This booklet introduces the Mechanical Engineering Department with Mechatronics Engineering Undergraduate Program of Eastern Mediterranean University. It includes information about the department for the academic year 2016-2017. This booklet outlines the procedure and guidelines that should be considered when seeking academic advice.

Mechanical Engineering Department
Eastern Mediterranean University
Famagusta, North Cyprus
via Mersin 10 Turkey
Tel: +90 392 6301210
Fax: +90 392 3653715
E-mail: medept@me.emu.edu.tr
Web: http://me.emu.edu.tr

Welcome Note by Head of Department

Dear Students,

I would like to welcome you to the Department of Mechanical Engineering. I am pleased that you have chosen our department and I hope that you would find the university experience in our department exceedingly rewarding. Our department has a distinguished record in both teaching and research. Our Mechanical Engineering BS program is accredited by ABET and the accreditation of the Mechatronics Engineering Program is in process.

Mechatronics Engineering undergraduate program is administered by the Mechanical Engineering Department and jointly supported by the Mechanical Engineering Department and Electrical and Electronics Engineering Department since 2009-2011. Mechatronics is an inter-disciplinary field, combining traditional electrical, electronic, mechanical, control and computer engineering skills, applied to solve problems that bridge the boundaries between these disciplines, requiring multi-skilled practitioners. The objective of the program is to inculcate a flexible, multi-technological approach in our graduates by imparting the knowledge of mechanical, electrical and electronics, and computer engineering.

Together we strive to provide you with high-quality engineering education and hope that all our graduates have a strong education and practical background, with teaming and leadership skills. We believe in a broad education which instills a sense of lifelong learning, community and leadership values in students, together with an appreciation of global issues. We encourage students to express and improve themselves with their knowledge and skills to respond to engineering problems in wide range of areas. We are dedicated to prepare our graduates to be leading contributors in response to the dire needs of industry, academia, and government, by providing them high quality education through continuous improvement of the program. Our curriculum undergoes regular revisions to ensure local relevance with a global perspective. Our vision is to graduate creative problem-solvers who can tackle issues from a variety of perspectives. Our mission is to empower you with sound knowledge of the foundations of mechanical engineering along with effective communication, analytical, and problem-solving skills and thus prepare you as competent engineers who can adapt to new circumstances in professional life.

As a department our vision is to be recognized nationally and internationally for excellence in mechanical engineering education, graduating world-class mechanical engineers, and supporting innovative research. We aim to be the first choice in the Middle East region for students starting their engineering education, and for employers that hire mechanical engineers.

We aim to provide academic guidance to help you with program requirements, course prerequisites, course sequencing, etc., as well as provide career guidance to help you choose a meaningful and gratifying job after graduation. All our faculty members, staff and I look forward to working closely with you during your education here in the Mechatronics Engineering Program. You will notice that our department has a very friendly atmosphere and we always promote a close knit community of students and faculty. Please make good use of this document and I encourage you to contact our faculty and staff if you have any questions regarding the department and our programs.

Sincerely

Assoc. Prof. Dr. Hasan HACIŞEVKİ
Head of Department

Assoc. Prof. Dr. Hasan HACIŞEVKİ
Head of Department
Mechanical Engineering
Eastern Mediterranean University
Famagusta, North Cyprus
via Mersin 10, Turkey
Ext. No: 1210
Office No: ME 201A
E-mail: hasan.hacisevki@emu.edu.tr

1- GENERAL INFORMATION

1.1 Mechanical Engineering Department

The Department of Mechanical Engineering (ME) is one of the first three departments established in this University. The graduate program of the department was started in 1990. The Department offers programs of study leading to the degrees of Bachelor of Science (B.S.) in Mechanical & Mechatronics Engineering, Master of Science (M.S.), and Doctor of Philosophy (Ph.D.) in Mechanical Engineering. The Mechanical Engineering Department has the largest population of international students in EMU at present. In 2011, the Mechanical Engineering program was fully accredited by ABET (Accreditation Board for Engineering and Technology). ABET is a non-profit organization and accreditation board that accredits programs in engineering, applied science, computing etc. ABET assures the quality of university programs, college or institutions. It is required by ABET that our engineering programs meet the quality standards set by ABET. ABET accreditation provides vast number of opportunities to students, institutions, programs and employers, for example, it helps students and parents to choose among quality assured programs. Engineers, graduated from an ABET accredited engineering program, are distinguished from others as employers seek for well-prepared engineers. Institutions or colleges continuously improve quality of their programs for better outcomes. The accreditation of the Mechatronics Engineering Program is in process.

1.2 Eastern Mediterranean University Mission Statement

To offer contemporary, sustainable and quality education at international standards, conduct research, contribute to the needs of the society, and meet the needs of all stakeholders and graduate students in a multicultural environment having international knowledge and competences. This statement is published in the University website: http://ww1.emu.edu.tr/en/about-emu/mission-and-vision/c/594

1.3 Faculty of Engineering Mission Statement

- Contribute to the betterment of our society through the pursuit of innovative education, active learning and cutting edge scientific research.
- Maintain our regional leadership in engineering education and research, and develop close relationships with and provide knowledge, services and technology to all related communities in its area.
- Provide opportunities and create an esteemed academic environment for the exchange of diversity of cultures, social, political and ideological knowledge and professional talents among the students as well as the faculty.
- Assure quality and foster systematic pursuit of improvement in quality of education to graduate engineers with abilities to analyze and interpret data, design and conduct experiments, apply knowledge to solve engineering problems in a global, economic, environmental, societal context with focus on social, political, ethical, health and safety, manufacturability, and sustainability in a life-long learning capacity.

This statement is published in the Faculty website: http://eng.emu.edu.tr/

1.4 Departmental Mission Statement

The mission of the Mechanical Engineering Department is to cultivate on the creation integration, transfer and application of knowledge relevant to the disciplines of Mechanical and Mechatronics Engineering. The aim of the Mechanical and Mechatronics Engineering programs is to encourage students to express and improve themselves with their knowledge and skills to respond to engineering problems in wide range of areas. The programs are dedicated to prepare the graduates to be leading contributors in response to the needs of industry and society. Also, the purpose of the post graduate programs is to contribute to the technological improvement to serve national and international communities. Through continuously developing our educational and research programs, students graduating as engineers become professional leaders who can apply their knowledge and skills to work on the engineering problems encountered by community and industry. This statement is published in the Department website: http://me.emu.edu.tr/?page_id=281

1.5 Mission of the Program

Mechatronics Engineering undergraduate program is administered by the Mechanical Engineering Department and jointly supported by the Mechanical Engineering Department and Electrical and Electronics Engineering Department since 2009-2011. Mechatronics is an inter-disciplinary field, combining traditional electrical, electronic, mechanical, control and computer engineering skills, applied to solve problems that bridge the boundaries between these disciplines, requiring multi-skilled practitioners. The objective of the program is to inculcate a flexible, multi-technological approach in our graduates by imparting the knowledge of mechanical, electrical and electronics, and computer engineering. The mission of the mechatronics engineering program is to educate creative engineers that can establish the relationship between mechanical, electrical, electronic, and software and control engineering subjects and generate pragmatic solutions for engineering problems.

1.6 Program Educational Objectives

The educational objectives of the undergraduate program in Mechatronics Engineering are to provide a high-standard education and training to its students so that beyond 3 to 5 years after graduation will enable the graduates to

PEO1: Perform successfully in mechatronics engineering and related fields
PEO2: Attain advancement in their career through professional activities and higher education
PEO3: Develop versatile relations in a global work environment
PEO4: Have respect and appreciation for individuals, society, human heritage and environment

1.7 Student Outcomes

The Mechatronics Engineering program ensures the student outcomes 'a' through 'k' in its curriculum, and the outcomes are evaluated through direct and indirect assessments. Upon completion of the BS in Mechatronics Engineering Program at the Department of Mechanical Engineering, Eastern Mediterranean University, the graduates have the following knowledge, understanding, and capabilities:

a. an ability to apply knowledge of mathematics, science and engineering.
b. an ability to design and conduct experiments, as well as to analyze and interpret data.
c. an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
d. an ability to function on multidisciplinary teams.
e. an ability to identify, formulate, and solve engineering problems.
f. an understanding of professional and ethical responsibility.
g. an ability to communicate effectively.
h. the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
i. a recognition of the need for, and an ability to engage in life-long learning.
j. a knowledge of contemporary issues.
k. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

1.8 Department Website

The following information is made available on the Mechatronics Engineering Program homepage (http://me.emu.edu.tr/?page_id=291):

- Program Educational Objectives (http://me.emu.edu.tr/?page_id=1513)
- Student Outcomes (http://me.emu.edu.tr/?page_id=1509)
- Enrollment Statistics (http://me.emu.edu.tr/?page_id=1504)
- Curriculum (http://me.emu.edu.tr/?page_id=310)
- Course Descriptions (http://me.emu.edu.tr/?page_id=313)
- Mechatronics Eng.Staff (http://me.emu.edu.tr/?page_id=836)
- Administrative Staff (http://me.emu.edu.tr/?page_id=365)
- Technician Staff (http://me.emu.edu.tr/?page_id=428)
- Research Assistants (http://me.emu.edu.tr/?page_id=369)
- Facilities (http://me.emu.edu.tr/?page_id=555)
- Laboratories (http://me.emu.edu.tr/?page_id=558)
- Academic Calendar (http://me.emu.edu.tr/?page_id=742)
- Rules & Regulations (http://mevzuat.emu.edu.tr/)
- Student Survey Outcomes (http://me.emu.edu.tr/?page_id=1399)

2- STAFF

2.1. Academic Staff of Mechanical Department

Hasan HACISEVKI
Chair of the Department. Dr. Hacisevki received his B.S, M.S and Ph.D. degrees from Eastern Mediterranean University. Dr. Hacisevki`s research interests include Experimental studies in Fluid Dynamics, Automotive Engineering and Mechanical Design.
Extension No: 1210
Office No: ME 201A
E-mail: hasan.hacisevki@emu.edu.tr

Neriman ÖZADA
Vice Chair of the Department, Assistant Professor of Mechanical Engineering. Dr. Ozada received her B.S from Eastern Mediterranean University. And she received her PhD. from Brunel University, UK. Her current research interests include Biomechanics and Musculoskeletal Systems, Musculoskeletal joint modeling, Orthopaedic Implant Design and manufacturing, Artificial Joint Contact and Robotics.
Extension No: 1256
Office No: ME 200B
E-mail: neriman.ozada@emu.edu.tr

Davut SOLYALI
Vice Chair of the Department, Assistant Professor of Mechanical Engineering. Dr. Davut Solyalı received his BSc degree in Electrical and Electronic Engineering from the Eastern Mediterranean University, Famagusta, Cyprus. He obtained his MSc in Electrical Power Systems with distinction and his PhD from the Department of Electronic and Electrical Engineering, University of Bath, Bath, U.K in 2007 and 2013. He worked at the ENCC (the electricity national control centre) of the National Grid (UK) as a power systems engineer between 2008 and 2014. Thereafter, he has been teaching at the Eastern Mediterranean University in Cyprus. His major areas for academic & research are renewable energy systems, power and high voltage systems, electrical machines, smart grids & electric vehicles.
Extension No: 1087; Office No: ME 122; E-mail: davut.solyali@emu.edu.tr

Uğur ATİKOL
Professor of Mechanical Engineering. Dr. Atikol is a Professor of Mechanical Engineering. He received his B.S degree from the University of Leicester and M.Sc. degree from the University of Manchester. He completed his Ph.D. in Eastern Mediterranean University. Dr. Atikol`s research interests are Energy Management, Planning and Utilization, Solar Energy and Desalination. He has been the director of EMU Energy Research Center since 2004.
Extension No: 1247
Office No: ME 201A
E-mail: ugur.atikol@emu.edu.tr

Fuat EGELİOĞLU
Professor Emeritus of Mechanical Engineering. Dr. Egelioglu received his B.S degree from Bogazici University and received his M.Sc. and Ph.D. degrees from Eastern Mediterranean University. His research interests include Energy Savings, Renewable Energy and Energy Conversion.
Extension No: 1354
Office No: ME 117
E-mail: fuat.egelioglu@emu.edu.tr

Ibrahim SEZAİ
Professor Emeritus of Mechanical Engineering. Prof. Sezai received his B.Sc. and M.Sc. degrees from Middle East Technical University, and second M.Sc. from UMIST, University of Manchester, UK. Furthermore, he received his Ph.D. from Eastern Mediterranean University. Prof. Sezai`s current research interests include Computational Heat and Fluid Flow, Solar Energy, Flow through Porous Media and Crystal Growth.
Extension No: 1222; Office No: ME 126
E-mail: ibrahim.sezai@emu.edu.tr

Qasim ZEESHAN

Associate Professor of Mechanical Engineering. Dr. Qasim Zeezhan received his B.E. Mechanical Degree from National University of Sciences and Technology (NUST), Pakistan. He received his MS and PhD in Flight Vehicle Design from Beihang University (BUAA), China. His research interests include Multidisciplinary Design and Optimization (MDO) and application of Modern Meta-Heuristic Optimization Techniques.

Extension No: 1361

Office No: ME 026

E-mail: qasim.zeeshan@emu.edu.tr

Murat ÖZDENEFE

Assistant Professor of Mechanical Engineering Dr. Özdenefe gained his BSc. from Mechanical Engineering Department, Çukurova University. Dr. Özdenefe then received his MSc. in Mechanical Engineering Department, Eastern Mediterranean University. He completed His PhD in School of Mechanical, Aerospace and Civil Engineering, The University of Manchester with the PhD. project "Phase Change Materials and Thermal Performance of Buildings in Cyprus". Dr. Özdenefe's research interests are: Building Heat Transfer, Building Thermal Performance Simulation, Phase Change Materials, Energy Auditing, Passive Buildings.

