course Type	Compulsory /Elective	Weekly Distribution			Course	Epoka Credits	Semestral Lecture and studying hours						ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
CEN 409	Research Methods	A	Compulsory	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 571	Data Mining	B	Compulsory	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 575	Computer Vision	B	Compulsory	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN xxx	Elective	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
Semestral Total				12	8	0	20	16	192	128	0	430	0	750	30

COURSES		Course Type	Compulsory /Elective	Weekly Distribution			Course	Epoka Credits	Semestral Lecture and studying hours						ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
CEN 462	Network Security	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 411	Advanced Object Oriented Programming	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5

FIRST YEAR

Second Semester

COURSES		Course Type	Compulsory /Elective	Weekly Distribution			Course	Epoka Credits	Semestral Course and studying hours						ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab	Site W.	Other	Total	
CEN 583	Advanced Computer Architecture	B	Compulsory	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 552	Advanced Database Management System	B	Compulsory	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 578	Machine Learning	B	Compulsory	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 543	Digital Image Processing	B	Compulsory	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
Semestral Total				12	8	0	20	16	192	128	0	430	0	750	30

SECOND YEAR

Third Semester

COURSES		Course Type	Compulsory /Elective	Weekly Distribution				Course	Epoka	Semestral Lecture and studying hours						ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
ECE 433	Introduction to Neural Networks	B	Compulsory	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 535	Advanced Mathematics for Computer Science	B	Compulsory	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 563	Advanced Concepts in Computer Networks	B	Compulsory	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN XXX	Elective	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
Semestral Total				12	8	0	20	16	192	128	0	430	0	750	30

List of Elective Courses:

COURSES		Course Type	Compulsory /Elective	Weekly Distribution				Course	Epoka	Semestral Lecture and studying hours						ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
CEN 594	Term Project	C	Elective	1	6	0	7	4	16	96	0	75.5	0	187.5	7.5

SECOND YEAR

Fourth Semester

COURSES		Course Type	Compulsory /Elective	Weekly Distribution				Course	Epoka	Semestral Course and studying hours						ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
CEN 599	Thesis	E	Compulsory	0	0	0	0	0	0	0	0	450	0	450	18
CEN 499	Professional Practice	D	Compulsory	0	15	0	15	0	0	240	0	60	0	300	12
Semestral Total				0	0	0	15	0	0	240	0	510	0	750	30

List of Elective courses:

COURSES		Course Type	Compulsory / Elective	Weekly Distribution				Course	Epoka	Semestral Lecture and studying hours						ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
CEN 553	Theory of Computation	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 514	Randomized Algorithm	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 567	Advanced Algorithms & Data structures	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 415	Information Retrieval	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 592	Knowledge Management	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 564	Wireless Networks	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 531	Information Security and Computer Forensics	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 461	Network Programming	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 539	Nano-Science and Nano-Technology	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 565	Bioinformatics	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 555	Nano biomaterials	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 509	Tissue Engineering	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 545	Advanced Numerical Methods	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 403	Software Project Management	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 405	Operating System Design	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 421	Introduction to Web Engineering	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 425	E-Business and E-Commerce	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 487	Introduction to Cryptography	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 501	Special Topics in Software Engineering	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 506	Distributed Systems	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5

CEN 516	Mobile Applications Programming	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 572	Special Topics in Artificial Intelligence	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 573	Artificial Neural Networks	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 576	Management Information Systems	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 584	Design of Embedded Systems	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 544	Multimedia Signal Processing	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 546	Multimedia and Computer Animation	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 453	Security Auditing and Penetration Testing	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 556	Cybersecurity	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 508	Big Data Architectures and Data Analytics	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 579	Intelligent Agent Systems	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 548	Game Engineering	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 566	Compilers	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 536	Optimization Methods and Algorithms	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 569	Data Science	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 511	Applied Cryptography	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 447	Advanced Control Systems	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5

FACULTY OF ARCHITECTURE AND ENGINEERING

DEPARTMENT OF COMPUTER ENGINEERING

MASTER OF SCIENCE IN ELECTRONICS AND COMMUNICATION 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	
CEN 409	Research Methods	A	Compulsory	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
ECE 512	Digital Communication Systems	B	Compulsory	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
ECE 468	Computer Vision	B	Compulsory	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
ECE 464	Automatic Control Systems	B	Compulsory	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
Semestral Total				12	8	0	20	16	192	128	0	430	0	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	
CEN 545	Advanced Numerical Methods	B	Compulsory	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
ECE 520	Integrated Systems	B	Compulsory	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 543	Digital Image processing	B	Compulsory	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 583	Advanced Computer Architecture	B	Compulsory	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
Semestral Total				12	8	0	20	16	192	128	0	430	0	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	
ECE 433	Introduction to Neural Networks	B	Compulsory	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 563	Advanced Concepts in Computer Networks	B	Compulsory	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5

Code	Course Name	Course Type	Compulsory /Elective	Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	ECTS
ECE xxx	Elective	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
ECE xxx	Elective	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
Semestral Total				12	8	0	20	16	192	128	0	430	0	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	
ECE 599	Thesis	E	Compulsory	0	0	0	0	0	0	0	0	450	0	450	18
ECE 499	Professional Practice	D	Compulsory	0	15	0	15	0	0	240	0	510	0	750	12
Semestral Total				0	15	0	15	0	0	240	0	510	0	750	30

List of Elective courses:

List of Elective courses:

Code	Course Name	Course Type	Compulsory / Elective	Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	ECTS
ECE 439	Electronics for Bioengineering Applications	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
ECE 445	Advanced Optical Communication	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
ECE 472	Special Topics in Artificial Intelligence	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
ECE 478	Industrial Electronics	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
ECE 533	Advanced Antenna Theory	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
ECE 537	Advanced Topics in Mobile Cellular Communication Systems	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
ECE 541	Design of Embedded Systems	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
ECE 590	Term Project	C	Elective	1	4	0	5	4	16	64	0	107.5	0	187.5	7.5

CEN 535	Advanced Mathematics for Computer Science	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
ECE 541	Design of Embedded Systems	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 567	Advanced Algorithms & Datastructures	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 592	Knowledge Management	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 571	Data Mining	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 564	Wireless Networks	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 462	Network Security	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 531	Information Security and Computer Forensics	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 461	Network Programming	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 539	Nano-Science and Nano-Technology	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 565	Bioinformatics	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 555	Nanobiomaterials	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 509	Tissue Engineering	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 403	Software Project Management	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 405	Operating System Design	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 411	Advanced Object Oriented Programming	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 421	Introduction to Web Engineering	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 487	Introduction to Cryptography	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 506	Distributed Systems	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 516	Mobile Applications Programming	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5

CEN		C													
CEN 573	Artificial Neural Networks	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 578	Machine Learning	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 584	Design of Embedded Systems	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 544	Multimedia Signal Processing	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 453	Security Auditing and Penetration Testing	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 556	Cybersecurity	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 508	Big Data Architectures and Data Analytics	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 579	Intelligent Agent Systems	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 548	Game Engineering	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 566	Compilers	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 536	Optimization Methods and Algorithms	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 569	Data Science	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 511	Applied Cryptography	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5

FACULTY OF ARCHITECTURE AND ENGINEERING
DEPARTMENT OF COMPUTER ENGINEERING
PROFESSIONAL MASTER PROGRAM IN COMPUTER ENGINEERING

FIRST YEAR

First Semester

COURSES		Course Type	Compulsory / Elective	Weekly Distribution			Course	Epoka	Semestral Lecture and studying hours						ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
CEN xxx	Elective	A	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN xxx	Elective	B	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN xxx	Elective	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN xxx	Elective	B	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
Semestral Total				12	8	0	20	16	192	128	0	430	0	750	30

FIRST YEAR

Second Semester

COURSES		Course Type	Compulsory /Elective	Weekly Distribution			Course	Epoka	Semestral Lecture and studying hours						ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
CEN 590	Term Project	E	Compulsory	1	4	0	5	3	16	64	0	107.5	0	187.5	7.5
CEN 498	Professional Practice	D	Compulsory	1	4	0	5	3	16	64	0	107.5	0	187.5	7.5
CEN xxx	Elective	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN xxx	Elective	B	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
Semestral Total				8	12	0	20	14	128	192	0	430	0	750	30

List of Elective courses:

COURSES		Course Type	Compulsory / Elective	Weekly Distribution			Course	Epoka	Semestral Lecture and studying hours						ECTS
Code	Course Name			Theory	Pract.	Lab.	Total	Credits	Lect.	Pract.	Lab.	Site W.	Other	Total	
CEN 553	Theory of Computation	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 514	Randomized Algorithm	B	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 567	Advanced Algorithms & Data structures	B	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5

CEN 552	Advanced Database Management System	B	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 415	Information Retrieval	B	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 592	Knowledge Management	B	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 571	Data Mining	B	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 563	Adv. Concepts in computer Networks	B	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 564	Wireless Networks	B	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 462	Network Security	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 531	Information Security and Computer Forensics	B	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 461	Network Programming	B	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 593	Nano-Science and Nano-Technology	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 565	Bioinformatics	B	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 555	Nanobiomaterials	C	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 509	Tissue Engineering	B	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 545	Advanced Numerical Methods	A	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5
CEN 535	Advanced Mathematics for Computer Science	A	Elective	3	2	0	5	4	48	32	0	107.5	0	187.5	7.5

THE CURRICULUM OF PHD IN COMPUTER ENGINEERING STUDY PROGRAM:

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

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

Year II+III		T	P	C	ECTS
CEN 800	PhD THESIS	0	0	0	120
Total:		0	0	0	**120**

Note: **T** – Theoretical hours
P – Practical hours
C – Credits according to American System
ECTS – Credits according to ECTS System

List of elective courses:

Course Code	Course Name	T	P	C	ECTS
CEN 801	Special Topics in Software Engineering	3	0	3	7.5
CEN 802	Complex Systems	3	0	3	7.5
CEN 803	Software Project Management	3	0	3	7.5
CEN 804	Advanced Topics in Computer Engineering	3	0	3	7.5
CEN 805	Operating System Design	3	0	3	7.5
CEN 806	Distributed Systems	3	0	3	7.5
CEN 807	Object Oriented Software Engineering	3	0	3	7.5
CEN 809	Research Methods	3	0	3	7.5
CEN 811	Advanced Object-Oriented Programming	3	0	3	7.5
CEN 813	Formal Languages & Compilers	3	0	3	7.5
CEN 814	Metaheuristics	3	0	3	7.5
CEN 815	Information Retrieval	3	0	3	7.5
CEN 816	Mobile Applications Programming	3	0	3	7.5

CEN 818	System Administration I	3	0	3	7.5
CEN 819	System Administration II	3	0	3	7.5
CEN 820	Theory of Computation	3	0	3	7.5
CEN 821	Web Engineering	3	0	3	7.5
CEN 823	XML and Web Services	3	0	3	7.5
CEN 825	E-Business and E-commerce	3	0	3	7.5
CEN 827	Directed Study I	3	0	3	7.5
CEN 828	Directed Study II	3	0	3	7.5
CEN 831	Information Security and Computer Forensics	3	0	3	7.5
CEN 833	Advanced Simulation and Modelling	3	0	3	7.5
CEN 835	Advanced Math for Computer Science	3	0	3	7.5
CEN 873	Artificial Neural Networks	3	0	3	7.5
CEN 839	Introduction to Nano-Science and Nano-Technology	3	0	3	7.5
CEN 843	Digital Image Processing	3	0	3	7.5
CEN 845	Advanced Numerical Methods	3	0	3	7.5
CEN 848	Programming Languages I	3	0	3	7.5
CEN 849	Programming Languages II	3	0	3	7.5
CEN 850	Programming Languages III	3	0	3	7.5
CEN 851	Speech Processing	3	0	3	7.5
CEN 852	Advanced Database Management Systems	3	0	3	7.5
CEN 853	Design and Analysis of Algorithms	3	0	3	7.5
CEN 855	Bioinformatics	3	0	3	7.5
CEN 856	Introduction to Cloud Computing	3	0	3	7.5
CEN 861	Network Programming	3	0	3	7.5
CEN 862	Network Security	3	0	3	7.5
CEN 864	Wireless Networks	3	0	3	7.5
CEN 865	Tissue Engineering	3	0	3	7.5
CEN 871	Data Mining	3	0	3	7.5
CEN 872	Special Topics in Artificial Intelligence	3	0	3	7.5
CEN 870	Cryptography	3	0	3	7.5
CEN 874	Fuzzy Logic	3	0	3	7.5
CEN 875	Computer Vision	3	0	3	7.5
CEN 876	Management Information Systems	3	0	3	7.5
CEN 877	Nanomaterials	3	0	3	7.5
CEN 878	Machine Learning	3	0	3	7.5
CEN 879	Randomized Algorithms	3	0	3	7.5
CEN 881	Information Theory	3	0	3	7.5
CEN 883	Computer Architecture	3	0	3	7.5
CEN 884	Design of Embedded Systems	3	0	3	7.5
CEN 885	Parallel Computing	3	0	3	7.5
CEN 886	Advanced Computer Architecture	3	0	3	7.5
CEN 887	Advanced Topics in Computer Science	3	0	3	7.5
CEN 863	Advanced Concepts in Computer Networks	3	0	3	7.5
CEN 892	Knowledge Management	3	0	3	7.5
CEN 869	Theory of Computation	3	0	3	7.5
CEN 867	Advanced Algorithms and Datastructures	3	0	3	7.5

Graduate Teaching

C. Teaching, Learning, Assessment & Research

Undergraduate Students' List of Theses

BA CEN

1. Klea Gjoshi- *Biomaterial risk Assessment Employing deep Learning models on Cell image*- Assoc. Prof. Dr. Arban Uka
2. Marvin Kika- *Deep Learning in Computed Tomography Image Reconstruction*- Assoc. Prof. Dr. Arban Uka
3. Uendi Muça- *Odor detection Using Machine and Deep Learning Algorithms*- Prof. Dr. Bekir Karlik
4. Alessio Gega- *Design of a travel Agency Website*- M. Sc. Redjola Manaj
5. Jon Kurmaku-*"Enviroscope" Environmental Parameters Extractor and Processing using Field-Programmable-Gate-Arrays-Software solution*- Prof. Dr. Betim Çiço
6. Kora Sulo- *Comparative Analysis of transfer Learning Techniques for Brain tumor Classification using MRI Images*- M. Sc. Sabrina Begaj
7. Lora Shima- *Towards automated Malaria detection: a Deep Learning Approach Integrating custom Convolutional Neural networks and Pre-trained Models for accurate Parasite Identification*- M. Sc. Sabrina Begaj
8. Eris Leksi- *Developing and Training and AI Model to Analyze and Predict future Prices in the Cryptocurrency Market*- Prof. Dr. Betim Çiço
9. Alketa Alia- *Diagnosis of Diabetic Retinopathy using Machine and deep Learning Algorithms*- Prof. Dr. Bekir Karlik
10. Sindi Ziu- *Deepcubea, a study of Reinforcement Learning algorithms for solving the Rubik's cube*- M. Sc. Igli Draçi
11. Endro Ferizolli- *Deep-learning-Based Alzheimer's Disease Classification with Convolutional Neural Networks*- M. Sc. Sabrina Begaj
12. Megi Dervishi-*3D Reconstruction Via Structure from Motion*- Dr. Florenc Skuka
13. Klajdi Vodha- *Emotion Recognition Based on Facial Expressions Using Convolutional Neural Networks*- M. Sc. Ari Gjerazi
14. Deni Tusha- *Signature forgery Detection using Siamese Neural Networks*- M. Sc. Igli Draçi
15. Tea Aleksi- *Using Artificial Intelligence Algorithms for Predicting Asteroid Diameter*- Prof. Dr. Betim Çiço
16. Ardit Harizi-*3D Reconstruction Using Stereo Vision*- Dr. Florenc Skuka
17. Emilja Beneja- *Detection of brain Diseases from MRI and CT scans using Machine learning Algorithms* - Prof. Dr. Bekir Karlik
18. Anjeza Kanxha- *Tumor Identification in CT and MRI Imaging Using deep learning for Accurate Diagnosis*- Assoc. Prof. Dr. Dimitrios Karras
19. Bianka Lila- *Application of Machine learning Algorithms in stock Marketing Prediction*- Dr. Shkelqim Hajrulla

