Eastern Mediterranean University (EMU)

School of Computing and Technology

Biomedical Equipment Technology Technician Programme– Student Handbook

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1. Biomedical Equipment Technology Technician Programme

1.1 Programme vision and mission

The fundamental mission of the program is to bring up well-qualified and highly-motivated intermediate workforce equipped with theoretical and practical information, possessing the skills to use computers and technology effectively when needed, following the new developments in their area of profession, communicating in a foreign language, easily adapting to changes, effectively working in a team, possessing cultural awareness and professional ethics in catering for the demand from the hospitals and health institutions both in Turkey and the TRNC. The program endeavors to meet the demand for professionals who will deliver high-quality services in the use, maintenance and repair of the biomedical equipment.

1.2 General Information

The freshman year focuses on the development of a second language and the introduction and analysis of the sub-fields of the profession through courses training students on the basic electric, electronics, numerical electronics, formation of the biological indicators, measurement of the EEG, EMG and EKG indicators and computer skills. During the second year, courses focus on both theory and application and cover the topics of medical instrumentation, failure in biomedical systems, medical imaging systems and medical applications in private and state hospitals. In the third year, they learn hospital organization, more advanced electronics and microprocessor. In the last period, they learn laboratory and diagnostic tracking devices and have the opportunity to combine all this knowledge they have accumulated with applications in public hospitals.

1.3 Facilities

In the Department of Biomedical Device Technology, there are two electronic laboratories, and 20-person setups equipped with oscilloscopes, power supplies and signal generators on single-person experimental tables in each laboratory. In the Biomedical Devices laboratory, there are blood pressure measurement kit, EKG Training Set, EKG Simulator Training Set, Respiratory Rate Monitor Training Set, EMG Training Kit, EEG Training Kit and EOG Training Set. In the Microprocessors Laboratory, there is an environment suitable for applications on Arduino training sets and PLC application mechanism. There is also the LPFK rapid PCB prototyping device.

1.4 Accreditations

Having gained the approval of the Turkish Higher Education Board (YÖK) and the Higher Education Planning, Evaluation, Accreditation and Coordination Council (YÖDAK), the program offers high quality education through the prominent academic staff and up-to-date technological facilities. The program also offers hands-on practice for students through laboratories and internship opportunities. Electrical and Electronics Technology program has the ASIIN accreditation. ASIIN (Accreditation Agency Specialized in Accrediting Degree Programs in Engineering, Informatics, the Natural Sciences and Mathematics) is one of the most important quality assurance institutions for technical and scientific study programs.

https://www.asiin.de

1.5 Career Opportunities

Graduates of our department are high-quality technical intermediate staff that the market primarily seeks and complete an important link in the business hierarchy. It has a very positive effect on raising the quality of work in the market and, accordingly, the formation of a business structure in accordance with international standards.

Some of the graduates' fields of employment include:

- Public and private hospitals
- polyclinics
- Medical laboratories
- Technical services of medical device companies

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3. Curriculum

First Year Fall Semester (18/70 Credits, 25/120 ECTS)						
Course Code	**Ref. Code**	**Course Name**	**Credit**	**ECTS**	**Category**	**Prerequisite(s)**
ENGL161	3D711	Basic English I	(3,0,1) 3	4	UC	
MATE117	3D712	Mathematics for Electronic Technicians	(3,0,1) 3	5	UC	
BMET111	3D713	Anatomy And Physiology	(3,0,0) 3	4	AC	
EETE143	3D714	Electrotechnology	(2,3,0) 3	5	AC	
EETE101	3D715	Introduction to Computing	(2,2,0) 3	3	AC	
EETE113	3D716	Properties of Electronic Materials	(3,0,0) 3	4	AC	

First Year Spring Semester (18/70 Credits, 25/120 ECTS)						
Course Code	**Ref. Code**	**Course Name**	**Credit**	**ECTS**	**Category**	**Prerequisite(s)**
ENGL162	3D721	Basic English II	(3,0,1) 3	4	UC	ENGL161
EETE132	3D722	Electronics - I	(2,3,0) 3	5	AC	
EETE134	3D723	Digital Electronics	(3,1,0) 3	4	AC	
EETE152	3D724	Computer Applications	(2,3,0) 3	4	AC	EETE101
BMET112	3D725	Medical Instrumentation - I	(3,1,0)3	4	AC	
BMET168	3D726	Medical Communication	(3,0,0) 3	4	AC	

First Year (0/71 Credits, 10/120 ECTS)						
Course Code	**Ref. Code**	**Course Name**	**Credit**	**ECTS**	**Category**	**Prerequisite(s)**
BMET200	3D738	Summer Practice / Yaz Stajı	(0,0,0)0	10	AC	-

Second Year Fall Semester (18/70 Credits, 30/120 ECTS)						
Course Code	**Ref. Code**	**Course Name**	**Credit**	**ECTS**	**Category**	**Prerequisite(s)**
EETE231	3D732	Electronics II	(2,3,0) 3	5	AC	EETE132
EETE233	3D733	Microprocessors	(3,1,0) 3	5	AC	EETE134
BMET251	3D734	Medical Instrumentation II	(3,1,0) 3	5	AC	BMET112
BMET252	3D735	Fault Analysis in Biomedical Systems	(3,1,0) 3	5	AC	
BMET253	3D736	Medical Imaging Systems	(3,0,0) 3	5	AC	
EETE271	3D737	Occupational Terminology	(3,0,1) 3	5	AC	