Extension No: 1355; Office No: ME 145

E-mail: murat.ozdenefe@emu.edu.tr

Devrim AYDIN

Lecturer in Mechanical Engineering. Dr. Aydin gained his BSc. and MSc. from Mechanical Engineering Department, Yildiz Technical University. He completed His PhD. in Institute of Sustainable Energy Technology, Engineering Faculty, The University of Nottingham with the PhD. project "Investigation of innovative thermochemical energy storage processes and materials for building applications". Dr. Aydin's research interests are: Thermal energy storage, adsorption/absorption materials and processes, evaporative cooling, desiccant systems, power cycles, low carbon buildings, drying systems, solar energy systems and water harvesting technologies.

Extension No: 1045 ; Office No: ME 120; E-mail: devrimayd@yahoo.com

Cafer KIZILÖRS

Lecturer in Mechanical Engineering. He received his B.S and M.Sc. degrees from Eastern Mediterranean University. His current research interests include Statics, Dynamics, Fracture Mechanics and Materials.

Extension No: 1352; Office No: ME 200/C

E-mail: cafer.kizilors@emu.edu.tr

Behzad HEIDAR SHENAS

Part time Lecturer in Mechanical Engineering. Mr. Behzad Heidar Shenas received his B.Sc. and M.S in Materials Science and Engineering from Azad University of Ahvaz, Iran in (2005) and (2008) respectively. He started his Ph.D. in Mechanical Engineering in 2012 at Eastern Mediterranean University. In Jun 2014, he joined the Department of Mechanical Engineering at EMU as a part time instructor. His research interests include Materials Science, Welding Technology and Coating Procedures.

Extension No: 2590; Office No: ME 017(A)

E-mail: behzad.shenas@emu.edu.tr

2.1. Academic Staff of Electrical & Electronics Department

Osman KÜKRER
Professor, BSc, MSc, PhD, Middle East Technical University.
His research interests include feedback control of single phase and three phase inverters, uninterruptible power supplies, PWM ac/dc converters, high power factor rectifiers, ac and dc drivers, adaptive filtering.
Ext. No: 1304, e-mail: osman.kukrer@emu.edu.tr

Hasan AMCA
Professor, BEng, Higher Technological Institute (EMU), MSc, University of Essex; PhD, Bradford University.
His research interests include indoor and outdoor mobile communications, telephony, multi user detection of CDMA, Multi-carrier systems, digital signal processing, adaptive equalization, radio and TV broadcasting, information technology.
Ext. No: 2760, e-mail: hasan.amca@emu.edu.tr
Web Page: http://www.emu.edu.tr/amca

Mustafa K. UYGUROĞLU
Vice Rector], Associate Professor, BEng, Higher Technical Institute (EMU), MS, PhD Eastern Mediterranean University. He is conducting research in the field of robotics, mechatronics and mathematical modeling.
Ext. No: 1443, e-mail: mustafa.uyguroglu@emu.edu.tr

Hasan DEMİREL
Professor [Chairman], BSc, Eastern Mediterranean University, MSc, King's College London, PhD and DIC Imperial College London.
Ext. No: 1300/1436, e-mail: hasan.demirel@emu.edu.tr
Web Page: http://faraday.ee.emu.edu.tr/hdemirel
His current research interests include; resolution enhancement in images/video, facial expression recognition, pattern recognition, facial image processing, feature detection, tracking, segmentation and recognition.

Aykut HOCANIN
Professor [Dean], BSEE, Rice University, MEng Texas A&M University, PhD Boğaziçi University.
His current research interests include wireless communication, channel and source coding, detection and estimation theory, CDMA, multi-user detection, spectral estimation, adaptive filtering.
Ext. No: 1380, e-mail: aykut.hocanin@emu.edu.tr
Web Page: http://faraday.ee.emu.edu.tr/hocanin

Erhan İNCE
Associate Professor, BSc and MSc University of Bucknell, PhD, University of Bradford.
His current research interests include indoor/mobile communications, channel and source coding, Turbo Codes, performance bounds and exact solutions, channel modeling and estimation, multi-carrier techniques (OFDM), face recognition using PCA, improving PCA performance, watermarking.
Ext. No: 2778, e-mail: erhan.ince@emu.edu.tr
Web Page: http://faraday.ee.emu.edu.tr/eaince

Hasan ABOU RAJAB
Assistant Professor, BSc, MSc, PhD, Middle East Technical University.
His current research interests are digital communication systems, coding theory and coded modulation techniques.
Ext. No: 1498, e-mail: hassan.rajab@emu.edu.tr

Rasime UYGUROĞLU
Assistant Professor [Vice Chair], BEng, Higher Technical Institute (EMU), MS, PhD, Eastern Mediterranean University.
Her research interests are Computational methods in electromagnetics, FDTD analysis of microstrip antennas, numerical methods of lines.
Ext. No: 1436/1434, e-mail: rasime.uyguroglu@emu.edu.tr

Suna BOLAT
Assistant Professor, BSc, MSc and PhD, Istanbul Technical University.
Her research fields include high voltage techniques, acoustics, numerical methods, algorithmic methods, energy generation and distribution.
Ext. No: 2197, e-mail: suna.bolat@emu.edu.tr

2.3. Teaching Assistants of Mechanical Department

Name	Office No.	Extension	Email
Ali VATANKHAH BARENJI	ME 027	1117	ali.vatankhah@cc.emu.edu.tr
Poorya GHAFOORPOOR YAZDI	ME 025A	1089	poorya.ghafoorpoor@gmail.com
Behnam ESKANDARIUN	ME 028	1066	behnam.eskandariun@gmail.com
Amir TEIMOURIAN	ME019	2598	amir.teimourian@cc.emu.edu.tr
Mohammad SADEGH MAZLOOMI	ME 026	1160	mohamad.mazloomi@cc.emu.edu.tr
Lemopi Isıdore BESONG BESONG	ME 017	2590	lemopi.besong@cc.emu.edu.tr
Marzieh REZAEI	ME 022	1534	marzieh.rezaei@cc.emu.edu.tr
Vahid KHOJASTEH	ME 015	1398	vahid.khojasteh@cc.emu.edu.tr
Hamed GHASEMIAN	ME 021A	2147	ghasemiyan.hamed@gmail.com
Nima KHOSRAVI	ME 026	1160	nima.khosravi@cc.emu.edu.tr
Majid KARIMNEJHAD	ME 023	1533	majid.avrin@gmail.com
Zeki Murat ÇINAR	ME 025A	1089	cinar.zekimurat@gmail.com
Hamidreza SHIRI	ME 019	2598	hamidreza.shiri@cc.emu.edu.tr
Behzad PANAHIRAD	ME 023	1533	behzad.panahirad@cc.emu.edu.tr
Shedrach EZENWALI	ME 017	2590	shedinhoshedrach@yahoo.com

2.4. Teaching Assistants of Electrical & Electronics Department

Name	Office No.	Extension
Faezeh YEGANLI	EE 133	1449
S. Faegheh YEGANLI	EE 110	2775
Mahmoud K. NAZZAL	EE 111	2765
Mehdi TAASSORI	EE 212	2050
Pouya H. BOLORCHI	EE 242	1384
Aman GHASEMZADEH	EE 213	1308
Iman BEHESHTI	EE 240	1093
Mohsen SEDIGHI	EE 114	1306
Ramin BAKSHI	EE 115	1094
Bashir SADEGHI	EE 139	2767
Saeid MOHAMMADZADEH	EE 241	2779
Kian JAZAYERI	EE 214	1656
Narges SABETI	EE 137	2771
Gulsher BALOCH	EE 241	2779

2.5. Administrative and Technical Staff of Mechanical Department

NAME	TITLE	CONTACT
Cigdem ONUREL	Executive Assistant	**Ext.** 1210 cigdem.onurel@emu.edu.tr
Pırıl GÜDER	System Administrator	**Ext.** 1088 piril.guder@emu.edu.tr
Ekrem CENGIZOGLU	Administrator	**Ext.** 2487 ekrem.cengizoglu@emu.edu.tr
Zafer MULLA	Workshop Technician	**Ext**. 1248 zafer.mulla@emu.edu.tr
Servet UYANIK	Workshop Technician	**Ext.** 1248 servet.uyanik@emu.edu.tr

2.5. Administrative and Technical Staff of Electrical & Electronics Department

NAME	TITLE	CONTACT
Cem CENGIZ	Electronic Technician	**Ext.** 1445 cem.cengiz@emu.edu.tr
Ali CAKMAK	Administrator	**Ext.** 1440 ali.cakmak@emu.edu.tr
Yeliz EVGINEL	Secretary	**Ext.** 1300 yeliz.evginel@emu.edu.tr
Armen SARICA	IT System Administrator	**Ext**. 1454 armen.sarica@emu.edu.tr

3- FACILITIES

3.1 American Society of Mechanical Engineers (ASME) Student Section

ASME is a non-profit educational and technical organization of professional mechanical engineers. ASME Student Section, in EMU, has been established since March 1997. EMU is one of the four universities in North Cyprus and Turkey having ASME Student Section. The main purpose of ASME Student Section is to organize conferences relating to mechanical engineering topics and to share views and ideas between prospective mechanical engineers and industry.

3.2 Society of Mechatronics Engineering Students (EMUMTXS)

EMUMTXS was established by the students of MECT program in order to share knowledge, experience and enthusiasm. EMUMTXS aims to lead mechatronics engineering students to act together and share their experiences.

3.3 Departmental Library & Reading Area

Departmental library in ME018 consists of nearly 350 books, M.S. and PhD. theses (submitted by mechanical engineering graduate students), and undergraduate project reports.

3.4 Conference Hall

Conference Hall (MESEM2) is located within the Mechanical Engineering Department building at the ground floor. It is equipped with the instructional technology in order to have an excellent teaching environment. This unit is also used for national/international seminars and presentations.

3.5 Laboratories

The program has extensive, well equipped modern laboratories that cover all the core disciplines of Mechanical, Electrical and Electronics Engineering. The Mechanical Engineering department has separate laboratories for ME008 Mechanical Workshop, ME014 Mechanics of Materials Lab., ME016 Electric Vehicle Development Center, ME018 Library & Reading Area, ME020 Fluid Mechanics & Automotive Lab., ME024B Manufacturing Lab., ME024C Material Science Lab., ME024D Metrology and Quality Control Lab., ME025 Thermal Sciences Lab. ME028 Mechatronics Lab., ME029 CNC Workshop, and a separate room ME001 for Capstone Team Projects. The Undergraduate Computer Laboratory EE117, EE118 and EE119, Logic Circuit Design and Microprocessors Laboratory –EE002, Basic Circuits Laboratory – EE005, Electronics Laboratory – EE001, Control Systems Laboratory – EE004 are available in the Electrical and Electronics Engineering Department. The laboratories are equipped with apparatus ranging from basic instrumentation for fundamental exercises to more advanced experiments using its state-of-the-art equipment. A variety of modern engineering tools and software are available for teaching and research. The laboratories provide undergraduate level instruction to meet the requirements of the industry and also serve as a platform for graduate level research.

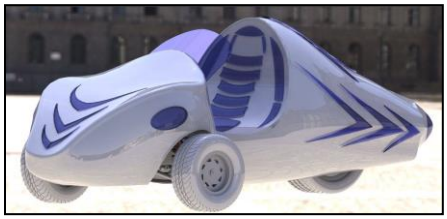
Mechanical Workshop - ME008

The workshops include well-equipped machining, sheet metal working and welding sections. The machining section is equipped with various sized lathes, milling machines, drilling machines, shaper, and grinding machines including tool, surface and cylindrical grinders. The welding section has a number of arc and gas welding equipment including TIG and MIG welding sets and a Plasma Cutting Machine. These sections are available for use by staff and students under supervision. The workshop staff also undertakes industrial work and projects.

Mechanics of Materials Laboratory - ME014

Mechanics of Materials Laboratory provides testing facilities for Strength of Materials, Engineering Dynamics and Vibrations. Whirling of shafts apparatus, Coriolis acceleration apparatus, gyroscopes, inertia wheels, and balancing equipment are available for tests. Moreover, other equipment is also available for stress analysis experimentation, including thin/thick walled cylinders for experiments, beam deflections experiments with strain gages, torsion testing machine, and a 50 ton hydraulic press for tension & compression experiments. A vibration bench is also available to study the effects of various vibration parameters.

Electric Vehicle Development Center - ME016



Dedicated laboratory reserved for research and development purposes of electric vehicle technologies. Mechanical parts, electrical circuits and mechatronic systems are designed, developed and manufactured in this facility.

Aerodynamics Laboratory - ME017

In the Aerodynamics Laboratory, there are two wind tunnels. Wind tunnels are used to study aerodynamics, effect of air, aerodynamic forces and how air flows through the tunnel. One of the wind tunnels has maximum capacity of 50 m/s with 10x40 cm test section and the other wind tunnel has the maximum capacity of 30 m/s with 50x50 test section.

Fluid Mechanics and Automotive Laboratory - ME020

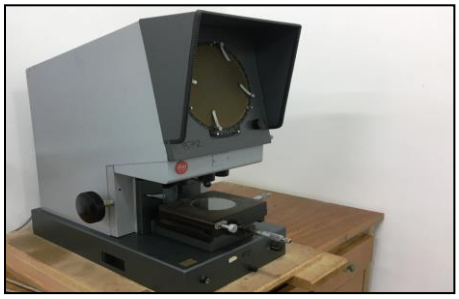
Fluid Mechanics Laboratory contains following setups for demonstration and study of basic fluid mechanics principles as flow measuring apparatus, Heleshaw apparatus, pipe friction loss, vortex motion apparatus, water jets, etc. In addition, small compact wind tunnel and air bench enable students to perform experiments on compressible fluids. This laboratory also contains Francis and Pelton turbines, axial and radial flow pump-turbine test rigs, and pumps of various sizes for experimentation.

Automotive Laboratory is equipped for performance tests on petrol/diesel, two and four stroke engines, and ram-jet. A variable compression ratio I.C. engine test bed is used for the study of compression ratio and timing effects on petrol and diesel engine performance.