20. Rezart Toli- *Deep Learning for Alzheimer's Disease Classification Using Brain MRI Scans*- M. Sc. Stela Lila
21. Klea Dushku- *Fingerprint Recognition system Using Minutiae based Extraction and Machine Learning Algorithms*- Prof. Dr. Bekir Karlik
22. Brajan Gjorga- *Stock market Prediction using Decision tree Regression a Machine Learning Approach*- Dr. Valmir Bame
23. Ajla Mansi- *Skin Cancer Detection Using Machine Learning*- Dr. Florenc Skuka
24. Kejsi Carkanji- *Seat occupancy Detection algorithm for Epoka University's Library based on Deep Learning*- Dr. Shkëlqim Hajrulla
25. Igli Zhupa- *"Enviroscope" Environmental Parameters Extractor and Processing using Field-Programmable- Gate-Arrays-Hardware Solution* - Prof. Dr. Betim Çiço
26. Gled Muça- *Depth Map Enhancement using Convolutional Neural Network*- Dr. Florenc Skuka
27. Miki Belegu- *Machine Learning in Video-games*- Assoc. Prof. Dr. Dimitrios Karras
28. Englan Muça- *Advancing 3D Character Interactivity through Conversational AI and Lip-sync Technologies*- Assoc. Prof. Dr. Dimitrios Karras

BA SWE

1. Aldrin Çifliku- *Biomaterial Risk Assessment Employing Deep Learning Models on Cell Image*- Assoc.Prof.Dr. Arban Uka
2. Amara Çela- *Single Image Deblurring: A Comparative Study*- Dr. Florenc Skuka
3. Anita Mjeshtri- *Image Super-Resolution Using Deep Learning*- Dr. Florenc Skuka
4. Fabiona Tafçiu- *Using Transformer Models to Design Chat Bots for Mentally Ill Patients*- M.Sc. Igli Draçi
5. Viktoria Bashari- *Nanofiber Beads Detection Through Deep Learning*- Assoc.Prof.Dr. Arban Uka
6. Xhensil Gjini- *Sea Creatures Image Classification with Different Variants of Convolutional Neural Networks*- M.Sc. Ari Gjerazi
7. Erli Kuka- *Application of Convolutional Neural Network in Classification of Aorta Dissection*- M.Sc. Igli Draçi
8. Erisa Zaimi- *Music Recommendation Based On Emotion Detection System Using Facial Expression Recognition*- M.Sc. Igli Draçi
9. Erlis Këndezi- *Automatic Input Test Case Generator for Functional Problems*- M.Sc. Ari Gjerazi
10. Henri Hatija- *Sentiment Analysis of Amazon Reviews Using Natural Language Processing Techniques*- M.Sc. Ari Gjerazi
11. John Nase- *Facial Emotion Recognition System*- M.Sc. Ari Gjerazi
12. Kevin Çela- *False Lumen, True Lumen Detection of Aortic Dissection Using U-Nets*- M.Sc. Igli Draçi
13. Ardisa Beqja- *Stress Detection Through Speech Recognition*- M.Sc. Ari Gjerazi
14. Tea Malasi- *Emotion Recognition Based on Electroencephalography (EEG) Signals*- Dr. Florenc Skuka
15. David Keçi- *Comparative Analysis of Texrank and Lexrank Models for Text Summarization: Architecture, Performance, And Prospect*- M.Sc. Igli Draçi
16. Greisi Jaho - *Comparative Analysis of Seq2seq and Pegasus Models For Text Summarization: Architecture, Performance, And Prospect*- M.Sc. Igli Draçi
17. Juna Findiku- *Predicting Wildfires with Convolutional Neural Networks (CNNS)*- M.Sc. Sabrina Begaj

18. Eno Bendi - *Chest Pneumonia Segmentation and Classification Using Different Artificial Intelligence Techniques*- M.Sc. Ari Gjerazi
19. Joan Gjergo- *Enhancing Construction Site Safety Using Object Detection*- M.Sc. Ari Gjerazi
20. Sara Berberi- *Implementation of a License Plate Detection System in Albanian License Plates Using Yolo*- M.Sc. Sabrina Begaj
21. Xhesi Baze- *Project Managers' Leadership Style As A Success Factor Of The End Product*- M.Sc. Ari Gjerazi
22. Aurora Mana- *Diabetes Prediction Using Data Mining and Deep Learning Techniques*- Assoc.Prof.Dr. Dimitrios Karras
23. Irisa Nazari- *Fashion Recommender System Using Resnet Variants*- M.Sc. Sabrina Begaj
24. Klea Haxhiu- *Real Time Sign Language Detector*- M.Sc. Igli Draçi
25. Elgin Belalla-*Brain Tumor Classification Using Different Artificial Intelligence Techniques*- M.Sc. Stela Lila
26. Patrik Madhi- *Automated Skin Cancer Detection Using Deep Learning and Image Processing Techniques*- M.Sc. Sabrina Begaj
27. Huerta Kalaci- *Language Translation and Sentiment Analysis Using Artificial Intelligence Algorithms*- M.Sc. Eriselda Goga
28. Elisa Gjuraj- *Software Documentation of Electronics Store System*- Dr.Valmir Bame
29. Kristjan Gjinopulli- *Painting Classifier Model*- Assoc.Prof.Dr. Dimitrios Karras
30. Dejvi Qyra-*Automated Data Standardization and Efficient Workflow Management*- M.Sc. Redjola Manaj
31. Ralf Poni- *Intersection Simulation Using a Dynamic Traffic Light System In Unity*- M.Sc. Ari Gjerazi
32. Latifsmail Ertikin- *University Chatbot Using Llama-2 Large Language Model*- Dr.Florenc Skuka
33. Omar Jamal Alsafarti- *Using Chat GPT-o To Design Chatbot for EPOKA University*- Dr.Florenc Skuka
34. Marko Maksuti- *Road Sign Recognition Using Shallownet, Lenet, Vggnet and Detection Using Faster R-CNN*- M.Sc. Sabrina Begaj
35. Fatjon Hodo- *Differentiating of Big EMG Data of Arm Movement*- Prof.Dr. Bekir Karlik

BA ECE

1. Xhulian Cene- *Image Processing Using FPGA*- Assoc.Prof.Dr. Arban Uka
2. Rozalinda Brahollari- *A Penetration Testing Approach to Securing AI*- M.Sc. Genti Rusetim
3. Geri Shuli - *Design and Implementation of Arrytthmic ECG Systems on FPGA*- Prof.Dr. Betim Çiço
4. Alban Berisha- *Fourier Ptychography for Microscopic Image Resolution Enhancement*- Assoc.Prof.Dr. Arban Uka
5. Gersi Arapi- *Managing the Speed of Direct Current Motors: Strategies and Approaches*- Prof.Dr. Gëzim Karapici

6. Hajrije Brami- *A Penetration Testing Approach to Securing Web Applications, Wordpress Security: A Case Study*- M.Sc. Genti Rusetim
7. Henri Isufi- *Improving the Thermal Solar Energy Powered Mechanical Ventilation and the Phase Change Materials on the Electrical Consumption and Thermal   Comfort of the Bioclimate Building Envelope*- Dr. Shkëlqim Hajrulla
8. Stivi Elbi- *Robotic Arm Controller Based on FPGA*- Prof. Dr. Betim Çiço

Graduate Students' List of Theses

MSC CEN

1. Klea Kota - *Lower grade glioma radiomic feature segmentation in relation to genomic subtypes* - Assoc. Prof. Dr. Arban Uka

Thesis Abstract: Whether applied for clinical research or patient health risk assessment, our aim is to implement a brain tumor classification and segmentation approach, with a focus on extracting tumor shape and texture features and investigating potential associations with genomic subtypes. By using a combination of UNET with ResNeXt50 backbone architecture, we investigate the improvement of model performance on a basis of hyperparameter alteration, as well as determining statistically significant associations within lower grade gliomas. We achieved a Mean Dice accuracy of 95% with the UNET ResNeXt50 model in tumor segmentation and in terms of extracting radiomic features. Our strongest shape feature associations across all three types of tumors resulted between Bounding Ellipsoid Volume Ratio and RNASeqCluster ($p<0.008$), RPPACluster ($p<0.002$); Convexity Defects and CNCluster ($p<0.001$), COCCluster ($p<0.04$); Correlation and RPPACluster ($p<0.03$); Homogeneity and RNASeqCluster ($p<0.001$), MethylationCluster ($p<0.0003$), OncosignCluster ($p<0.002$); Energy and RPPACluster, MethylationCluster ($p<0.001$). Our ROC AUC scores, pointed out the best discriminative abilities found in BEVR, Equivalent Diameter, Contrast for CNCuster C3 and RPPACluster R4, as well as Extent and Convexity Defects for Methylation Cluster M1.