Manufacturing Laboratory - ME024B

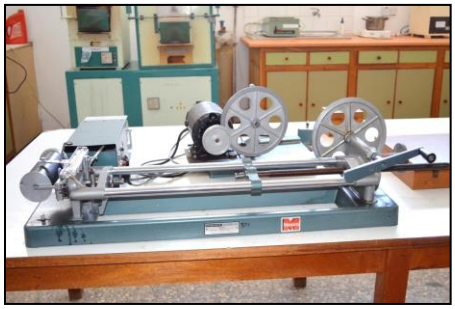
The Manufacturing laboratory seeks to establish a rational foundation for manufacturing based on a systematic understanding of the complex interactions among the many areas of manufacturing like process planning, design, simulation, and control. The facilities include Programmable Logic Controllers (PLC) and software programs for Manufacturing Lifecycle Management (MLM), G-Code programming, industrial robot programming, material resource planning and ergonomic analysis.

Materials Science Laboratory - ME024C



Materials Science Laboratory provides testing facilities for determining various properties of engineering materials, such as strength & hardness, and testing for creep and impact. Available equipment includes optical microscopes, hardness tester, impact tester, tensile testing apparatus, corrosion test apparatus and furnaces for heat treatment.

Metrology and Quality Control Laboratory - ME024D



The equipment in the Quality Control laboratory enables students to perform roundness, flatness, and straightness tests as well as the tests for checking accuracy of the measuring instruments and machine tools. Optical instruments such as autocollimator, angle decor, interferometer, alignment telescope, and optical microscope are also available. The laboratory is also equipped with digital instruments and printer for statistical process control.

Thermal Sciences Laboratory - ME025

In the Thermodynamic Section, facilities are available for experimentation and demonstration of practical concepts to undergraduate students. These experimentations include steam bench, steam engine, air compressor, bomb calorimeter, flash point apparatus and converging-diverging nozzle.

In the Heat Transfer Section, various tests can be conducted on conduction, free and forced convection and radiation heat transfer apparatus. Heat exchanger equipment is used to investigate the performance of parallel- and counter-flow configurations. The laboratories are also equipped with a hot wire anemometer and data loggers.

Refrigeration and Air Conditioning Section contains test and demonstration equipment on refrigeration ranging from small scale to industrial scale. Some benches are modular and allow connection of different modules for comparative studies. Tools necessary for servicing a refrigeration system are also available. An air conditioning bench with pre-heaters, after-heaters and humidifiers, enables psychometric processes to be studied. An experimental cooling tower is also available for tests.

Mechatronics Laboratory – ME028

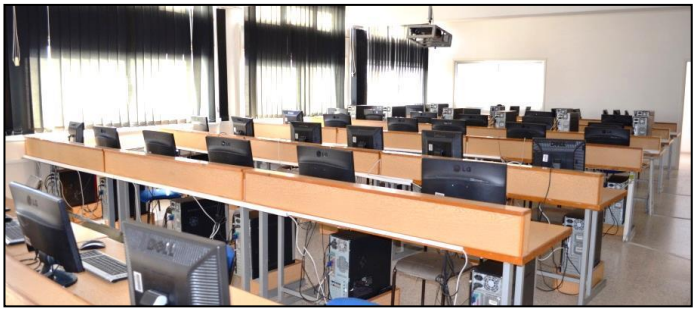
The Mechatronics Lab provides state of the art facilities and experimental setups to learn and enjoy the field of mechatronics. These experiments cover the function of basic devices for measuring and acquiring data of different kinds of variables in mechatronic systems with emphasis on analog electronics, digital electronics, sensors and transducers, actuators, microprocessors and PLCs.

CNC Workshop – ME029

This laboratory is used for undergraduate and graduate studies, as well as research. The hardware and software available at the laboratory include: Master-CAM Mill version 7.0, Pro-Model, Mechanical Desktop, Mill-CAM Designer, Lathe CAM Designer, Genius, AutoCAD, Master-CAM, Solid Works etc., and the hardware such as CNC turning and milling machines.

Computer Laboratories - ME116

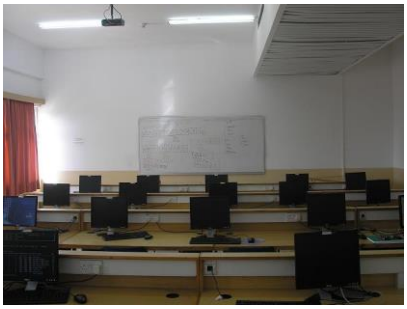
There are three computer laboratories in addition to a CAD/CAM Lab. Of these labs, two are AUTOCAD labs, with each one having 30 computers and a plotter. These equipment are used, primarily, for engineering graphics and engineering drawing courses. The Computer Laboratory is an internet laboratory facilitated with 30 computers.



Capstone Team Project Room - ME001

This is a reserved workplace is a space dedicated for prototype assembly. The capstone project teams regularly comes together to finalize their design at this facility, which also serves as a storage space for project components and tools for each individual group. The facility offers various hand tools, working desk area, storage cupboards and internet access.

Undergraduate Computer Laboratory - EE117, EE118 and EE119.



The laboratory provides facilities for undergraduate computer-based courses. It also provides a wide range of computer-based tools to students for their various computing needs in courses and projects. This laboratory is equipped with 53 personal computers connected to a network with file and print servers providing shared resources.

Logic Circuit Design and Microprocessors Laboratory –EE002

This laboratory is used for teaching the fundamentals of combinational and sequential logic circuits. The equipment includes a logic analyzer, several boards with power supplies, clock generators and LED displays. Also, this laboratory provides facilities for performing experiments on microprocessors and single-board microcomputers. The equipment includes several evaluation kits based on the 8086 microprocessor, suitable both for software and interfacing experiments, and also 80386 based PC/AT interface experimental tools and micro-controller evaluation boards.

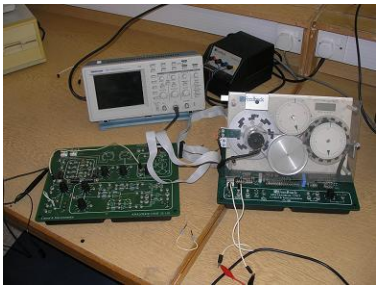
Basic Circuits Laboratory – EE005

This laboratory is used to familiarize students with the fundamental laboratory procedures of electrical measurements. In addition to demonstrating the uses of voltmeters, ammeters, watt-meters, signal generators and oscilloscopes, experiments are designed to illustrate basic electrical circuit theory concepts for linear and non-linear DC circuits, simple time-invariant circuits, and single-phase and three-phase linear AC circuits.

Electronics Laboratory – EE001

Well equipped for undergraduate electronics experiments, this laboratory is used to familiarize students with electronic devices, amplifiers and analogue and digital electronic circuits. It also provides facilities for undergraduate and graduate research projects.

Control Systems Laboratory – EE004



This laboratory provides experimental facilities to help students grasp the theory and applications of feedback control systems. The equipment includes electro-pneumatic sets, electro-hydraulic sets, servo systems, a computer based servo fundamental training system, DC servo mechanism and other electronic apparatus that can be used as basic elements to construct open- or closed-loop systems of various orders. The set-up allows for a number of experiments to demonstrate techniques of system modeling, analysis and design in control engineering.

4- PROGRAM CURRICULUM

4.1 Courses

The Bachelor of Science (B.S.) Mechatronics Engineering program offers a wide range of courses in the curriculum which cover all the key areas of mechatronics engineering. The coursework covers the core subjects in electrical circuits, electronics, control systems, material science, mechanics, thermal sciences, design and manufacturing. A wide range of area elective courses offered to students in their *senior* year enables them to specialize in their areas of interest. According to the requirement, courses are supplemented with tutorials and experimental work. Moreover, students are required to spend a total of *eight weeks* in industry to gain practical experience. The breadth and depth of the Mechatronics engineering program curriculum enables our graduates to choose from a variety of career options in research, development, design, production, sales, and management in the industry.

Subject Areas in Mechatronics Engineering

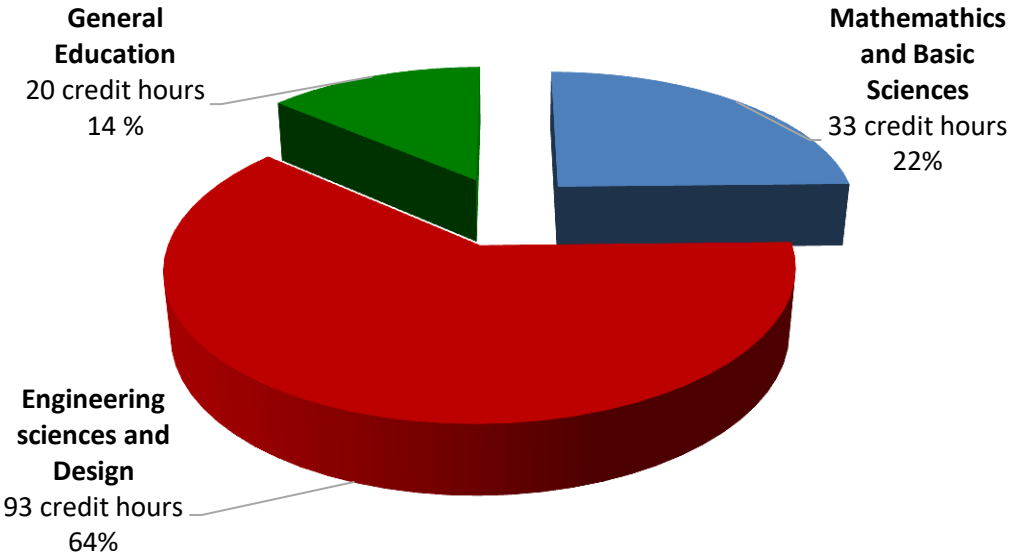
Consistent with the other engineering programs at Eastern Mediterranean University, Mechatronics Engineering BS curriculum begin with studies in basic science and mathematics. These basic science and mathematics courses are applied in engineering sciences and design courses. Ability of communication; oral and written, understanding ethical and professional issues and working in multicultural environment are mostly gained with general education courses. Engineering design activities start during the second year in various courses, progressing in-depth during the third and fourth years as the student's technical skill increases. The design experience culminates with a Capstone Design sequence, which builds upon the fundamentals of engineering, mathematics, science, communication skills, humanities and social sciences, economics, ethics, safety, reliability, industrial applicability, ergonomics and social impact as well as engineering standards. This helps the students to prepare themselves to their future career. Mechatronics Engineering curriculum includes three area elective courses i.e. Area Elective that are specially designed, aiming to give profound knowledge in particular areas.

Curriculum Course Categories

Courses in Mechatronics Engineering Program curriculum is sub grouped under three subject areas namely:

- Mathematics and Basic Sciences
- Engineering Sciences and Design
- General Education

Mathematics and Basic Sciences courses comprise 22% of the total credit hours, Engineering Sciences and Design courses constitute 64% of the total credit hours and the General Education courses are 14% of the total credit hours in the Mechatronics Engineering Program. Total credit hours and percentages of each subject area can be seen in Figure.



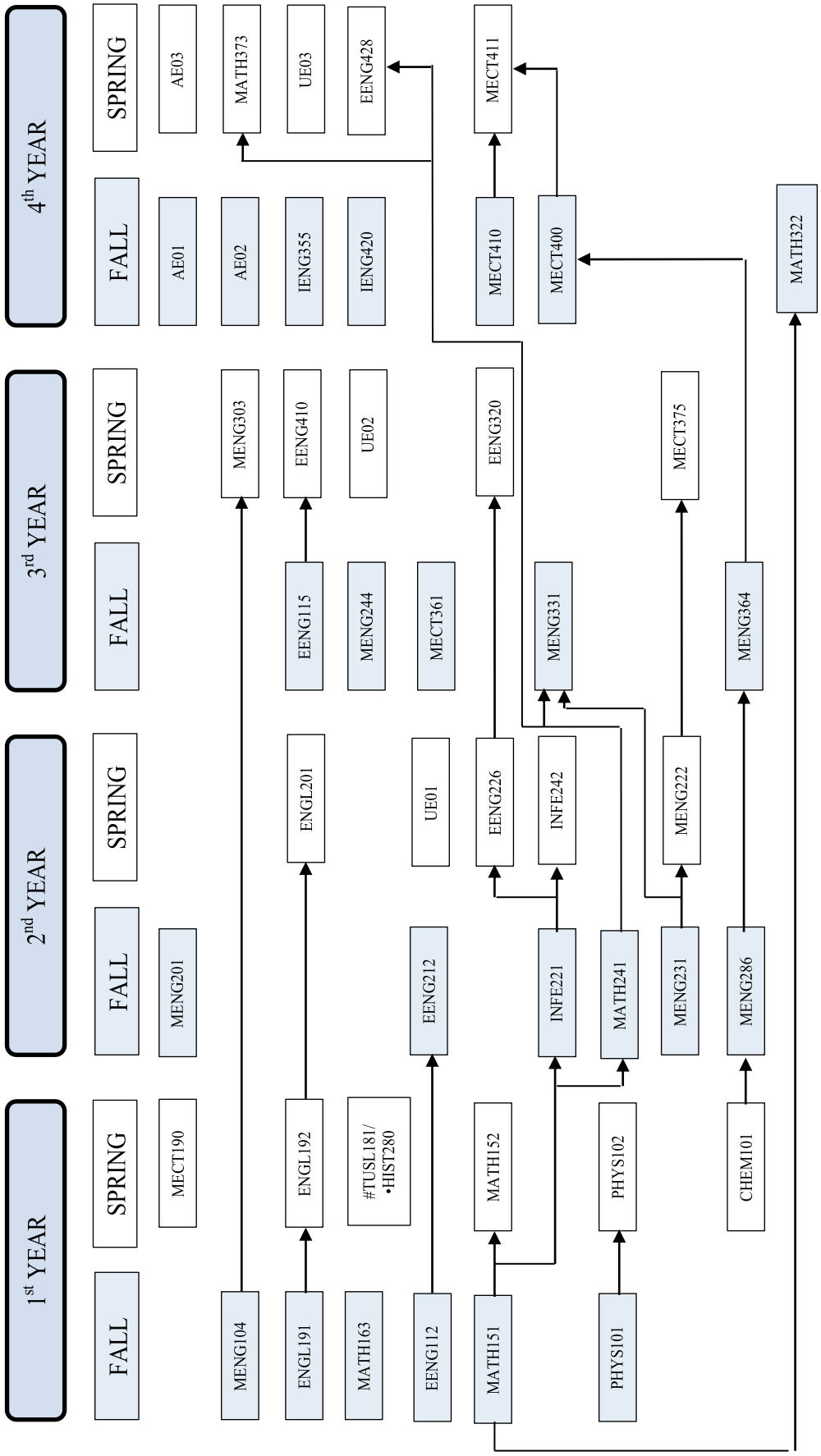
Total credit hours and percentages of each subject area of Mechatronics Engineering Program

The following list provides information on each course in the following order: Semester, Reference Code, Course Code, Full Course Title, Credit (weekly lecture hours, laboratory hours and tutorial hours) and Prerequisite Courses.