2. Kevin Hoxhalli - *Optimizing 3D Medical Image Segmentation Models through Architecture Tuning and Quantization Techniques: Balancing Model Efficiency and Accuracy* - Assoc. Prof. Dr. Arban Uka

Thesis Abstract: Medical image segmentation is a critical task in medical image analysis and patient diagnosis. This thesis investigates the application of the 3D U-Net architecture and its variations, EquiUnet and Att_EquiUnet, for brain tumor segmentation on the BraTS 2020 dataset. A comprehensive evaluation framework was utilized to assess segmentation performance across whole tumor (WT), tumor core (TC), and enhancing tumor (ET) regions. Results demonstrated the robust performance of the baseline 3D U-Net, achieving high accuracy (91.19%) across all tumor regions. EquiUnet did not exhibit significant performance gains over the baseline U-Net. However, Att_EquiUnet, using the CBAM attention module, showed improvements in boundary localization as evidenced by reduced Hausdorff distances. The study also explored the impact of quantization on model size and accuracy. 16-bit quantization emerged as an optimal compromise, achieving a significant reduction in model size (to 25% of the original) while maintaining accuracy and even slightly improving sensitivity in some cases. 8-bit quantization, while further reducing model size (to 6.4%), incurred a more pronounced accuracy loss, raising concerns about its suitability for clinical use. This thesis contributes to the field by offering a comparative study of U-Net variants for 3D image segmentation and highlighting the potential of attention mechanisms and 16-bit quantization for improving model performance and clinical applicability.

3. Petrika Mano - *Investigating the Impact of Degree of Freedom on Iris Recognition Accuracy: a Comparative Analysis of Traditional Algorithms and Deep Learning Techniques* - Assoc. Prof. Dr. Arban Uka

Thesis Abstract: Biometric identification relies heavily on iris recognition systems because of their high accuracy and dependability. In order to better understand how the degree of freedom affects iris recognition accuracy, this study compares state-of-the-art deep learning technique with conventional algorithms in-depth. This paper

investigates the effects of different degrees of freedom on these system's performance, taking precision, robustness, and adaptability into account. This comparative study compares the state-of-the-art deep learning approaches with classical algorithms based on well-established methodology. The goal of the study is to shed light on the advantages and disadvantages of each paradigm by offering a comprehensive knowledge of how various degrees of freedom affect iris identification accuracy. The research attempts to provide important insights into the ideal configuration of degrees of freedom for iris recognition systems, ultimately improving their overall performance and reliability through rigorous experimentation and methodical review.

4. Megi Nako - *Morphologic analysis of brain tumor using singular value decomposition for survival prediction* - Assoc. Prof. Dr. Arban Uka

Thesis Abstract: Advancments in imaging field have evolved enough to make the detection of tumor task more accurate through 3D MRI but at the same time more time consuming and complex for medical experts. Therefore, the need for a computational logic unit which never fails, process the information fast and never gets tired arises. This thesis will cover a whole mechanism of brain tumor severity determination starting from segmentation process till evaluation of eccentricity and volume. Segmentation step is performed with a 3D U-net whith some tweaked hyperparameters such as dropout values and learning rates to achieve better performance for the segmented parts. The accuracy of segmentation is reported to be 99%. Eccentricity and volume are measured over the segmented region. Estimation of eccentricity is calculated based on the energy values from the decomposition of segmented tumor in SVD where the sigma, or the energy matrix holds the values of which their ratio combined gives the eccentricity value. The dataset is part of the BRATS challenge 2020.

5. Griselda Alushllari - *Assessing different models for A549 cell segmentation and classification* - Assoc. Prof. Dr. Arban Uka

Thesis Abstract: This study investigates the performance of 28 different UNet models for segmenting and determining cell confluence in brightfield microscopy images, combining various hyperparameters such as loss functions, batch sizes, and epochs. Ground truths for the images were manually annotated which was another challenge of this study. Among the models, two of them were chosen since they achieved high accuracy results. The study also evaluates the effects

of different biomaterial density on cell growth using these models. The results showed that low-density biomaterials (5 ug) were non-toxic, while medium (20 ug) and high concentrations (50 ug for PAR30 and 500 ug for PLL250) significantly suppress cell growth, with confluence ratios dropping below 70%. Additionally, various classification models were tested on datasets with different cell images and biomaterial densities. Principal Component Analysis (PCA) and hybrid models were found to significantly improve classification accuracy, particularly in binary classification tasks, which achieved accuracies nearing 98%. The study highlights the performance of different model architectures, manual annotation for ground truth, and dimensionality reduction techniques in enhancing the accuracy of cell confluence segmentation and biomaterial toxicity assessment.

6. Alban Xhepi - *Quantitative analysis of THP1 Cell confluency and proliferation under temporal and pharmacological conditions using deep learning techniques* - Assoc. Prof. Dr. Arban Uka

Thesis Abstract: The proliferation and behavior of THP1 cells, a human monocytic cell line, are critical in understanding various biomedical and pharmaceutical applications. This thesis presents a comprehensive analysis of THP1 cell images categorized into different states: 'D2_PAR30' treated with varying concentrations of the drug (5μg, 20μg, 50μg, and 500μg). The primary objectives are to develop and optimize UNet models for accurate cell segmentation, quantify cell confluency, and analyze cell health based on confluency metrics across these categories. Initially, the THP1 dataset, comprising unique and newly labeled cell images, was preprocessed. Original images (1080x1024) were cropped into smaller sizes (128x128, 256x256, and 512x512) and augmented to enhance dataset diversity. These preprocessed images were then used to train a UNet model for cell segmentation, with the 256x256 dataset yielding the best performance. Hyperparameters, loss functions, batch sizes, and epochs were carefully experimented with to optimize   the   segmentation   accuracy. To optimize the model for edge devices, pruning and quantization techniques were employed. Pruning reduced the model size from 355 MB to 100 MB, while quantization further decreased it to 35 MB, making the model significantly more efficient without compromising accuracy. A pipeline was developed to automate the analysis process. Original cell images were divided into 256x256 segments, each segment's cell confluency and area were predicted, and the results were aggregated to assess the overall confluency and cell area of the original image. This method

facilitated the evaluation of cell proliferation and confluency changes over time and under different drug treatments, enabling differentiation between healthy and unhealthy cells based on confluency.

The analysis revealed distinct patterns of cell confluency and proliferation associated with temporal changes and drug treatments. By testing 10 images from each category, significant insights were gained into the cellular response under different conditions. These findings contribute to the broader understanding of THP1 cell behavior and provide a foundation for future research in cellular biology and pharmacological studies.

7. Tea Papa - *Security on IOT Devices Implementing a Cryptography Algorithm using Rubik's Cube* - Assoc. Prof. Dr. Dimitrios Karras

Thesis Abstract: Because more companies and individuals were transferring data to the cloud as a result of the COVID epidemic, the significance of online communication has grown dramatically. We all depend on the net to transfer data whenever we need to send it to a different individual or organisation. It's critical that sensitive information cannot be easily captured or hijacked and used against undesired parties when sent over the internet. Businesses and individuals can use encryption to send private information over the web to ensure only the intended recipient can access it. Mathematical equations are used to modify the data in order for any cryptography technique to encrypt and decode sensitive material. The intricacy of these equations determines how much more of the device's resources can be utilised. Because so much computational power is required, data security in the Internet of Things environment is challenging. Quantum computation is a further issue with the cryptography protocols in use today. As a result, new algorithms must be developed that take into account the limitations of IoT devices while maintaining the level of security offered by robust algorithms like AES. An IoT device will be utilised for testing an innovative cryptography algorithm that will be suggested to address this issue, and its safety and utilisation of resources will be compared to the best algorithms now in use.

8. Kejsi Kostdhima - *Application of Spatial attention in convolutional neural networks for accurate classification of kidney abnormalities* - Assoc. Prof. Dr. Dimitrios Karras

Thesis Abstract: Accurate diagnosis of kidney abnormalities, such as tumors, stones and cysts is essential for the effective treatment of these diseases. Deep Learning has shown great potential in improving the diagnosis of medical images. In this paper, we present an advanced method for the classification of kidney abnormalities by using Convolutional Neural Networks (CNN) integrated with Spatial Attention mechanisms. Our approach focuses on improving the performance of the classification model by identifying and focusing attention on the important areas of the images.

Our model is trained and tested on a dataset of renal scan images. It contains different categories of abnormalities. Experimental results show that the integration of Spatial Attention mechanisms in CNN significantly improves the classification performance compared to traditional methods. This approach provides a powerful tool. It can be used by healthcare professionals to efficiently diagnose kidney abnormalities.

9. Bashkim Dakoli - *Scada: attacking systems and defense policies in depth in linux virtual machine* - Assoc. Prof. Dr. Dimitrios Karras

Thesis Abstract: This thesis explores the vulnerabilities and defense mechanisms of Supervisory Control and Data Acquisition (SCADA) systems. It is consolidated with a focus on Linux virtual machine environments. SCADA systems are critical for industrial automation and control. It is making them prime targets for cyber-attacks. The research encompasses a comparative analysis of various SCADA testbeds. This to identify the most effective platform for simulating and testing security measures. Additionally, the study investigates common SCADA attack vectors. Also evaluates different types of SCADA malware. We aim providing a comprehensive understanding of the threats faced by these systems. By simulating attacks and deploying malware in a controlled environment, the research assesses the effectiveness of various defense mechanisms. It is including intrusion detection systems and network segmentation techniques. The findings aim to inform the development of more resilient SCADA systems. Also enhance the overall security posture of industrial control environments.

10. Ilva Xhaferri - *Emotion recognition with EEG using Artificial Intelligence* – Dr.Florenc Skuka

Thesis Abstract: Emotion recognition has gained major importance in recent years, with applications in human-computer interfaces, affective computing, and numerous medical applications. To capture and analyze the emotional states, several modalities are used, where one of the most dominant is Electroencephalography (EEG). Facilitated by the advancements in EEG acquisition technologies, as well as in the Artificial intelligence field, Emotion Recognition with EEG data has attracted many researchers. This work aims to implement a subject-independent model that utilizes EEG to perform Emotion Recognition on DEAP and DREAMER datasets. It attempts to find the right combination of processing methods, feature extraction, feature selection and classifier that generalize well on unseen data without having excessive computational costs. In this thesis several Machine Learning models are implemented, along with a one-dimensional CNN model which succeeds in providing a reliable performance for the task of Emotion Recognition with EEG.

11. Laura Mucaraku - *Breast Cancer Detection using Deep Learning* - Dr.Florenc Skuka

Thesis Abstract: In nearly 95% of the countries worldwide, breast cancer is the main reason of fe- male deaths. The impact that this disease has on human body, depends on the stage in which it is diagnosed, being a life-taking disease if not diagnosed in time. This Thesis makes an analysis on both traditional and revolutionary methods used for Breast Cancer Detection and Classification, and proposes the best model for different scenarios, based on the availability of data, human expertise, and time limitations. Available datasets that contain samples of Breast Cancer cells are also analyzed, and all the sources are collected and provided. The methods analyzed are classified into three main categories: Supervised, Unsupervised, and CNN methods. Four methods are analyzed and tested with Breast Cancer Wisconsin Diagnostic (WDBC) dataset from the first category: Random Forest, K-Nearest Neighbor, Naive Bayes, and Support Vector Machine. From the Unsupervised Learning Methods, are analyzed and tested with the same dataset: Auto-encoders, and Self-Organizing Maps. Two CNN models, UNet and ResNet are also built and tested with Breast Ultrasound Images Dataset. Each method is tested several times with different parameter values, with the aim of finding the combination of parameters that generates the best results for the available datasets. From the Supervised Methods Support Vector Machine achieved the highest ac- curacy of 99%. Auto Encoder won against the SOM as a Unsupervised Method with an accuracy of 98%, and within the CNN methods, UNet performed better with an accuracy of 97.44%.

12. Darlina Beqiri - *3 D Semantic segmentation in urban areas using deep learning* - Dr.Florenc Skuka

Thesis Abstract: Accurate and efficient 3D semantic segmentation plays a vital role in analyzing and understanding complex urban environments. This paper explores the application of deep learning for 3D semantic segmentation in urban areas. We delve into the implementation of one promising network: RandLA-Net, analyzing their architectural details and potential benefits for this specific task. Through experimentation with publicly available urban datasets, we explore the effectiveness of these methods in achieving accurate semantic segmentation. We present and analyze the obtained results, providing insights into the strengths and limitations of both approaches within the context of urban 3D segmentation. This work contributes to the ongoing research in this field by showcasing the practical implementation of RandLA-Net, and by offering valuable insights into their performance for understanding urban scenes.

13. Sara Ranxha - *3 D Semantic Segmentation of indoor objects performed on 3D point cloud* data - Dr.Florenc Skuka

Thesis Abstract: Indoor object segmentation plays a crucial role in robotics, autonomous navigation, and augmented reality. This work explores the effectiveness of deep learning methods for extracting objects from 3D point cloud data in indoor environments. We conducted an experimental study implementing PointNet and PointNett+, two state-of-the-art approaches, and evaluate their performance on S3 DIS benchmark dataset. Additionally, we provide a comprehensive overview of current techniques employed for indoor object detection, highlighting their strengths and limitations. Our analysis focuses on comparing the accuracy, efficiency, and scalability of PointNet and PointNet++, by applying optimization techniques in order to maximize performance, Furthermore, we identify areas for future research, emphasizing the need for improved robustness against cluttered environments and diverse object appearance. This study aims to advance the field of working with point cloud data by offering valuable insights into the effectiveness of existing methods and paving the way for further developments.

14. Endi Qose - *Augmented-Reality enhanced cultural heritage preservation using point-cloud data* - Dr.Florenc Skuka

Thesis Abstract: In today's world there is a growing urgency to protect artifacts and important landmarks due, to environmental factors and human activities. As a result, experts and

conservationists are reevaluating their methods realizing the need for approaches to address the challenges facing cultural sites. In the realm of technology advancements, tools like 3D point cloud data, laser scanning and augmented reality (AR) have become essential for preservation efforts. These tools go beyond reacting to issues by taking steps to prevent risks. The use of 3D point cloud data allows for replicas of archaeological sites and structures helping conservationists preserve intricate details that are at risk of damage. AR technologies play a role in enhancing preservation work by offering experiences that support virtual exploration and education promoting greater awareness and respect for our shared past. Central to these pursuits is a commitment to safeguarding cultural heritage that goes beyond simple preservation efforts.

Researchers aim to deepen our understanding of humanity's tapestry through interdisciplinary collaboration and innovative methods. Their goal is to develop solutions that can be passed down through generations ensuring access, to and appreciation of our collective heritage. At the intersection of preserving heritage and embracing technology this academic study offers a broad perspective, on the use of 3D point cloud data and augmented reality. It opens up ways to understand and protect our shared heritage.

15. Lutfie Veisllari - *Predicting customer churn in Vodafone Company* – Dr. Shkelqim Hajrulla

Thesis Abstract: Customer churn is one of the most critical issues in telecom companies. As it directly affects the company's revenue, arises the need of finding ways to predict and then prevent this kind of phenomen. Machine learning can highly contribute in developing algorithms that can be used in various companies that can firstly indicate factors affecting and then create patterns. The study aims to emphasize and investigate a conjecturing analysis of most of the predictive algorithms used for customer churn prediction, in telecommunication. Including the key factors affecting this kind of customer behavior, the causes and the consequences for the companies and concluding with how it can be predicted using machine learning algorithms, giving a hand to the companies to take measures before they experience their customer loss. We will use a real dataset obtained by an Albanian telecom company, Vodafone. The algorithm tested will be Logistic Regression and Random Forest. Models will be compared accordind to some evaluation metrics

and the outperforming model will our suggestion to the company.The study brings in focus the useful indications for telecommunication companies and suggests some marketing strategies that use algorithmic outcomes to reduce churn rates. Within both of the algorithms Random Forest showed an outstanding performance with an accuracy of 94%, while the Logistic Regression struggled at an accuracy level of 85%. These results indicated that Random Forest is a better practice for this classification. As the dataset obtained consists of mainly categorical data, it is easier for Random Forest to deal with it, while Logistic Regression struggles when it comes to categorical data. These results will serve as a helpful insight for telecom companies to face the issue of customer churn.