Mechatronics Engineering Curriculum

Sem #	Ref. Code	Course Code	Course Name	(Lecture, Lab/ Tutorial) Total Credit Hours	ECTS Credits	Pre-Requisites	Student Outcomes
1	2A710	MENG104	Engineering Graphics	(2,3)3	8		g,k
1	2A711	EENG112	Introduction to Programming	(4,1)4	8		a,c,e,k
1	2A712	ENGL191	Communication in English-I	(3,1)3	5		d,g
1	2A713	MATH151	Calculus-I	(4,1)4	6		a,e,h,k
1	2A714	PHYS101	Physics-I	(4,1)4	6		a,b,c,d,e,k
1	2A715	MATH163	Discrete Mathematics	(3,1)3	5		a, e, k
			1st Semester Total Credits	21/21			
2	2A720	MECT190	Introduction to Mechatronics Engineering	(1,1)1	3		f,h,i,j
2	2A721	CHEM101	General Chemistry	(4,1)4	6		a,b,c,d,e,h,k
2	2A722	ENGL192	Communication in English-II	(3,1)3	4	ENGL191	d,g
2	2A723	MATH152	Calculus II	(4,1)4	6	MAHT151	a,e,k
2	2A724	PHYS102	Physics-II	(4,1)4	6	PHYS101	a,b,c,e,k
2	2A725	TUSL181	Communication in Turkish *	(2,0)2	2		g
2	2A725	HIST280	History of Turkish Reforms	(2,0)2	2		i
			2nd Semester Total Credits	18/39			
3	2A730	MENG201	Mechanical Workshop Practice	(1,3)2	3		a,c,f,g,k
3	2A731	MENG286	Materials Science	(3,1)3	6	CHEM101	a,b
3	2A732	INFE221	Electrical Circuits	(4,1)4	6	MATH151	a,b,c,e,k
3	2A733	EENG212	Algorithms and Data Structures	(3,1)3	5	EENG112	a,b,k
3	2A734	MENG231	Engineering Mechanics	(3,1)3	6		a,e
3	2A735	MATH241	Ordinary Differential Equations & Linear Algebra	(4,1)4	6	MATH151	a,e,k
			3th Semester Total Credits	19/58			
4	2A740	INFE242	Electronics	(4,1)4	6	INFE221	-
4	2A741	MENG222	Strength of Materials	(4,1)4	6	MENG231 OR CIVL211	a,b,e
4	2A742	UE-01	University Elective – 01	(3,0)3	3		d,f,i
4	2A743	EENG226	Signals and Systems	(4,1)4	6	INFE221	a,e,k
4	2A744	ENGL201	Communication Skills	(3,0)3	4	ENGL192	d,g
			4th Semester Total Credits	18/76			
5	2A750	MECT363	Fundamentals of Programmable Logic Controller (PLC) Automation	(3,1)3	6		a,e,k
5	2A751	MENG244	Fundamentals of Thermodynamics	(3,1)3	5		a,e,h
5	2A752	MENG364	Manufacturing Technology	(4,1)4	6	MENG286	b,d,e,j
5	2A753	MENG331	Dynamics of Machinery	(4,1)4	7	(MENG231 OR MENG233) AND (MATH241 OR MATH207)	a,b,e
5	2A754	EENG115	Introduction to Digital Logic Design	(4,1)4	7		a,b,e,k
			5th Semester Total Credits	18/94			
6	2A760	MECT375	Machine Elements	(3,1)3	6	MENG222	a,c,e,k
6	2A761	MENG303	Principles of CAE	(2,3)3	6	MENG104	a,c,d,e,f,g,I,k
6	2A762	EENG320	Control System-I	(4,1)4	7	EENG226	a,b,c,d,e,k
6	2A763	EENG410	Microprocessors-I	(4,1)4	7	EENG115	a,b,c,e,i,k
6	2A764	UE-02	University Elective – 02	(3,0)3	3		d
			6th Semester Total Credits	17/111			
7	2A770	MECT400	Industrial Training	(0,0)0	3	MENG364	d,f,g,h,i,j
7	2A771	MECT410	Introduction To Capstone Design	(1,1)1	4		a,c,d,e,f,g,h,i,j,k
7	2A772	AE-1	Area Elective-1	(4,1)4	7		
7	2A773	AE-2	Area Elective-2	(4,1)4	7		
7	2A774	IENG355	Ethics in Engineering	(3,0)3	3		d,f,g,h,i,j
7	2A775	IENG420	Engineering Economy	(3,0)3	5		a,b,h,i,k
7	2A776	MATH322	Probability & Statistical Methods	(3,1)3	5	MATH151	a,b,c,e,k
			7th Semester Total Credits	18/129			
8	2A780	MECT411	Capstone Team Project	(1,4)3	7	MECT410, MECT400	a,b,c,d,e,f,g,h,i,j,k
8	2A781	EENG428	Introduction to Robotics	(4,1)4	4	MATH241	a,b,c,d,e,i,k
8	2A782	AE-3	Area Elective-3	(4,1)4	7		
8	2A783	MATH373	Numerical Methods for Engineers	(3,1)3	5	MATH241	a, e, k
8	2A784	UE-03	University Elective-03	(3,0)3	3		d,f,i
			8th Semester Total Credits	17/146			

Table 4.1 Prerequisite Flowchart for the Mechatronics Engineering Curriculum



For Students other than Turkish Speaking
• For Turkish Speaking Students

4.2 Course Descriptions

Area Core Courses	
1.	**MECT190 Introduction to Mechatronics Engineering** This course aims to familiarize first year mechatronics engineering students by introducing them to the fundamentals of discipline; job opportunities for mechatronics engineers; basic study skills; an overview of fundamentals laws and principles of mechatronics engineering; introduction to problem layout and problem solving methods; simplified engineering modeling and analysis of mechatronics systems; collection, manipulation and presentation of engineering data; ethical issues; and the importance of computers and language skills for effective communication. *Credits: (1 / 0 / 1) 1* *Prerequisites: None* *ECTS credit: 3* *Abbreviated Title: Int to Mechatronics Engineer* *Category: Area Core Course* *Teaching Language: English* *Keywords: Introduction to Mechatronics engineering, standards, ethics, communication.*
2.	**MECT375 Machine Elements** The course covers fundamentals of machine design which include: general design rules, load analysis, materials selection, stress, strain and deflection anal mechatronics components, sensors, instrumentation analysis, failure theories, the concepts of reliability and safety, tolerances and fits; and introduces design guidelines, mathematical models and equations for: fasteners and power screws, springs, bearings, gears, shafts, clutches and brakes, and chain drives. Students will have an opportunity to work on a design project using learned knowledge. *Credits: (3 / 0 / 1) **3*** *Prerequisites: MENG222* *Abbreviated Title: Machine Elements* *Category: Area Core Course* *Teaching Language: English* *Keywords: Fundementals of machine design, stress deflection, design guidelines*
3.	**MECT363 Fundamentals of Programmable Logic Controller (PLC) Automation** This course covers the fundamental topics of implementing use of Programmable Logic Controllers (PLC) in systems automation. Topics covered are: Overview and components of PLCs, basic PLC programming, integration of sensors and actuators with PLCs, PLC timers and counters, real world exercises and applications are taught. *Credits: (3/ 1 / 0) **1*** *Prerequisites: None* *ECTS credits:6* *Abbreviated Title: Programmable Logic Controller (PLC)* *Category: Area Core* *Teaching Language: English* *Keywords: PLC, Automation*
4.	**MECT400 Industrial Training** This is a period comprising a minimum of 40 days' training to be completed in an industrial organization by all students who are effectively in their junior or senior year. Students should obtain approval of the Department before commencing training. Following this training, students will be required to write a formal report and give a short presentation before a committee regarding their training. *Credits: (0 / 0 / 0) **0*** *Prerequisites: MENG364* *Abbreviated Title: Industrial training* *Category: Area Core Course* *Teaching Language: English* *Keywords: Industrial organization, training*
5.	**MECT410 Introduction to Capstone Design** The course aims to prepare the senior year students for their capstone design projects, and to provide guidance with the selection of their project advisors, topics and teams The students are introduced to the basic features of the Capstone Design process, elements of a Capstone Project, report and written oral presentation techniques. *Credits: (1 / 0 / 1) **1*** *Prerequisites: None* *Abbreviated Title: Int. to Capstone Design* *Category: Area Core Course* *Teaching Language: English* *Keywords: Capstone design project, team, report writing, design process*
6.	**MECT411 Capstone Team Project** The purpose of the course is to develop an understanding of independent research through the study of a particular Mechatronics Engineering topic of interest. The special project is an exercise in the professional application of specialist skills and experience developed in Mechatronics Engineering program. Research topics, which may be principally experimental, theoretical or applied, will be chosen in consultation with a project supervisor. *Credits: (1 / 4 / 0)**3*** *Prerequisites: MECT410 and MECT400* *Abbreviated Title: Capstone Team Project* *Category: Area Core Course* *Teaching Language: English* *Keywords: Project, team, design, independent research, experimental, theoretical, applied*

All compulsory courses offered by other academic units

1. **MENG104 Engineering Graphics**
Principles of engineering graphics with the emphasis on laboratory use of AUTOCAD software. Plane Geometry, geometrical constructions, joining of arcs, Dimensioning principles, principles of orthographic projection, isometric and oblique drawing, principles of sectioning, reading engineering drawing from blueprints.
Credits: (2 /3 /0) 3 *Prerequisites: None* *ECTS credit: 7*
Abbreviated Title: Engineering Graphics *Category: Area Core Course* *Teaching Language: English*
Keywords: ACAD, Orthographic, Sectioning, dimensioning

2. **EENG112 Introduction to Programming**
High-level programming environments. Variables, expressions and assignments. Introducing C programming. Structured programming; sequential, selective and repetitive structures. Function definition and function calls. Prototypes and header files. Recursive functions. Arrays and pointers. Dynamic memory management. Parameter passing conventions. Multi-dimensional arrays. Structures and unions. Conditional compilation, modular programming and multi-file programs. Exception handling. File processing. Formatted I/O. Random file access. Index structures and file organization.
Credits: (4/ 1 /0) ***4*** *Prerequisites: None*
Abbreviated Title: Int to Programming *Category: Area Core Course* *Teaching Language: English*
Keywords: High level programming, C programming, functions, file processing, index structures

3. **EENG212 Algorithms and Data Structures**
Storage structures and memory allocations. Primitive data structures. Data abstraction and Abstract Data Types. Array and record structures. Sorting algorithms and quick sort. Linear & binary search. Complexity of algorithms. String processing. Stacks & queues; stack operations, implementation of recursion, polish notation and arithmetic expressions. Queues and implementation methods. Dequeues & priority queues. Linked storage representation and linked-lists. Doubly linked lists and circular lists. Binary trees. Tree traversal algorithms. Tree searching. General trees. Graphs; terminology, operations on graphs and traversing algorithms.
Credits: (3 / 1 / 0) ***3*** *Prerequisites: EENG112*
Abbreviated Title: Algorithms and Data Structures *Category: Area Core Course* *Teaching Language: English*
Keywords: Storage structures, memory allocations, algorithms, queues, arithmetic expressions

4. **INFE221 Electrical Circuits**
Circuit variables and circuit elements. Some circuit simplification techniques. Techniques of circuit analysis. The operational amplifiers. The natural and step response of RL and RC circuits. Natural and step responses of RLC circuits. Sinusoidal steady-state analysis. Introduction to the Laplace Transform. The Laplace Transform in circuit analysis.
Credits: (4 / 0 / 1) ***4*** *Prerequisite: Math151*
Abbreviated Title: Electrical circuits *Category: Area Core Course* *Teaching Language: English*
Keywords: Circuit variables, elements, circuit analysis, RLC circuits, Laplace transform

5. **MENG286 Materials Science**
Crystal structure and crystal geometry phase diagrams of alloy systems, heat treatments applied to metallic materials and plain-carbon steels. Mechanical properties of metals stress-strain in metals, tensile test, hardness and hardness testing, fatigue and fracture of metals, impact test, creep of metals and creep test. Strengthening and plastic deformation of metals. Mechanical properties of ceramics, glasses, polymers and composites. Corrosion of metals. Material selection based on mechanical properties.

Credits: (3 / 1 / 0) 3 *Prerequisites: CHEM101* *ECTS credit: 6*
Abbreviated Title: Materials Science *Category: Area Core Course* *Teaching Language: English*
Keywords: Crystal Structure, Mechanical Testing, Hardening of Steels, Heat Treatment

6. **EENG 226 Signals and Systems**
Continuous-time and discrete-time signals and systems. Linear time-invariant (LTI) systems: system properties, convolution sum and the convolution integral representation, system properties, LTI systems described by differential and difference equations. Fourier series: Representation of periodic continuous-time and discrete-time signals and filtering. Continuous time Fourier transform and its properties: Time and frequency shifting, conjugation, differentiation and integration, scaling, convolution, and the Parseval's relation. Representation of aperiodic signals and the Discrete-time Fourier transform. Properties of the discrete-time Fourier transform.
Credits (4 / 0 / 1) 4 *Prerequisites: INFE221*
Abbreviated Title: Signals and Systems *Category: Area Core Course* *Teaching Language: English*
Keywords: Continuous time signals, discrete time signals, LTI systems, Fourier transform, Parseval's relation

7. **INFE242 Electronics**
Semiconductor devices, basic amplifier concepts, diodes, P-N junction diodes, Schottky diodes, Bipolar Junction Transistors (BJTs), Field-Effect Transistors: MOSFETs, JFETs, transistor biasing.
Credits: (4 / 0 / 1) ***4*** *Prerequisite: INFE221*
Abbreviated Title: Electronics *Category: Area Core Course* *Teaching Language: English*
Keywords: Semiconductor devices, P-N junction diodes, Bipolar junction transistors, MOSFETs

8.	**MENG222 Strength of Materials** Definition of stress, strain. Hook's law. Constitutive relations for uniaxial stresses. Shearing stress and strain. Torsion of circular members. Thin walled pressure vessels. Relations between bending moment, shearing force and distributed loads. Bending of beams with symmetrical sections. Bending of composite beams. *Credits: (4 / 1 / 0) 4* *Prerequisites: MENG231 or CIVL211* *ECTS credit: 6* *Abbreviated Title: Strength of Materials* *Category: Area Core Course* *Teaching Language: English* *Keywords: Axial stress, shear stress, torsion, bending, beams, buckling*
9.	**EENG 115 Introduction to Digital Logic Design** Number systems, arithmetic operations, decimal codes, alphanumeric codes, Boolean algebra, Karnaugh maps, NAND and NOR gates,exclusive-OR gates, integrated circuits, combinational circuits, decoders, encoders, multiplexers, adders, subtractors, multipliers, sequential circuits, latches, flip-flops, sequential circuits analysis, registers, counters, RAM and ROM memories, programmable logic technologies (PLA, PLD, CPLD, FPGA). *Credits: (3 / 1 / 0) **3*** *Prerequisites: None* *Abbreviated Title: Int. to Digital Logic Desg.* *Category: Area Core Course* *Teaching Language: English* *Keywords: Number systems, arithmetic operations, Boolegan algebra, decoder, flip-flops, RAM, ROM*
10.	**MENG201 Mechanical Workshop Practice** This is to be conducted in the Mechanical Engineering Department's workshops by all Mechanical Engineering students who have completed a minimum of three semesters in the program. Students will perform various hand and machine tool operations under staff supervision. It includes introduction to engineering materials, and selected practices on laying-out and setting out a job, using measuring devices. At the end of the training students will be required to complete a report regarding their training. *Credits: (1 / 3 / 0) 2* *Prerequisites: None* *ECTS credit: 3* *Abbreviated Title: Workshop Practice-II* *Category: Area Core Course* *Teaching Language: English* *Keywords: Workshop*
11.	**MENG244 Fundamentals of Thermodynamics** Basic concepts of thermodynamics; Properties of pure substances; Energy transfer by heat, work and mass; The first law of thermodynamics; The second law of thermodynamics; Entropy; Power cycles; Refrigeration cycles. *Credits: (3 / 1 / 0) **3*** *Prerequisites: None* *ECTS credit: 6* *Abbreviated Title: Fund. of Thermodynamics* *Category: Restricted Elective for IENG/ Area Core Course for MECT* *Teaching Language: English* *Keywords: Thermodynamics, Properties of Pure Substance, First Law, Close and Open System, Second Law, Entropy*
12.	**MENG364 Manufacturing Technology** Fundamentals and principles of major manufacturing processes: casting, bulk deformation, sheet metalworking, powder metallurgy. Processing of polymers, ceramics, glass, rubber and composites. Metal cutting: cutting conditions, forces, temperatures, tool life, surface finish, coolants. Cutting tool materials. Principles, tools and process capabilities of basic machining operations: turning, milling, drilling, planning, shaping, boring, broaching. Gear manufacturing. Abrasive operations: grinding, finishing operations. Non-traditional processes. Basics of joining and assembling. Fusion and solid-state welding. Essentials of computer numerical control. *Credits: (4 / 1 /0) 4* *Prerequisites: MENG286* *ECTS credit: 6* *Abbreviated Title: Manufacturing Technology* *Category: Area Core Course* *Teaching Language: English* *Keywords: Machining, Casting, Sheet Metal Forming, Bulk Forming, Plastics*
13.	**MENG303 Principles of CAE** Integration of computers into the design cycle. Interactive computer modeling and analysis. Geometrical modeling with wire frame, surface, and solid models. Finite element modeling and analysis. Curves and surfaces and CAD/CAM data exchange. The integration of CAD, CAE and CAM systems. *Credits: (2 / 3 / 0) **3*** *Prerequisites: MENG104* *Abbreviated Title: Principles of CAE* *Category: Area Core Course* *Teaching Language: English* *Keywords: Design, cycle, computer modelling, finite element modelling, CAD, CAM, CAE*
14.	**MENG331 Dynamics of Machinery** Mechanical vibrations: 2-DOF vibrating systems, vibration measuring instruments, numerical methods for multi-degree of freedom systems, Dunkerley's equations, vibration of continuous systems, random vibrations. Balancing of machinery: rigid rotors, reciprocating machines, flywheels, planar linkages, balancing machines and instrumentation. Cam dynamics, gyroscope and governors. *Credits: (4 / 1 / 0)* *Prerequisites: (MENG233 or MENG231) and (MATH207 or MATH241)* *ECTS credit: 6* *Abbreviated Title: Dynamics of Machinery* *Category: Area Core Course* *Teaching Language: English* *Keywords: Vibration, Mechanisms, Rigid Body Dynamics, Frequency Analysis*

15.	**EENG 410 Microprocessors-I** Representation of numbers. Two's complement. Sign-magnitude notations. Fixed-length binary arithmetic. Floating-point arithmetic. Introductory microprocessor architecture. Instructions and micro-operations. Machine cycles. Instruction and data fetching. Addressing modes. Inherent, immediate, direct, relative and indexed addressing. Microprocessor interfacing. Data, address and control buses. Memory interfacing. Basic I/O interfacing. *Credits: (4 / 0 / 1)* ***4*** *Prerequisites: EENG115* *Abbreviated Title: Microprocessors Category: Area Core Course Teaching Language: English* *Keywords: Sign magnitude notations, arithmetic, microprocessor architecture, data, memory interfacing*
16.	**EENG 320 Control Systems-I** Introduction to control: open-loop and closed loop control. Modeling: transfer function, block diagram, signal flow graph, state equations. Feedback control system characteristics: sensitivity, disturbance rejection, steady-state error. Performance specifications: second-order system, dominant roots, steady-state error of feedback systems. Stability: Routh-Hurwitz criterion, relative stability. The root-locus method, Bode diagram, Nyquist stability criterion, gain margin and phase margin, Nichols chart. *Credits:(4 / 0 / 1)* ***4*** *Prerequisites: EENG226* *Abbreviated Title: Control Systems Category: Area Core Course Teaching Language: English* *Keywords: Control, open-loop, closed loop, modelling, transfer function, block diagram, feedback, signal*
17.	**IENG355 Ethics in Engineering** This course is designed to introduce moral rights and responsibilities of engineers in relation to society, employers, colleagues and clients. Analysis of ethical and value conflict in modern engineering practice. Importance of intellectual property rights and conflicting interests. Ethical aspects in engineering design, manufacturing, and operations. Cost-benefit-risk analysis and safety and occupational hazard considerations. *Credits: (3 / 0 / 0) 3 Prerequisites: None* *Abbreviated Title: Ethics in Engineering Category: Area Core Course Teaching Language: English* *Keywords: Moral rights, value conflict, engineering practice, intellectual property rights, safety, hazard*
18.	**IENG420 Fundamentals of Engineering Economy** An introduction to the basics of economic analysis for decisions in engineering design, in manufacturing, in manufacturing equipment, and in industrial projects. Time value of money. Cash flow analysis. Cost of capital. Return on investment. Elements of cost and cost estimation. Break-even analysis. Decision making among alternatives. Effects of depreciation. Taxes. Replacement analysis. Inflation. *Credits: (3 / 0 / 0)* ***3*** *Prerequisites: None* *Abbreviated Title: Fundementals of Eng. Economy Category: Area Core Course Teaching Language: English* *Keywords: Economic analysis, engineering design, manufacturing, industrial projects, cash flow analysis, cost of capital*
19.	**EENG428 Introduction to Robotics** Basic components of robot systems; coordinate frames, homogeneous transformations, kinematics for manipulator, inverse kinematics; manipulator dynamics, Jacobians: velocities and static forces, trajectory planning, Actuators, Sensors, Vision, Fuzzy logic control of manipulator and robotic programming. *Credits: (4 / 0 / 0)* ***4*** *Prerequisites: MATH241* *Abbreviated Title: Int to Robotics Category: Area Core Course Teaching Language: English* *Keywords: Robot systems, transformations, manipulator, fuzz logic, actuators, programming*

Area Elective Courses

In order to register for the Area Elective Courses with no Pre-requisites (i.e., Pre-requisites: None), minimum number of attended semesters is required to be 6.

1.	**MENG471 Mechanisms** Mobility and structural analysis; kinematic analysis of planar mechanisms; kinematic analysis and synthesis of linear mechanical systems; direct rolling and sliding contact; involute and cycloidal curves; speed ratios; simple and compound gear trains; kinematic analysis of four-link mechanisms; kinematic synthesis of planar mechanisms; two and three positions of a plane; designing with four positions; cam mechanisms and design; intermittent motion mechanisms; introduction to spherical mechanisms; Hooke's joint; the rotary step mechanisms. *Credits: (4 / 1/ 0) 4 Prerequisites: MENG233 or MENG231 ECTS credit: 7* *Abbreviated Title : Mechanisms Category: Area Elective Course Teaching Language: English* *Keywords: Linkages, Mechanisms, Kinematics*

2.	**MENG422 Automotive Engines** Internal combustion engines; two stroke and four stroke engines; spark ignition engines; compression ignition engines; basic engine parts; valve trains and timing diagrams; lubrication systems; cooling systems; fuel injection systems and ignition systems; advanced engineering- materials in automotive field. *Credits: (4 / 1/ 0) 4* *Prerequisites: MENG246 or MENG244* *ECTS credit: 7* *Abbreviated Title : Automotive Engines* *Category: Area Elective Course* *Teaching Language: English* *Keywords: Engine, piston, valve, spark plug*
3.	**MENG464 Computer Integrated Manufacturing** What is CIM; CIM definition; CIM environment; CIM benefits; Business perspectives for CIM; objectives of manufacturing business; the business characteristics of CIM systems; components of a CIM architecture; simulation, group technology; networks; concurrent engineering; decision support systems; expert system; CAD/CAM; information and material flow in manufacturing; modeling methodology and related tools in analysis and design of CIM for medium size companies. *Credits: (4 / 1/ 0) 4* *Prerequisites: None* *ECTS credit: 7* *Abbreviated Title : Computer Integrated Manufacturing* *Category: Area Elective Course* *Teaching Language: English* *Keywords: CIM, Manufacturing, CAD/CAM*

Mathematics and Basic Sciences Courses

1.	**MATH151 Calculus – I** Limits and continuity. Derivatives. Rules of differentiation. Higher order derivatives. Chain rule. related rates. Rolle's and the mean value theorem. Critical Points. Asymptotes. Curve sketching. Integrals. Fundamental Theorem. Techniques of integration. Definite integrals. Application to geometry and science. Indeterminate forms. L'Hospital's Rule. Improper integrals. Infinite series. Geometric series. Power series. Taylor series and binomial series. *Credits: (4 / 0 / 1) **4*** *Prerequisites: None* *ECTS credit: 6* *Abbreviated Title: Calculus -I* *Category: Faculty Core Course* *Teaching Language: English* *Keywords: Limits, Continuity, Derivatives, Differentiation, Chain Rule, Rolle's Theorem, Mean Value, Integrals, Taylor Series* *Department offering the course: 41 – Department of Applied Mathematics & Computer Science*
2.	**MATH152 Calculus-II** Vectors in R3. Lines and Planes. Functions of several variables. Limit and continuity. Partial differentiation. Chain rule. Tangent plane. Critical Points. Global and local extrema. Lagrange multipliers. Directional derivative. Gradient, Divergence and Curl. Multiple integrals with applications. Triple integrals with applications. Triple integral in cylindrical and spherical coordinates. Line, surface and volume integrals. Independence of path. Green's Theorem. Conservative vector fields. Divergence Theorem. Stokes' Theorem. *Credits: (4 / 0 / 1) **4*** *Prerequisites:MATH151* *ECTS credit: 6* *Abbreviated Title: Calculus-II* *Category: Faculty Core Course* *Teaching Language: English* *Keywords: Vectors, Planes, Lagrange Multipliers, Gradient, Volume, Greene's Theorem, Divergence, Stoke's Theorem* *Department offering the course: 41 – Department of Applied Mathematics & Computer Science*
3.	**MATH163 Discrete Mathematics** Set theory, functions and relations; introduction to set theory, functions and relations, inductive proofs and recursive definitions. Combinatorics; basic counting rules, permutations, combinations, allocation problems, selection problems, the pigeonhole principle, the principle of inclusion and exclusion. Generating functions; ordinary generating functions and their applications. Recurrence relations; homogeneous recurrence relations, inhomogeneous recurrence relations, recurrence relations and generating functions, analysis of algorithms. Propositional calculus and boolean algebra; basic boolean functions, digital logic gates, minterm and maxterm expansions, the basic theorems of boolean algebra, simplifying boolean function with karnaugh maps. Graphs and trees; adjacency matrices, incidence matrices, eulerian graphs, hamiltonian graphs, colored graphs, planar graphs, spanning trees, minimal spanning trees, Prim's algorithm, shortest path problems, Dijkstra's algorithms. *Credits: (3 / 0 / 1) **3*** *Prerequisites: None* ECTS credit:5 *Abbreviated Title: Discrete Mathematics* *Category: Area Core Course* *Teaching Language: English* *Keywords: Set Theory*, recurrence relations, Graphs, Trees, Matrices *Department offering the course:* Mathematics
4.	**MATH241 Ordinary Differential Equations and Linear Algebra** Systems of linear equations, elementary row operations, echelon form, Gaussian elimination method; Matrices; Determinants, adjoint and inverse matrices, Cramer's rule; Vector spaces, linear independence, bases and dimension, eigenvalue problem. First-order differential equations, separable differential equations, change of variables, exact differential equations; Second-order differential equations, the method of undetermined coefficients, the variation of parameters method; General results of first-order linear systems, homogeneous constant coefficient vector differential equations, variations of parameters for linear systems; Laplace transform method. *Credits: (4 / 0 / 1) **4*** *Prerequisites: MATH151* *Abbreviated Title: Int to Mechatronics Engineer* *Category: Area Core Course* *Teaching Language: English* *Keywords: Introduction to Mechatronics engineering, standards, ethics, communication.*