16. Lejdi Loci - *Comparison of Deep Learning Algorithms for Sign Language Recognition –* Prof. Dr. Bekir Karlik

Thesis Abstract: Communication has an essential impact in facilitating interaction between individuals. It is a crucial and fundamental way of expressing feelings, thoughts, and opinions. The community of deaf people relies on visual communication of information which uses sign language and speechreading. The significant application of sign language is now a vital part of the hearing-impaired culture. Sign language recognition systems implement machine learning techniques to convey the hand pattern movement into an understandable message. This thesis aims to make a comparative study between two deep learning models, more specifically, the Convolutional Neural Network (CNN) architecture used as feature extractor and classifier and the hybrid model CNN – Support Vector Machine (SVM), which uses the CNN model as feature extractor and SVM algorithm for the classification process. The paper is divided into two parts, the first one lays into a comprehensive study of both models' development, architecture, and design. The second part is about the practical comparison of methods using coding to observe their performance. The methodology used to conduct this study is a combination of literature review and practical application of two used models in data classification and prediction tasks. The techniques used for this project include both the qualitative approach which is used in the first section and the quantitative approach employed in the other section. The thesis dives deeply into the architecture of the models to ensure that each model will perform at maximum capacity so the comparison will be held under the same environment and restrictions. A real-world dataset is taken under consideration to validate the performance of each of the used

models.

In conclusion, we emphasize the importance of using machine-learning techniques to enhance the interaction of deaf people within society, as well as the efficiency of the model that may be applied for other data classification and prediction tasks.

17. Gerta Bushi - *Comparison of Deep Learning Algorithms for Leukemia Cancer Cell Classification* - Prof. Dr. Bekir Karlik

Thesis Abstract: Leukemia is a cancer-related disease which causes the death of individuals worldwide, regardless of age and gender. It affects the blood and bone marrow, thus leading to the abnormal production of immature white blood cells. Some of the factors that might contribute to leukemia's development might be related to genetics, radiation or chemical exposure, infections, or immune system disorders. A reliable and fast diagnosis of leukemia is crucial for a successful treatment to ensure high survival rates and low number of deaths. Nowadays, blood tests are widely used for diagnosing leukemia. Patients undergo a complete blood count (CBC) to evaluate the count of blood cells present. In cases of leukemia, CBC reveals abnormal count of white blood cells (WBC), red blood cells (RBC) and platelets. Additionally, these blood cells are examined under a microscope. Based on the results, immature or abnormal-looking white blood cells may indicate leukemia. However, this type of diagnosis is often slow, time-consuming and less accurate, mainly because under microscopes, the shape of leukemic cells might seem similar to the shape of normal white cells, therefore making the diagnosis prone to errors.

Therefore, in this thesis, we will focus on the deep learning algorithms which have shown promising results in diagnosing leukemia cells. Some of these algorithms include Convolutional Neural Networks (CNNs), which in the context of leukemia cells diagnosis, can be trained to classify images of blood smears into normal blood cells or leukemic blood cells. The second algorithm includes Optimized Deep Recurrent Neural Networks (ODRNNs), which can be used to analyze time-series data such as videos of cell movements or changes in cell morphology over time. The last algorithm is Transfer Learning, which is applied by fine-tuning a pre-trained neural network on a dataset of leukemia cells. This approach helps improve the performance of the model, especially when limited labelled data are available for training.

18. Bora Tafa - *Advancements in Disease Detection through Neural Network in Medical Image Analysis* - Prof. Dr. Bekir Karlik

Thesis Abstract: The use of neural networks, specifically convolutional neural networks (CNNs), in medical image processing has resulted in substantial breakthroughs in illness identification. This study digs into the use of neural networks to analyze medical images and identify disorders, emphasizing the transformative influence these technologies have had on medical diagnostics. By leveraging deep learning architectures such as ResNet, Inception, and DenseNet, researchers have achieved substantial improvements in the accuracy and efficiency of disease identification across various imaging modalities, including MRI, CT, X-ray, and ultrasound. In-depth analysis of neural networks' function in vital tasks such organ segmentation, tumor detection, and pathology categorization is provided by this study. It is clear from a thorough examination of these applications that deep learning models can perform better than conventional image analysis methods, providing increased accuracy and quicker processing times. This study highlights the critical contributions that neural networks have made to the area by demonstrating their capacity to process medical images with intricate patterns and minute variations that are frequently difficult for traditional techniques to handle. Additionally, this study discusses the advantages and disadvantages of applying deep learning to medical picture processing. Important topics like data scarcity, model generalization, and interpretability are covered in detail. Interpretability is still a major challenge since neural networks' "black box" nature can make it difficult for physicians to completely trust and utilize these technologies because it obscures the decision-making process. The study highlights ongoing efforts to enhance the transparency and explainability of neural networks, aiming to build more robust and interpretable models. Model generalization is yet another important topic this study examines. For a neural network to be clinically useful, it must function effectively on a variety of imaging devices and patient demographics. This paper examines many approaches to enhance generalization, such as utilizing extensive and varied datasets and sophisticated training methods. One major obstacle is the lack of data, especially when it comes to rare disorders. The study addresses methods to lessen this problem, including transfer learning, data augmentation, and the creation of synthetic data using strategies like generative adversarial networks (GANs). This survey offers a comprehensive overview of the quickly developing subject of neural network applications in medical imaging by incorporating important findings from reviews and prominent papers. It highlights how deep learning has the potential to revolutionize the healthcare industry

and shows how better patient outcomes can result from more advanced diagnostic capabilities. The study demonstrates not only the present successes but also the potential for neural networks to transform disease diagnosis in the future. In the end, this study adds to our knowledge of how neural networks are changing the way that diseases are identified. It makes a strong argument for the application of deep learning technologies in clinical settings and provides information on potential future developments and advancements that could improve medical diagnostics even further. Through the continued development and refinement of neural network models, the potential to achieve more accurate, efficient, and accessible healthcare becomes increasingly attainable, heralding a new era in medical image analysis and disease detection.

19. Sara Luka - *Securing sensitive bank data by using encrypted algorithms* – Prof.Dr.Betim Çiço

Thesis Abstract: With the increasing of technology and computer network, one major challenge or concern is confidentiality security and privacy. A potential way of securing authentication, identification and integrity is Cryptography. There are many techniques or aspects to transfer data safely through internet such as protection of passwords or secure payments transactions. Also one of these important techniques is even the cryptography to protect sensitive data. There are some techniques used in Cryptography which are used from Banks to ensure high security and privacy of data. Banks are always concern to communicate secret data/transactions through channel due to the security fact but Cryptography can assist in providing privacy while communicating important   records/data. This paper presents a fair comparison among three algorithms of Cryptography. Each algorithm uses a key to maintain the sensitive data and use it for decryption. This comparison will consist of different factors that will be analyzed in details to determine the most effective algorithm to be used for transferring sensitive and private data among different channels.

20. Marjela Proda - *Deep learning driven sentiment analysis of E-commerce consumer impressions using advanced feature extraction techniques* - Prof.Dr.Betim Çiço

Thesis Abstract: E-commerce has emerged as one of the biggest players in the current digitized business environment, and this has led to the creation of large amounts of consumer data through consumer reviews and feedback. The objective of this master thesis is to identify the consumer impression in the e-commerce data by applying sophisticated feature extraction techniques and

sentiment analysis based on deep learning approaches. This paper seeks to explore the elements of consumer sentiment as captured in online reviews, which is vital in increasing customer satisfaction and sales.

The research problem seeks to establish the performance of different machine learning models in sentiment analysis of e-commerce reviews and feature extraction techniques such as TF-IDF and Word2Vec. The main goal is to identify which set of machine learning models and feature extraction methods gives the best accuracy and efficiency in sentiment analysis. The methodology includes a systematic review of the literature in order to identify the current sentiment analysis methods and their uses in e-commerce. The analysis utilises a collection of Amazon product reviews, which is first cleaned, tokenized, and balanced before being used in the study. Thus, four machine learning models, including Support Vector Machine (SVM), Long Short-Term Memory (LSTM), Convolutional Neural Network (CNN), and Bidirectional Encoder Representations from Transformers (BERT), are chosen for the comparison. These models are then optimized and assessed with numerous evaluation metrics like accuracy, precision, recall, and F1 score.

Empirical Findings show that deep learning models especially BERT exhibit higher accuracy than traditional machine learning models in the sentiment analysis task because they can analyze the context and language features of the text. BERT provided the highest accuracy thus showing its effectiveness in handling the sentiment analysis of consumer reviews. The study also focuses on the significance of feature selection where TF-IDF and Word2Vec improve the results of the model.