5.	**MATH322 Probability and Statistical Methods** Introduction to probability and statistics. Operations on sets. Counting problems. Conditional probability and total probability formula, Bayes' theorem. Introduction to random variables, density and distribution functions. Expectation, variance and covariance. Basic distributions. Joint density and distribution function. Descriptive statistics. Estimation of parameters, maximum likelihood estimator. Hypothesis testing. *Credits: (3 / 0 / 1) **3*** *Prerequisites: MATH151* ECTS credit: 5 *Abbreviated Title: Prob & Statistical Methods* *Category: Faculty Core Course* *Teaching Language: English* *Keywords: Probability, Statistics, Bayes' Theorem, Hypothesis Testing* *Department offering the course: 41 – Department of Applied Mathematics & Computer Science*
6.	**PHYS101 Physics I** Families of physical quantities having different dimensions, units and rules of mathematics. Vector mathematics and calculus, their applications to motion. Newton's laws. Integrals of the second law, work-energy, impulse-momentum, conservation of energy and momentum, applications. Rotations. Static equilibrium. *Credits: (4 / 1 / 0) **4*** *Prerequisites: None* *ECTS credit: 6* *Abbreviated Title: Physics I* *Category: Faculty Core Course* *Teaching Language: English* *Keywords: Physical Quantities, Vectors, Motion, Second Law, Work, Energy, Impulse, Momentum, Rotations* *Department offering the course: 42 – Department of Physics*
7.	**PHYS102 Physics-II** Kinetic theory of ideal gases. Equipartition of energy. Heat, heat transfer and heat conduction. Laws of thermodynamics, applications to engine cycles. Coulombs law and electrostatic fields. Gauss's law. Electric potential. Magnetic field. Amperes law. Faradays law. *Credits: (4 / 1 / 0) **4*** *Prerequisites: PHYS101* *ECTS credit: 6* *Abbreviated Title: Physics-II* *Category: Faculty Core Course* *Teaching Language: English* *Keywords: Charge, Electromagnetic Induction* *Department offering the course: 42 – Department of Physics*
8.	**CHEM101 General Chemistry** Atoms, molecules and ions; Mass relations in chemistry, stoichiometry; Gasses, the ideal gas law, partial pressures, mole fractions, kinetic theory of gases; Electronic structure and the periodic table; Thermo chemistry, calorimetry, enthalpy, the first law of thermodynamics; Liquids and Solids; Solutions; Acids and Bases; Organic Chemistry. *Credits: (4 / 0 / 1) **4*** *Prerequisites: None* *ECTS credit: 6* *Abbreviated Title: General Chemistry* *Category: Area Core Course* *Teaching Language: English* *Keywords: chemical terms, nomenclature, chemical bonds, polarity, states of matter, chemical formulas, measurements, natural science,basic science* *Department offering the course: 43 – Department of Chemistry*
9.	**MENG231 Engineering Mechanics** Review of vector algebra. Principle of mechanics. Static equilibrium of particles and rigid bodies. Distributed force systems. Elements of structures, beam, trusses, cables. Friction. Review of particle dynamics, force, energy and momentum methods. Planar kinematics and kinetics of rigid bodies. Energy methods. Particle and rigid body vibrations. *Credits: (3 / 0 / 1) **3*** *Prerequisites: MATH151 and PHYS101* *ECTS credit: 5* *Abbreviated Title: Engineering Mechanics* *Category: Area Core Course for IENG* *Teaching Language: English* *Keywords: Mechanics, statics, dynamics, Newton laws, Work, Energy, Momentum* *Department offering the course: 23 – Department of Mechanical Engineering*
10.	**MATH373 Numerical Analysis for Engineers** Numerical error. Solution of nonlinear equations, and linear systems of equations. Interpolation and extrapolation. Curve fitting. Numerical differentiation and integration. Numerical solution of ordinary differential equations. *Credits: (3 / 0 / 1) **3*** *Prerequisites: MATH207 or MATH241 or MATH203* *ECTS credit: 5* *Abbreviated Title: Numerical Analysis for Eng* *Category: Faculty Core Course* *Teaching Language: English* *Keywords: Numerical Analysis, Interpolation, Extrapolation* *Department offering the course: 41 – Department of Applied Mathematics & Computer Science*

General Education Courses

1.	**ENGL191 Communication in English I** ENGL 191 is a first semester freshman academic English course The purpose of this course is to consolidate and develop students' knowledge and awareness of academic discourse, language structures and lexis. The prime focus will be on the further development of writing, reading, speaking and listening skills in academic settings, and on improving study skills in general. *Credits: (3 / 1 / 0) **3*** *Prerequisites: None* *ECTS credit: 4* *Abbreviated Title: Communication in English I* *Category: University Core Course* *Teaching Language: English* *Keywords: Language, English, Reading, Writing, Speaking* *Department offering the course: Department of General Education*

2.	**ENGL192 Communication in English II** ENGL 192 is a second semester freshman academic English course The purpose of this course is to further consolidate and develop students' knowledge and awareness of academic discourse, language structures and lexis. The prime focus will be on the further development of writing, reading, speaking and listening skills in academic settings, and on improving study skills in general. *Credits: (3/ 1/ 0)* ***3*** *Prerequisites: ENGL191 ECTS credit: 4* *Abbreviated Title: Communication in English II Category: University Core Course Teaching Language: English* *Keywords: Language, English, Reading, Writing, Speaking* *Department offering the course: Department of General Education*
3.	**TUSL181 Turkish as a Second Language** TUSL181 is a Basic Turkish course introducing the Turkish language. It incorporates all four language skills and provides an introduction to basic grammar structures. Students will be encouraged to develop their writing skills through a variety of tasks. The aim of this course is for students to be able to understand and communicate in everyday situations, both in the classroom and in a Turkish-speaking environment. *Credits: : (2 / 0 / 0)* ***2*** *Prerequisites: None* ECTS credit: 2 *Abbreviated Title: Turkish as a second Language Category: University Core Course Teaching Language: Turkish* *Keywords: Turkish, grammar, writing, speaking* *Department offering the course: Department of General Education*
4.	**HIST280 History of Turkish Reforms** 19. century state of the Ottoman Empire (Constitutional Period), Tripoli and the Balkan Wars, World War II and the results, the Guilds, the War of Independence, Cease Fire Ant., Lausanne, Ant. *Credits: (2 / 0 / 0)* ***2*** *Prerequisites: None ECTS credit: 2* *Abbreviated Title: General Education VI Category: University Core Course Teaching Language: Turkish* *Keywords: History, Ottoman Empire, Wars* *Department offering the course: HC – ATATÜRK Research Center*
5.	**ENGL201 Communication Skills** ENGL 201 is a second year Mainstream Communication Skills course for students at the Faculty of Engineering. The course aims to introduce a range of skills, including effective written and oral communication, research skills and study skills. Throughout the course the students will be involved in project work intended to help them in their immediate and future academic and professional life. This will include library research, technical report writing and an oral presentation. By investigating a topic of their own choice, students will develop their understanding of independent research skills. During the report writing process, students will improve their writing and develop the ability to produce organized, cohesive work. The oral presentation aims to enhance spoken fluency and accuracy and provide training in the components of a good presentation. *Credits:(3 / 0 / 0)* ***3*** *Prerequisites: ENGL192 ECTS credit: 4* *Abbreviated Title: Communication Skills Category: Faculty Core Course Teaching Language: English* *Keywords: Communication Skills, Report Writing, Oral Presentation, Independent Research,* *Department offering the course: Department of General Education*
6.	**UE1 Introduction to Multicultural Education**

**** Departmental Consent**

University Elective Courses (Non-Technical Courses Offered by other Departments)

A list of non-technical electives is announced at the beginning of the each semester by the Department. This list contains courses offered by the Faculty of Business and Economics, the School of Tourism and Hospitality Management, Departments of Communication and Media Studies etc. University elective courses taken by Mechanical and Mechatronics Engineering students must satisfy the ABET criteria.

5- UNIVERSITY and ACADEMIC REGULATIONS

Academic Regulations have been laid down by the Northern Cyprus Educational Trust to govern and guide the functioning of Eastern Mediterranean University. The rules and regulations are available at **http://mevzuat.emu.edu.tr/.** Students should refer to the given internet address for the Regulations for Students. **In case of any conflict, the regulations in Turkish will supersede**. Some regulations are presented below.

5.1. Conditions for Taking Courses from Another Institution

a) Department and/or Faculty/School board determines whether the student can take courses outside the university or not and/or whether the courses to be taken outside the University are the equivalents of courses in the student's own program in terms of content and credits.
b) Duration of studies at another institution is included in the period of study specified in the Eastern Mediterranean University Education, Examinations and Success By-law, regardless of the difference of the institution and the number of courses to be taken.
c) Total credits of courses taken from another institution of higher education cannot exceed 25% of the course credits the student has to take during the school/undergraduate specified program period.
d) The student keeps his/her student rights in EMU, however, s/he cannot benefit from the student rights regarding diploma or student status in the higher education institution s/he takes course from.
e) A student who wishes to take courses from another higher education institution should apply to the relevant department head in writing and attach a formal and certified document summarizing the titles, credits and content of the courses to be taken as well as the weekly course timetable no later than the relevant semester or summer school registration renewal period.
f) Equivalency of the grades obtained at another higher education institution is determined by the faculty/school board decisions based on the Senate decisions and relevant by-laws.
g) Students who take courses at another higher education institution continue to pay full tuition fee or the course(s) fees in EMU. However, if the student needs to pay for the courses to be taken at another institution of higher education, fees to be paid in EMU are determined by the University Executive Board.
h) In order to be eligible to take courses from another higher education institution, a student should attend the registered program in EMU for at least one academic year and should have a minimum CGPA of 2.00.
i) Those who do not meet the requirements of article (h) can take courses from another institution of higher education with the approval of the University Executive Board and positive views of the department and faculty boards.

5.2. Student Advisor

For each registered student, a student advisor who is a member of the academic staff is appointed by the Department Chair. The student advisor has the obligation of guiding the student in course registration, or in other academic, administrative and social matters. Students must obtain their advisors' approval for the following transactions: registration, selection of core and elective courses, adding courses to their schedules, dropping courses from their schedules, and/or withdrawing from a course. Students are encouraged to meet regularly with their advisors to review their academic performance and progress, discuss problems or get scholarly advice.

5.3 Course Registration

A student registration is done according to his/her academic status as follows:

a) Registration of students with "Honor and High Honor Status": Students who are in "High Honor" or "Honor" status can optionally register for one more course in addition to the normal course load of the semester.
b) Registration of students with "Successful Status": Students who are in "Successful" status can register for at most the normal course load of the semester.
c) Registration of students with "on Probation Status": Students who are "on probation" are obliged to repeat failed courses before registering for the new ones. The students are allowed to register for two new courses at most, on the condition that they do not exceed normal course load. A student who receives "on probation" status will remain in this status until his CGPA is raised above the limits indicated in Table 5.4. In the semester following the on probation, the student is not allowed to register for more than two new courses. The student will be asked to repeat some of the courses which he had already taken in previous semesters with priority given to courses with grades F, NG and D-.
d) Registration of students with "Unsuccessful Status": Students who are in "unsatisfactory" status are not allowed to register for any new course. These students will be asked to repeat courses already taken in the previous semesters, with priority given to the grades F, NG and D-. However, in the case that the courses from which (F), (NG) or (D-) grades were obtained are not offered, or the student's course load being under the specified limit, the student can repeat courses from which a (D), (D+) or (C-) grade was obtained until the normal course load is met.
e) Registration of students with "Graduating Status": Students who are in "Successful" status are considered to be in "Graduating Status" if and only if the remaining credited courses for their graduation is less than or equal to 7 courses (including courses with F, NG and D- grades). Such students are allowed to register for the whole remaining courses provided that they fulfil the prerequisite rules.

5.4 Registration Procedure

Immediately prior to the commencement of classes for each semester, certain days are designated for formal registration, as indicated on the academic calendar. At this time, all newly admitted students are advised and given class schedules. Students must register for all mandatory courses offered in the regular semesters (Fall and Spring) of the first (freshmen) year. All registration activities must be performed by the students concerned. Registration by proxy or mail is not accepted.

a) After making the payment the students can select courses online through their student portal.
b) The student must visit his /her Advisor`s Office in order to confirm the registration. The advisor helps the students in selecting appropriate courses, and finalizes their weekly class schedule/time table for that semester based on the vacancy availability in groups.
c) After the advisor finishes the registration process, the students can see their courses registered and weekly class schedule.
d) Two days are dedicated for registration at the start of every semester.

5.5 Academic Term

Academic term" of a student refers to total number of registered courses in relation to the number of listed courses in the department's published program of study (curriculum). Non-credit courses and courses that are not included in the normal course load upon Senate's decision are not taken into account in determining a student's academic term.

5.6 Course Load

For every semester, the number of specified credit courses of a registered program makes up the semester course load. Non-credit courses are not taken into account in the computation of the course load. However, upon the recommendation of the student advisor and the approval of the Department Chair:

a) a maximum of two courses can be reduced from the normal course load of a semester. In this case, the student must register for the untaken courses at the nearest next semester the courses are offered.
b) a student's semester course load can be increased by one course at most. In order to do this,
   1. The student's Cumulative Grade Point Average (CGPA) should not be below 3.00, or
   2. The student has to be designated a 'High Honor' or an 'Honor' at the end of the previous academic term.
c) Course load of graduating students with no academic warnings can be increased by two courses. A student at the graduation semester is the student who is given the right to graduate upon the successful completion of all projected courses at the end of the last semester of an academic program in addition to at most two remaining courses in all other programs (except LAW). Non- credit courses and courses that are not included in the normal course load upon Senate's decision are not taken into account in determining course load.