The study outcome shows that the combination of the advanced feature extraction technique with the deep learning model is useful in developing a robust framework for sentiment analysis in the e-commerce context. This approach allows organizations to acquire a better understanding of customers' tendencies and issues, which helps in decision-making and improves customer engagement. Further research will focus on the development of the hybrid models and live sentiment analysis to improve the overall performance and usability of the proposed approach for dynamic e-commerce scenarios.

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customers' tendencies and issues, which helps in decision-making and improves customer engagement. Further research will focus on the development of the hybrid models and live sentiment analysis to improve the overall.

21. Ketjona Shameti - *Comparison of methodological approaches: CRISP-DM versus Osemn methodology using linear regression and statistical analysis* - Prof.Dr.Betim Çiço

Thesis Abstract: AI has contributed in changing many industries, providing new and inventive solutions to complicated challenges. Nevertheless, efficient application of AI projects needs a structured and combinative technique in order to be updated with the latest advances in the sector. There are two methodologies, the CRISP-DM and OSEMN, that is used to explain the data science project life cycle on a high level. The six-phase method framework known as the Cross Industry Standard Process for Data Mining (CRISP-DM) accurately depicts the data science life cycle. On the other hand, the overall workflow performed by data scientists is categorized under the OSEMN methodology.

In our study, we examine both CRISP-DM framework and OSEMN framework and we perform a comparative analysis. We have conducted an empirical study where the experiment was organized into three study cases, each provided insightful results whether which methodology has better model fit and which has a more accurate prediction rate. The study cases suggested that CRISP-DM offers a better performance and accurate approach. All things considered, this research advances our knowledge of best methods, providing practitioners and researchers with direction on which strategy is best suited for their data analysis assignments.

MSC ECE

1. Ersi Oruci - *Advanced Signal processing techniques to enhance compression and transmission of multimedia content over electronic and telecommunication networks* - Assoc. Prof. Dr. Dimitrios Karras

Thesis Abstract: The relentless growth of multimedia content in electronic and telecommunication networks has fueled the demand for efficient image and video compression techniques. This research delves into the realm of signal processing, aiming to investigate advanced methodologies that enhance the compression and transmission of multimedia content. The study begins by scrutinizing signal processing theories, with a specific focus on frequency transformations, compression algorithms, and the integration of artificial intelligence. The objective is to discern their impact on the reduction of multimedia file sizes while preserving quality during transmission. An in-depth analysis, employing recognized metrics, is undertaken to measure the performance and effectiveness of these techniques. In conclusion, this comprehensive exploration serves to enrich our understanding of signal processing for image and video compression. It not only contributes to the academic discourse but also provides a practical foundation for advancements in the realms of electronic networks and telecommunications, catering to the ever-growing demands for efficient multimedia content management.

2. Orges Vrapi - *Pandemic within a pandemic: the dominance of cyber threats over covid - 19 challenges and solutions* - Assoc. Prof. Dr. Dimitrios Karras

Thesis Abstract: The COVID-19 pandemic not only caused disruptions in global health and economics but also intensified weaknesses in cyberspace, resulting in a significant increase in cyber threats. This article examines the convergence of the COVID-19 pandemic and cybersecurity, assessing how the pandemic has heightened cyber threats and the subsequent difficulties encountered by enterprises. This text emphasizes the importance of cybersecurity in preventing, detecting, and reacting to attacks. It specifically underscores the relevance of

maintaining data confidentiality, integrity, and availability (CIA triad) during a crisis. The paper offers a thorough analysis of the predominant cyber hazards throughout the pandemic, encompassing malware, ransomware, phishing, and DDoS assaults, and their consequences on vital sectors like healthcare. Additionally, it analyzes the management challenges and remedies in dealing with these risks, with a specific emphasis on the need for strong cybersecurity safeguards and optimal strategies. This study seeks to analyze the repercussions of cyberattacks and provide insights into enhancing cybersecurity measures for enterprises in the post-pandemic period. Its objective is to assist organizations in fortifying their defenses against ever-changing cyber threats. The paper provides ideas for enhancing cybersecurity resilience in the digital world, emphasizing the need of continuous monitoring and adaptability to evolving threats.

3. Megi Kondi - *Best defence practices against web server attacks by using and evaluating NSM tools* - Assoc. Prof. Dr. Dimitrios Karras

Thesis Abstract: The internet has influenced every aspect of daily life in the modern digital age, impacting the personal, professional, and social worlds. Because of its existence, communication, business, healthcare, and education are just a few of the industries that benefit from its unparalleled interaction, information availability, and convenience. Nonetheless, the extensive reliance on the internet poses noteworthy cybersecurity obstacles. Cybersecurity refers to the procedures and policies put in place to guard against attacks, damage, and illegal access to networks, computers, applications, and data. Sturdy cybersecurity measures are essential to protect private data, preserve trust in digital networks, and protect sensitive information as cyber attacks continue to grow in complexity and frequency. The purpose of this paper is to outline the best information security procedures for both consumers and companies alike. It does this by demonstrating how to use Network Security Monitoring (NSM) methods to fully view their own data and anticipate cyber threats.

4. Ergi Plloci - *Mining Safety Microcontroller System* - Prof.Dr.Betim Çiço

Thesis Abstract: Throughout the communist era that lasted from the Second World War until 1989, Albania was one of the primary producers of chromite in the world. In the 1980's, Albania was the third

largest chromite producer in the world with over one million tons produced annually. Some 80% came from the Bulqiza mines. This chromite was, and still is, recognized as mining area with the finest quality in the world due to its high chrome to iron ratio that commonly exceeds 2.5:1 with best grades in excess of 3.3:1. This places Albania along with Kazakhstan and Turkey as countries that produce high grade (+38% Cr2O3) and high-quality premium-priced direct shipping ore that goes into production of High Carbon Ferrochrome. One of the biggest assets of this industry is Bulqiza Mine. This mine is a ready-to-sell product, but also the primary raw material for our metallurgic Plant of Elbasan producing high-carbon Ferro – Chrome. The exploitation system in Bulqiza Mine is that of "sub-floors" and the ore body thickness in the richest area of the Mine can mount up to 6-7 m. This provides good conditions for mining companies to maintain satisfactory quality and quantity ratios. The chrome ore comes out of the underground and then undergoes a series of selecting processes. It is finally divided in ore fractions.

5. Dorjan Dafku - *Conceptualization, planning, and programming of an environmental monitoring station using ArduinoIDE and nextion editor* - Prof.Dr.Betim Çiço

Thesis Abstract: This paper explores the transformative role of microcontrollers and sensors in modern electronic systems, with a focus on environmental air quality measurement. By leveraging the programmability and integration capabilities of components like the Arduino Pro Mini, coupled with various air quality sensors (e.g., PM2.5, CO2, humidity, temperature), we illustrate how these technologies enhance efficiency, accuracy, and flexibility in data collection and analysis. Through a systematic examination of over 21 case studies and research papers, we demonstrate the practical applications and benefits of these systems in diverse fields such as automation, healthcare, and environmental monitoring. Our goal is to provide a comprehensive understanding of the interplay between microcontrollers and sensors, highlighting recent advancements in IoT protocols that enable remote monitoring and control. Ultimately, we aim to develop a low-cost, high-precision, and scalable air quality monitoring system that can effectively measure and record pollutant concentrations, offering valuable insights for improved air quality management.

6. Nasho Themeli - *Developing and Implementing into practice an environmental monitoring station with an Arduino Pro Mini* - Prof.Dr.Betim Çiço

Thesis Abstract: This study focuses on the development and practical implementation of an environmental monitoring station utilizing the Arduino Pro Mini microcontroller. The station is designed to measure and record various air quality parameters such as PM2.5, CO_2, VOCs, ozone, temperature, humidity, light intensity, and UV radiation. The system integrates multiple sensors, including the PMS5003 for particulate matter, MH-Z19 for CO_2, MP503 and MQ-131 for VOCs and ozone, and DHT22 for temperature and humidity. The Arduino Pro Mini serves as the central microcontroller, processing data from these sensors and transmitting it to a Nextion touchscreen display for real-time monitoring and analysis. The study reviews 17 related research papers to identify current trends, resolved and unresolved issues, and future directions in the field of microcontroller-based environmental monitoring systems. The results highlight the system's capability to provide accurate and real-time air quality data, demonstrating its potential for broader ecological monitoring and public health applications. Future work aims to enhance sensor integration, system scalability, and IoT connectivity for remote monitoring.