5.7 Prerequisite Courses

a) In order to register for a course that has a pre-requisite, a student must have obtained at least a D- grade from the related pre-requisite course.
b) Graduating students are allowed to register for courses with pre-requisites even if they score a F grade from the pre-requisite course.
c) At all semesters (including the graduation semester), a prerequisite course and the course following it cannot be taken within the same semester if the prerequisite course has never been taken before or if the student obtained an (NG) or a (W) grade from it.
d) Faculty or School Councils have the authority to take decisions concerning the requirements for prerequisite courses.

5.8 Repeating a Course

The following provisions are applied in repeating a course:
a) A student who obtains a (D-), (F), (NG) or (U) grade from a course must register for the course at the first available opportunity.
b) If the course to be repeated is Area Elective of Engineering courses, University Elective of General Education courses or has been excluded from the program, the student is required to take another appropriate course specified by the Department.
c) If a student wishes to improve his/her previously obtained grades, s/he can repeat a course in which s/he previously passed in the last 2 years.

The grade obtained from the repeated course takes the place of the previous grade. However, the first grade still appears on the transcript.

5.9 Course Selection

Priorities in course selection are as follows:
a) Courses with (F), (NG), (U) or (D-) grades.
b) Courses of previous semesters that have not been taken yet.
c) Courses of the current semester that have not been registered yet.
d) Other appropriate courses.

5.10 Course Times / Hours

In order to enable the students to attend classes regularly, course hour clashes are avoided. The advisor may approve if there is a maximum of a two-hour clash. However, in special and mandatory conditions, upon Department Chair's consent, clashes exceeding two hours may be approved, if the student accepts the clashes.

5.11 Late Registration

Late registration is possible during the period specified in the academic calendar. Late registration penalty are determined by the Rectors' office in accordance with the principles set concerning this issue.

5.12 Adding or Dropping Courses

From the first day of the commencement of the classes until the deadline specified on the academic calendar, students are allowed to change their course schedule by adding a new course or dropping a registered course. These changes must be made upon the recommendation of the student's advisor.

5.13 Course Withdrawal

a) In a semester, a student is allowed to withdraw from two registered courses at most, provided that the student does not get into part-time status. Course withdrawal should be done between the set dates specified on the academic calendar through using online application in student portal. Online approval of the Advisor and Department Chair is necessary. A student who withdraws from a course will receive the grade 'W'. This grade is not taken into consideration during the calculation of the CGPA and the GPA, but appears on the transcript.

b) A student cannot withdraw from a course that was withdrawn before, a course that is repeated (a different course with the same reference code) or a course that has no credit.

c) Full time students can not withdraw from courses which may change the status "Part-Time".

5.14 Course Evaluation

Student course performance is evaluated by using continuous assessment mechanisms that include midterm and final examination(s), quizzes, homework, laboratory study, and course projects etc. These mechanisms are organized in order to check the students' ability in meeting the Course Learning Outcomes (CLO) and Student Outcomes (SO). During the evaluation process, the students are given a mark which is typically out of 100 and then at the end of the semester the cumulative average mark of the student is converted to a letter grade by the course instructor.
The letter grades are organized on a 4.00 point grading scale. The letter grades, their grade point equivalence and respective descriptions are given in Table 5.1.

Table 5.1 The Letter Grades

Grade	Grade Point Equivalent	Description
A	**4.0**	Superior **Pass** in a credit-course
A-	**3.7**	Superior **Pass** in a credit-course
B+	**3.3**	Very Good **Pass** in a credit-course
B	**3.0**	Very Good **Pass** in a credit-course
B-	**2.7**	Very Good **Pass** in a credit-course
C+	**2.3**	**Pass** in a credit-course
C	**2.0**	**Pass** in a credit-course
C-	**1.7**	**Conditional Pass** in a credit-course
D+	**1.3**	**Conditional Pass** in a credit-course
D	**1.0**	**Conditional Pass** in a credit-course
D-	**0.7**	**Failure** in a credit-course
F	**0.0**	**Failure** in a credit-course
NG	**0.0**	**Failure** in a credit-course due to disinterest of the student
S	**-**	**Satisfactory** (Pass in a non-credit-course)
U	**-**	**Unsatisfactory** (Failure in a non-credit-course)
I	**-**	**Incomplete** (work with excuse, grade to be given later)
W	**-**	**Withdrawal** from a course

Grades A, A-, B+, B, B-, C+, and C are issued to indicate varying levels of unconditional "Pass" status for the successful scores. Grades C-, D+, and D indicate the "Conditional Pass" status, where the students with these grades are regarded as successful given that the Cumulative Grade Point Average (CGPA) is above or equal to 2.00. Grades D- and F indicate "Failure" and the students with these grades have to repeat the course in the proceeding semester.
Students who do not comply with the required level attendance and/or not fulfilling the requirements for the evaluation of the course are given the "NG" (Nill-Grade) grade by the Instructor of the Course based on the criteria determined by the Faculty/School Academic Council.
The grades "S" or "U" are given to students who are registered to non-credit courses. "S" indicates satisfactory and "U" indicates unsatisfactory completion of the non-credit course.

"I" grade is given to students who have not sat the end of semester exam and/or has not completed some of the projects/ laboratory work which contributes to the end-of-semester grade because of a valid reason that can officially be proved if required. Such students are obliged to sit for the missed exam and/or complete the project/laboratory work at least one week before the registration period of the following semester.

Failure to comply with this will result in an automatic F grade being given for the concerned course. However, students whose reason for absenteeism continues at the end of the above indicated deadline, must apply to the Department with official certification indicating the continuation of the reason for absenteeism. The Mechanical Engineering Department Chair then takes the issue to the Faculty Academic Council where a decision will be taken on the period for the completion of the "I" grade. The period of completion requirement mentioned above is not valid for graduating students. Faculty Academic Councils determine these students' situations. An "I" grade is not taken into account in the computation of the Grade Point Average (GPA) or Cumulative Grade Point Average (CGPA). A student who thinks is eligible for "I" grade, must apply to the Course Instructor together with official documentation supporting the case, at most 3 working days following the final examination date of the course.

The grade "W" is given to students who were allowed to withdraw from a registered course between the 3rd and 11th weeks of the semester. The "W" grade is shown on the transcript of the student.

5.15 Mid-term Examinations

In every academic semester, a minimum of 1 and a maximum of 3 mid-term exams are given to students in each course. No mid-term examinations can be administered during the final week of the semester or the week before the end-of-classes.

5.16 Final Examinations

Final examinations are administered on the dates specified in the Academic Calendar.

Letter grades are announced by the Registrar's Office at a date determined by the Rector's Office.

5.17 Other Criteria to be Considered for Assessment

a. Quizzes which are prepared and evaluated by the course instructor can be administered without prior notice.
b. In applied courses, evaluation can be based on projects, workshops, laboratory reports, presentations and /or examinations. Examinations can have written or oral format. Either the course instructor or another academic member of the staff assigned by the Course Coordinator is entitled to make the workshop/lab evaluations.
c. Homework prepared during the term can be included in the overall evaluations. Homework is assessed by the course instructor or a faculty member assigned by the course instructor.

5.18 Re-sit Examinations

Re-sit examinations are not administered starting Fall 2016-17.

5.19 Make-up Examinations

a. A student who fails to sit for an examination for a valid reason is given a make-up exam. Within three working days after the examination, students who wish to take a make-up must submit a written statement to the course instructor or the course coordinator explaining the reason(s) for his/her request.
b. Make-up exams for the mid-term exams may take place within the semester.
c. No separate make-up exams are administered for final exams.
d. If the cause of the student's absence persists during the time allocated for the make-up examination, a new make-up is given. However, if the make-up examination is not taken by the student ten days before the registration period for the new term begins, the situation is brought to the attention of the Faculty/School Academic Council and decided on accordingly.

5.20 Graduation Make-up

Any student who is at the graduation semester but fails to fulfill all requirements is eligible to take the graduation make-up examination under the following circumstances:

a. Students who fail to meet the graduation requirements due to F and/or D- grades are allowed to sit the exam for up to 2 courses with previously obtained grades of F and/or D- provided that these courses were taken within the last two semesters.
b. Students who fail to meet the graduation criteria due to low CGPA (less than 2.00) are allowed to take the graduation make-up examination for up to 2 courses with D, D+, C- grades.
c. A student who fails a graduation make-up of a specific course must register for that course again. A graduation make-up cannot be given for courses with NG grades. Grades obtained from the graduation make-ups are evaluated as term letter grades.

5.21 Appeals

a. A student has the right to ask the relevant academic staff member to see all documents involved in the determination of the semester grade no later than a week following the publication of the letter grades.
b. Any appeal against the marks of a mid-term examination or any other assessment components must be made to the course instructor within one week following the announcement of the marks. The relevant course instructor is required to evaluate the appeal within one week. If the student is not satisfied with the instructor's evaluation, s/he has the right to appeal in writing to the relevant department chair within 3 days following the instructor's evaluation date. The department chair will form a committee of instructors to finalize the student's appeal within one week. The decision of the committee is final.
c. Any appeal concerning a letter grade must be made to the relevant course instructor no later than the end of the registration period of the

following semester. Appeals against semester grades are finalized based on the principles laid out in 'b'.

d. In cases where the letter grades have been assigned inaccurately and/or an administrative/calculation mistake has been made, taking the relevant course instructor's application for a grade change into consideration, the relevant grade change takes place with the decision of the Department Council, Faculty Council and the University Executive Board, on the condition that the mistake has been supported by evidence, the relevant student has not graduated and/or the period between the announcement of the end of semester letter grades and the application for a grade change has not exceeded one calendar year.

5.22 Semester Evaluation by GPA

A student's academic achievement for each term is expressed numerically by an index referred to as the "Grade Point Average" (GPA). When calculating the GPA, mid-term exam(s), the final exam, lab/workshop reports and/or exams (if applicable), tests, projects, and/or homework are taken into consideration. Credit received from a course is found by multiplying the credit hours by the coefficient corresponding to the grade received. The GPA is then found by dividing the sum of the credits received from all courses registered during the semester by the total credit hours of the same courses. All grades from A to NG are included in the calculation of the Grade Point Average (GPA). An example of GPA calculation is illustrated in Table 5.2 below.

Table 5.2 GPA Calculation

Course Code	Letter Grade Received	Grade Point Equivalent		Credit Hours		Total Credits
MLDE118	B-	2.70	x	3	=	8.10
MATH106	C	2.00	x	3	=	6.00
ENGL191	B	3.00	x	3	=	9.00
PHYS101	A	4.00	x	4	=	16.00
MATH151	D-	0.70	x	4	=	2.80
				TOTAL=17		41.90

GPA = (41.90/17) = 2.46

2.23 Overall Evaluation by CGPA

A Student's overall academic achievement is expressed by a real number called the "Cumulative Grade Point Average" (CGPA). The CGPA is calculated by dividing the total credits received from all courses the student has completed since joining the program by the sum of the credit hours of these courses. In cases when a course is repeated, the last grade is included in the CGPA computations. In this case, the student whose GPA is given as an example above will have the following calculation for his/her GPA and CGPA for the following semester (Table 5.3).

Table 5.3 CGPA Calculation

Course Code	Letter Grade Received	Grade Point Equivalent		Credit Hours		Total Credits
MENG233	B+	3.30	x	4	=	13.20
ENGL192	C	2.00	x	3	=	6.00
MATH151	C	2.00	x	4	=	8.00
PHYS102	A	4.00	x	4	=	16.00
HIST280	B	3.00	x	2	=	6.00
				TOTAL=17		49.20

GPA = (49.20/17) = 2.89

CGPA = ((41.90+49.20-2.80) / (17+17)-4)

CGPA = 88.30 / 30 = 2.94

In Table 5.3, as MATH 151 course is repeated, the last grade obtained is calculated instead of the previous grade given in Table 5.2. Therefore, the 4 credits and the 2.80 credit-hour value belonging to the previous term are not included to calculation of the CGPA.

5.24 Scholastic Standing

a) Satisfactory Students: A student is considered successful if the required CGPA for a particular semester is achieved as given in Table 5.4.

b) Honor and High Honor Students: Students who (with a full course load, and with maximum number of course) obtain a GPA between 3.00 and 3.49 are designated an "Honor Student". Students who obtain a GPA between 3.50 and 4.00 are designated a "High Honor Student" status.

c) Success for Undergraduate Programs (registered after 2007-08): Academic standing of the students is monitored and regulated according to the Table 5.4 which relates End of Academic Term (EAT) with the obtained CGPA. Students enrolled in an undergraduate program whose CGPA's are specified in Table 5.4 are considered to be "successful", "on probation" or "unsuccessful".

Table 5.4 The Acting Standing

End of Academic Term (EAT)	Successful Student	Students On Probation	Unsuccessful Student
1st EAT	-	-	-
2nd EAT	CGPA ≥1.50	1.00 ≤ CGPA< 1.50	CGPA< 1.00
3nd EAT	CGPA ≥1.50	1.00 ≤ CGPA< 1.50	CGPA< 1.00
4th EAT	CGPA ≥1.50	1.00 ≤ CGPA< 1.50	***
5th EAT	CGPA ≥1.80	1.50 ≤ CGPA< 1.80	CGPA< 1.50
6th EAT	CGPA ≥1.80	1.50 ≤ CGPA< 1.80	CGPA< 1.50
7th EAT	CGPA ≥1.80	1.50 ≤ CGPA< 1.80	CGPA< 1.50
8th and more EAT	CGPA ≥2.00	1.80 ≤ CGPA< 2.00	CGPA< 1.80

*** Students who completed a minimum of 4 academic semesters (if the fourth semester is Spring Semester, then at the end of the Summer School) and who have a CGPA below 1.00 are dismissed from the program.

The starting semester of students transferring from one program to another internally or externally is accepted as an Academic Term. However, transfer students are considered as successful at the new program at the end of the first semester of the transferred program. Based on the Student Exchange Program framework, every semester spent out of the University is considered as an Academic Term. Unless there is a valid reason specified in By-Laws and Regulations, students are required to finish four-year programs at most in 8 years. Periods of leave of absence are not taken into consideration in the specified periods above. Students who fail to graduate within the specified period are dismissed from the University. However, graduating students who meet specific requirements may be given an additional time period. Requirements, additional time period and rules concerning graduating students are regulated by the 'Course Registration By-Law'.

5.25 Leave of Absence

a. Students may request online for a leave of absence on the understanding that they will return to the program of study and subject to permission being granted by the University.
b. Application for leave of absence should be made in writing to the Registrar's office. Such applications made from abroad must be certified by a Commissioner of Oaths.
c. Students can apply for leave of absence with a valid reason within the first 5 weeks of the semester starting from the first day of the commencement of classes. Decision on these applications is given, by the Rector, upon the proposal of the Dean who has considered the advice of the Department Chair.
d. Students can apply for leave of absence only with the report of an official Health Council certifying the nature of illness or other official documentation certifying the reason put forward in the application. Such applications must be submitted within the first 5 weeks of the semester starting from the first day of the commencement of classes. In overseas applications the date of official certification is taken into consideration. Decision on all such applications is given, by the Rector upon the proposal of the Dean based on **the recommendation of the Department Academic Council.**

Returning from Leave of Absence

At the end of the 'leave of absence' period, students can simply continue their education by following the routine registration procedure. Students, who were granted 'leave of absence' on health grounds, must provide a certificate approved by the Health Council indicating their fitness for co1ntinuing their studies. Students granted two semesters of 'leave of absence' and who wish to return to their studies at the end of the first semester, should apply in writing to the Registrar's Office. Each such application is considered according to the procedure followed in the evaluation of applications for leave of absence.

5.26 Cancelling Registration from the University and Refunding

A student can cancel registration from the University by applying in writing to the Registrars' Office and completing the necessary process. Following the completion of the process, the student will be entitled to a refund of the tuition fee based on the principles determined by the Board.

5.27 Attendance Requirements

Students are required to attend the registered courses, laboratory, studio, tutorial, practice, other academic studies and examinations required by the related course instructor. Student attendance is monitored and assessed by the course instructor. A student who fails to meet the requirements of a course or who is absent more than the limit specified by the Faculty or School is considered to be unsuccessful in that course.

5.28 Student Status

Students can be categorized as *full-time*, *part-time*, *special* and *visiting*.

a. Students have the full-time status provided that they take 3/5 or more of the total credit hours per semester at an undergraduate or school program.
b. Students who take less than 3/5 of the total credit hours per semester upon the recommendation of the student advisor and consent of the department head/school director are considered as part-time at an undergraduate or school program.
c. A student who is not registered to any program, but who is permitted to attend the lectures of some courses, is given the status of Special Student. No diploma or degree is conferred upon such students, but a certificate showing the courses completed and student performance is prepared by the Registrar's Office. Applications for Special Student status are evaluated and decided on by the Department Chair or the School Director. Registration of accepted special students is carried out by the Registrar's Office according to the rules stated in these regulations. Such students are required to possess at least a Secondary School Diploma.
d. Students who receive undergraduate or postgraduate education at an institution within the country or abroad and, upon their institution's consent, who take courses at the Eastern Mediterranean University with the aim of credit transfer are considered as visiting students. No diploma or degree is conferred upon such students, but a transcript summarizing the courses taken and credits earned is issued.

5.29 Student Portal Service

A student portal service is provided by the university Registration Office to help the students follow their letter grades for the respective courses, grade point average (GPA) of the respective semester and cumulative GPA (CGPA) for all of the completed semesters. The portal provides a solid foundation for students and their advisors in following the students' progress through their degree study. The student performance and progress are continuously monitored and managed with the student advising system.

5.30 Summer School

Summer school is organized mainly to help students with low scholastic achievement, and may be registered to for credit with the approval of the Department. These sessions are normally held before the Fall semester and form periods of intensive study which last for eight weeks. Any number of courses may be offered, although this is based on student demand, as reflected by pre-registration procedures. A student may register for a maximum of two courses offered during the summer school through the registration procedure outlined above for a normal term. The scholastic achievement is graded in the same way and included in the CGPA calculations at the end of the summer session.

6- DEPARTMENTAL COMMITTEES

Departmental council establishes working committees and assigns faculty members to the committees. Each committee is responsible for one subject and carries out necessary work regarding the subject. Departmental committees for Fall 2016-2017 are as under:

ABET COMMITTEE	GRADUATE COMMITTEE
Asst. Prof. Dr. Neriman Özada (Chair) Asst. Prof. Dr. Davut Solyalı Asst. Prof. Dr. Murat Özdenefe Assoc. Prof. Dr. Qasim Zeeshan	Asst. Prof. Dr. Neriman Özada (Chair) Prof. Dr. Ugur Atikol Assoc. Prof. Dr. Qasim Zeeshan

ALUMNI COMMITTEE	PROMOTIONS COMMITTEE
Asst. Prof. Dr. Neriman Özada (Chair) Asst. Prof. Dr. Murat Ozdenefe Assoc. Prof. Dr. Qasim Zeeshan	Asst. Prof. Dr. Murat Özdenefe (Chair) Assoc. Prof. Dr. Qasim Zeeshan

WORKSHOP AND LABORATORIES COMMITTEE	GRADUATION PROJECTS COMMITTEE
Instr. Cafer Kızılörs (Chair) Assoc. Prof. Dr. Hasan Hacışevki Asst. Prof. Dr. Davut Solyalı	Assoc. Prof. Dr. Qasim Zeeshan (Chair/ *Co-ordinator of MECT410*) Asst. Prof. Dr. Davut Solyalı (*Co-ordinator of MECT411*)

TRANSFER STUDENTS COMMITTEE	FACULTY RECRUITMENT COMMITTEE
Instr. Cafer Kızılörs (Chair) Prof. Dr. Uğur Atikol	Assoc. Prof. Dr. Hasan Hacışevki (Chair) Asst. Prof. Dr. Neriman Özada Asst. Prof. Dr. Davut Solyalı

SUMMER PRACTICE COMMITTEE	UNDERGRADUATE CURRICULUM COMMITTEE
Asst. Prof. Dr. Murat Özdenefe (Chair) Assoc. Prof. Dr. Hasan Hacışevki Instr. Cafer Kızılörs	Instr. Cafer Kızılörs (Chair) Asst. Prof. Dr. Davut Solyalı Assoc. Prof. Dr. Qasim Zeeshan

STUDENT ADVISORY COMMITTEE
Asst. Prof. Dr. Neriman Özada (Chair) Assoc. Prof. Dr. Hasan Hacışevki Asst. Prof. Dr. Davut Solyalı

7- CODE OF ETHICS for STUDENTS

Students are expected to adhere to and practice the following Code of Ethics

Honest and Respectful Representation

Every student of the department is expected to represent him or herself honestly and respectfully in all situations, whether orally or in written statements. Honest and respectful representation includes, but is not limited to:

- Providing only truthful material information on all University applications, financial aid forms, waivers, and any other official document.
- Students are also expected to behave respectfully to all administrators, faculty, staff, students, and visitors within the Department or campus environment and to behave respectfully when representing the Department or EMU at on- or off-campus events.

Acting with Academic Honesty

Students are expected to maintain the highest standards of academic integrity.

- Work that is not of the student's own creation will receive no credit. If a student is uncertain of what these standards are, he or she may consult his or her instructor for appropriate counsel, but a student's ignorance is no legitimate defense for academic dishonesty.
- Academic dishonesty includes lying, cheating, stealing, and using unauthorized materials on any assignment, quiz or exam.
- The act of lying is to intentionally provide false information or a false statement with the purpose of misleading or with irresponsible regard of the truth. Lying, in both academic and non-academic activities, is impermissible.
- Cheating is acting dishonestly in order to gain an unfair advantage. Cheating includes giving or receiving unauthorized aid on any assignment, quiz, or exam. Instructors must be consulted regarding which materials are acceptable for students to use on any assignment, quiz, or exam.
- Cheating also includes using the same material of work previously used for another course unless the student has permission from the instructor to do so.
- Cheating furthermore includes plagiarism, which is when a student uses the ideas of another and declares it as his or her own.
- Students are required to properly cite the original source of the ideas and information used in his or her work.
- Stealing is the act of taking without permission and without intention to return. The prohibition of stealing includes property of any nature as well as academic work.

Respect for University Rules and Regulations

Students of the EMU are expected to adhere to the rules and regulations set by the University.

Respect and Care for University Property

- Damaging of University property is unacceptable and a violation of EMU Rules and Regulations. Students shall be responsible for the costs of the damages resulting from their behavior.
- Students are also expected to report instances of any damage to University property immediately; as well as consciously account for or dispose properly of their belongings.

Avoiding the Use of Illegal Substances

- The use of illegal drugs and alcohol is not permitted on Campus as well as the abuse or misuse of prescription drugs.

Refraining from any Assault and Harassment

- Students shall refrain from using language or acting in a manner that is disrespectful or inappropriate towards other students and members of the EMU community.
- Sexual assault and harassment is inexcusable and shall result in disciplinary action in accordance with the University policy.

Respectful Classroom Conduct

- Students must behave respectfully toward their peers and professors.
- In the classroom setting, students may not interrupt their classmates or professor, make fun of them or their expressed views, or disrupt the learning environment.
- It is important to maintain the best learning environment for all students and professors.
- Not complying with the restrictions of the instructor will result in appropriate discipline, as decided by the instructor or department.

Respect for the Open Exchange of Ideas

- Students shall be guaranteed that their right of Freedom of Speech will be observed by all faculty and EMU members, including other students.
- Students are encouraged to engage others in thoughtful and meaningful dialogue while refraining from acting or using language with malicious intent.

8- APPENDIX: CAPSTONE TEAM PROJECTS

Capstone Team Projects

Every student in Mechatronics Engineering Program must take MECT410 and MECT411 courses for Capstone Team Project. These courses are designed as the 'capstone' of the educational program for mechatronics engineering students, allowing seniors to integrate their acquired knowledge and apply it to a real world problem. In solving such a problem, students are required: to utilize creative processes and inductive reasoning in one or more departmental areas of specialization; to develop, evaluate and recommend alternative solutions to an open-ended problem; to satisfy realistic constraints, such as time, cost, availability, and ethical; and to demonstrate capabilities to cooperate in a small project team. Project topics may be principally experimental, theoretical or applied, and will be authorized by the project supervisor.

Project Team

Senior students will be part of a project team for the semester. Project teams will typically consist of two or three individuals. Teams will be formed by the course coordinator, in conjunction with the supervisors during the first week of the semester. Individuals will be assigned to teams taking into account their common technical interests, skills and abilities, and expressed personal preferences. A team assignment form is filled in by the supervisor and passed on to the course coordinator. Each team will select a project (either from the industry or from the ones announced by the faculty members) and operate as an engineering group that has been organized specifically to solve that particular problem. The team will be responsible for the design of its internal organization, establishment of internal responsibilities, determination of project goals and objectives, overall management of project activities, performance analysis, achievement of results, development of recommendations, and preparation of all oral and written reports. In addition, project teams are expected to consult relevant books, standards, technical journals, websites, vendor catalogues, and any other media as dictated by the project. The communications component of this course, both written and oral, represents a significant proportion of the learning experience. Student teams will be asked to present current and final project results in both a written and oral format and to have frequent interaction with the faculty project supervisor regarding the status of project progress. The format of the reports can be seen on the department website. me.emu.edu.tr

Project Supervisor

Each team will be assigned a project supervisor among the faculty members of the department. Team will report to the project supervisor on a regular basis according to the course semester schedule.

Learning Outcomes:

1. Learn how to establish team and team work
2. Learning how to deal with a design problem
3. Making detailed research about certain topics
4. Learning the importance of standards and applications
5. Learning the planning stages of design procedure

Student Outcomes (MECT410): a, c, d, e, f, g, h, i, j, k

Student Outcomes (MECT411): a, b, c, d, e, f, g, h, i, j, k

Requirements for project approval:

1. Engineering analysis (mathematical or experimental)
2. Design on paper (using technical drawing tools)
3. Fabrication (preferably in the workshop)
4. Operation and testing
5. Technical Report, Presentation and Demonstration

Table A1. List of Some Capstone Team Projects

Project	Supervisor
Designing, Manufacturing And Testing Of Different Types Of Solar Air Heaters (SAH) in winter/summer conditions of Famagusta region in TRNC	Assoc. Prof. Dr. Hasan Hacışevki
Designing and Manufacturing a Force Balance And Moment Measuring System for Low Speed Wind Tunnel	Assoc. Prof. Dr. Hasan Hacışevki
Design and Development of Extrusion Die	Assoc. Prof. Dr. Hasan Hacışevki
Design & Development of Smart Phone Controlled Electric Car	Asst. Prof. Dr. Davut Solyalı
Design & Development of Intelligent Wearable Gear for Visually Impaired	Asst. Prof. Dr. Davut Solyalı
Design & Development of Solar Powered Wheel Chair	Asst. Prof. Dr. Davut Solyalı
Design & Development of Exo Skeleton Arm	Asst. Prof. Dr. Neriman Ozada
Artificial Muscle Design	Asst. Prof. Dr. Neriman Ozada
Design and construction of A solar energy experimental rig in the energy lab	Prof. Dr. Ugur Atikol
Design and construction of a gas space heating demonstration kit in the energy lab	Prof. Dr. Ugur Atikol
Design and Manufacturing of a Shell and Tube Heat Exchanger	Asst. Prof. Dr. Murat Ozdenfe
Design and Manufacturing of a Heat Sink	Asst. Prof. Dr. Murat Ozdenfe
Design & Development of a Desiccant Cooling System	Dr. Devrim Aydin
Design & Development of an Indirect Solar Crop Dryer	Dr. Devrim Aydin
Re-design of the Ball Throwing Machine	Lec. Cafer Kızılörs
Design and manufacturing of a Balancing Machine	Lec. Cafer Kızılörs
Design and Development of a Wind Powered Vehicle	Assoc. Prof. Dr Qasim Zeeshan
Design and Development of a Vertical Axis Wind Turbine	Assoc. Prof. Dr Qasim Zeeshan
Design and Development of a Solar Powered Airship	Assoc. Prof. Dr Qasim Zeeshan