7. Inva Kushta - *Constructing, Installing and Operating a Robotic Arm Digitally* - Prof. Dr. Gëzim Karapici

Thesis Abstract: The investigation of rotational counterweights as an arm actuation technique is the

focus of this thesis. The robotic arm is propelled by both inertial and gravitational forces produced by the counterweight attached on connections. Articulated robots are frequently propelled by electric motors to control the robot motion, suitable regulating signals and temporal synchronization are needed. The electric motors must be operated in a precise order and for a certain period of time according to the motion control system specifications. This research looks at the motion control of an articulated control, which may be used for precise positioning and has applications in many different sectors. The requirements that must be satisfied are listed in order for an articulated robotic arm to be positioned precisely. An ATmega32L microcontroller-based controller circuit is created to control the motor motion. It ensures more cost-effective operation, lower circuit sizes, increased accuracy, and speed flexibility when compared to alternative approaches. The entire system is

powered by three H-bridge circuit-controlled DC motors. A controller circuit has been designed and built to control the articulated robot arms three degrees of freedom.

List of Incoming & Outgoing Students

(Student Name, & Surname: Name of Home & Host University, Country, Duration of Stay)

Incoming students

		Graz University of Technology	Mobility Training	CEN	CEEPUS Network		Erasmus+
Donat	Kocinaj						

Research Areas and Research Groups

The research group established by the Department of Computer Engineering:

a. Research Areas: Computer Vision and Machine Learning

b. Research Groups: Arban Uka, Florenc Skuka, Xhoena Polisi, Griselda Alushllari

List of Publications

There is no publication during the 2023-2024 academic year for Computer Engineering Department.

Participation of Academic Staff in Academic Events

Assoc. Prof. Dr. Arban Uka- "European X-ray Free Electron Laser (EU XFEL) seminar held in Hamburg, Germany on September 12, 2023.

Dr. Florenc Skuka -1st Management Committee Meeting held in Brussels, Belgium during October 02-03, 2023, in the framework of the COST Action: CA22137- "Randomized Optimization Algorithms Research Network (ROAR-NET).

Assoc. Prof. Dr. Arban Uka- participated in a Scientific Committee Meeting at the University of Studies "G. D. Annuzio" Chieti-Pescara, in Italy held on January 29-30, 2024.

Prof. Dr. Betim Çiço- participated at the Mediterranean Conference on Embedded Computing (MECO 2024), held in Budva, Montenegro during June 11-14, 2024.

Training

"Tirana Tech Open 2 EXPO 2023" during November 02-03, 2023, in Tirana.

Cybersecurity training during December 13-15, 2023, at EPOKA University. Topics covered included: penetration testing, security evaluation of different computing units (IoT devices and PC).

Support, Resources & Representation

List of Students' Internships

BA CEN

1. Ajla Mansi at "Turgut Ozal"
2. Ajna Osmani at "Dominusoft"
3. Alesia Çela at "Vodafone Albania"
4. Alessio Gega at "MAGOWARE"
5. Alketa Alia at "Ritech"
6. Alvjo Dauti at "Bashkia Kavaje"
7. Anjeza Kanxha at "Dominusoft"
8. Anri Shahini at "Crystal System"
9. Anxhelo Shtaro at "Metanow"
10. Arbër Kordhoni at "APT Cable Television"
11. Ardit Harizi at "Softics Data Science"
12. Arla Mitrushi at "Prokuroria e Shkalles se Pare"
13. Aron Subashi at "Illyrian Pantheon"
14. Aurel Kulemani at "Drejtoria Vendore e Policise"
15. Bled Ibrahimi at "Swan Paper Products"
16. Brajan Gjorga at "Dega Doganore Elbasan"
17. Daniela Bardhoshi at "ASIG"
18. Danja Korreshi at "Communication Progress"
19. Dea Hasanaj at "Crystal System"
20. Deni Tusha at "Facilization"
21. Edvana Blloshmi at "AGIKons shpk"
22. Elis Brahaj at "Euronews Albania"
23. Elisa Koka at "InfoTelecom"

24. Emanuel Hamzaj at "Synapse ATS"

25. Emilja Beneja at "Balfin Group"

26. Endro Ferizolli at "Softics Data Science"

27. Englan Muça at "Division5"

28. Enkel Vathi at "AEM SHPK"

29. Enriko Hyka at "Transcom WorldWide Albania"

30. Erblin Boletini at "Raiffeisen Bank Albania"

31. Ergi Hyska at "Laconics"

32. Eris Leksi at "IVA Electronik"

33. Ersi Shkurti at "Helius Systems"

34. Fjorela Driçi at "Flex Business Solutios"

35. Florin Kola at "Albania Lab Shpk"

36. Frenk Kotoni at "Cryptonet Services"

37. Gledi Xhafaj at "Info Business Solutions"

38. Geri Dakavelli at "Albania Lab SHPK"

39. Gerjan Haxhija at "DOVA SHPK"

40. Helios Çela at "Tibo"

41. Igli Zhupa at "Basha Co SHPK"

42. Ilir Gjylbegaj at "Me-Ra AgroTech"

43. Ina Faqolli at "Elite Solution"

44. Indrit Vani at "CCS-Computer and Copier Systems"

45. Jon Kurmaku at "BKT"

46. Kasem Xhakanaj at "Metanow"

47. Kejsi Doku at "Erusoft"

48. Klajdi Gazidedja at "Tr3bit Computers"

49. Klajdi Vodha at "Softics Data Science"

50. Klea Gjoshi at "ArkIT"

51. Kora Sulo at "Info Business Solution SHPK"

52. Kostantino Tereziu at "Monx Lab"

53. Krisli Kulari at "Togo SHPK"

54. Lorenc Turku at "Metanow"

55. Luan Braja at "Tirana Bank s.a"

56. Martin Hoxha at "WOCS"

57. Marvin Kika at "EPOKA University"

58. Megi Dervishi at "PSZ Albania"

59. Rei Paçrami at "FIRST shpk"

60. Rezart Toli at "Advanced Business Solutions"

61. Rudi Zenelaj at "DevExpress"

62. Serxhio Elezi at "Tr3bit Computers"

63. Shila Subashi at "SFC Alb"

64. Sindi Ziu at "EPOKA University"

65. Tea Aleksi at "Bashkia Tirane"

66. Uendi Muça at "Albsig sha"

67. Xhoni Dërvishi at "Kuvendi I Republikes se Shqiperise"

68. Xhulia Myftaraj at "Logical shpk"

69. Xhulio Kreku at "Servis Landi"

BA ECE

1. Dionis Ronaldo Hasa at "VAS GROUP"

2. Elio Mata at "Datech L.T.D''

3. Enio Abazi at "Hellas Service.SHPK"

4. Enio Koçi at "Fondi Shqiptar i Zhvillimit/Agjencia Ekonomike Mbeshtetese"

5. Enton Kamata at "Elektrosek"

6. Ernest Priftaj at "Cedar-ENG"

7. Euxhen Dollija at Servis celular "Cuku"

8. Geri Shuli at "BBT- Beta Balkan Team"

9. Gersi Arapi at "TBS96"

10. Hajrije Brami at "We Web Shpk"

11. Henri Isufi at "TBS96"

12. Henri Vishka at "Abi bank"

13. Ilia Ekonomi at "KALLFA SHPK"

14. Arli Shehu at "Automatic Transmission Service Leka"

15. Lorenco Mingla at "SYNAPSE ATS SH.P. K"

16. Mario Jakupas at "Service Alpha Mobile"

17. Rozalinda Brahollari at "Elektrosek"

18. Saimon Bena at "Unicom SH. A"

19. Sara Zahaj at "Elektrosek"

20. Stivi Elbi at "Radio SOL"

21. Tedi Prifti at "School of Informatics"

22. Toni Xhori at "TBS96"

23. Xhulian Cene at "Smart Processes"

24. Alban Berisha at "Albanian Satellite Communications"

25. Derin Daja at "ALBITAL-CANON"

Student Best Success Stories

Office Holders

The department would like to first thank all the colleagues for their valuable contribution to teaching, research activities and other student-related activities.

We would like to thank Mrs. Fjona TOPÇIU and Mrs. Brikena HASA for their valuable contribution as department coordinators. Their hard work and patience were essential in fulfilling all the tasks for the support and management of three bachelor programs, three master programs and one PhD program. Their professional communication and timely execution of tasks has been as a strong support for the whole department.

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.

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