Second Year Spring Semester (8/70 Credits, 30/120 ECTS)						
Course Code	**Ref. Code**	**Course Name**	**Credit**	**ECTS**	**Category**	**Prerequisite(s)**
BMET262	3D741	Biomedical Signal Processing	(2,3,0) 3	8	AC	EETE231
BMET264	3D742	Medical Applications	(0,0,0) 3	20	AC	
HIST280	3D747	Atatürk's Principles And History Of Turkish Reforms	(2,0,0) 2	2	UC	

Third Year Fall Semester (15/21 Credits, 30/60 ECTS)						
Course Code	**Ref. Code**	**Course Name**	**Credit**	**ECTS**	**Category**	**Prerequisite(s)**
ELET311	3M751	Microprocessor Applications	(2,3,0) 3	6	AC	
ELET315	3M752	Industrial Electronics	(2,3,0) 3	6	AC	
BMET301	3M753	Laser and Medical Applications	(3,0,0) 3	6	AC	
BMET303	3M754	Hospital Organization And Management	(2,3,0) 3	6	AC	
AE01	3M755	Technical Elective	(3,0,0) 3	6	AE	

Third Year Spring Semester (6/21 Credit, 30/60 ECTS)						
Course Code	**Ref. Code**	**Course Name**	**Credit**	**ECTS**	**Category**	**Prerequisite(s)**
BMET302	3M761	Medical Training	(0,0,0) 0	20	AC	
BMET304	3M762	Laboratory Support Equipment	(3,0,0)3	5	AC	
BMET306	3M763	Diagnosis and Tracking Devices	(3,0,0)3	5	AC	

AC = Area Course AE = Area Elective UC = University Core

4. Course Descriptions

ENGL 161 English I

ENGL161 is the first semester, first year English language course offered to all students studying in a 2-year Turkish Medium Program at the university. It is designed to help students improve the level of their English to halfway towards A1 level, as specified in the Common European Framework of Reference for Languages. This course introduces the students to the English language and aims to develop listening, speaking, reading and writing skills.

MATE 117 Mathematics for Electronic Technician

The aim of course is to provide the students of electric and electronics with a sound background in mathematics and in mathematical concepts, as applied to the theory and analysis of electric and electronic devices and circuits. This course covers the following topics: Arithmetic Fractions, Operations with Powers and Roots of Numbers, Scientific Notation and Powers of Ten, Units--Measurements and the Metric System, Introduction to Algebra and their operations , Equations and Formulas, Factors of Algebraic Expressions, Operations on Algebraic Fractions, Fractional Equations, Simultaneous Equations, Complex Algebra, Logarithms, Natural Logarithms and Exponential Functions, Fundamentals of Trigonometry, Vector Fundamentals Basic Integration, Differentiation and Application.

BMET111 Anatomy and Physiology

The aim of this course is to teach how the organs and systems work in the human body along with its structure, shape and the relationships among organs making up this structure.

EETE101 Introduction to Computing

This course mainly includes description of basic computer hardware units, different operating systems, computer networks and Internet. It also describes office programs in order to create documents with word processors, develop spreadsheets with formulas and do effective presentations with slides.

EETE 113 Properties of Electronic Materials

The aim of this course is to teach students basics of electromagnetic, electrostatic and electrodynamics, basics properties of semiconductor materials such as atomic structure, conduction, energy levels, p and n type materials, structure of diode and transistors.

EETE 143 Electrotechnology

The aim of this course is to teach students the basic concepts of basic electrical concepts, voltage, current, resistance and calculations and definitions, frequency and period definitions and calculations, power, energy, phase angle, RC circuits

ENGL 162 English II

ENGL162 is the second semester, first-year English language course offered to all students studying in a 2-year Turkish Medium Program. It is designed to help students improve the level of their English to A1 level, as specified in the Common European Framework of Reference for Languages. This course introduces the students to the English language and aims to develop listening, speaking, reading and writing skills in academic settings.

EETE 132 Electronics I

The aim of this course is to teach students practically and theoretically basic operation of diode and other types of diodes; basic principles of AC/DC converters, limiters, clampers and voltage multipliers and biasing techniques, load lines and use of transistors as a switch.

EETE 134 Digital Electronics

The aim of this course is to teach the basic concepts of digital electronics, circuit components, circuit design and testing.

EETE 152 Computer Applications

The aim of this course is to teach circuit simulation and circuit analysis as well as the computer applications used in the field of electrical and electronics.

BMET112 Medical Instrumentation I

The aim of this course is to teach measurement methods of physiological parameters. The description of Medical Electronics as a discipline among other disciplines; evolution of medical devices and Human-Instrumentation System,formation of biological signals; electrical activation in cells;simple explanation for the formation of membrane potential, measurement of electroneurogram signals; nervous system; propagation and recording methods of action potentials in nerves; nervous system related measurements;measurement of Electromyogram signals; muscles, resulting voltage during the contraction of muscle, analysis methods of EMG signals and measurement systems. Measurement of electrocardiogram signals; heart, derivatives, ECG measurement system, right leg driver, improvements in electrical safety of ECG systems and problems encountered; Respiratory System and measurements of the respiratory system.

BMET 168 Medical Communications

The aim of this course is to teach the aims, definitions and classes of medical equipments, classes due to usage areas, international equipment terminology, and classes of dangers, safe working and standarts. definitions of some medical equipments, aim of those equipments and working principles of those equipments and teach how to find the required sections and the basic instructions about a biomedical equipment from the documents (service manual) in English, how to select barriers according to task in hospital, the basic medical wastes and sterilization techniques and disinfection.

EETE 231 Electronics II

The aim of this course is to teach both theoretically and practically the operation of transistor, FET and MOSFET as a single and multi-stage voltage amplifier.

EETE 233 Microprocessors

The aim of this course is to teach the basic concepts and applications of microprocessors as well as the structure, operation and programming of micro-controllers.

BMET 251 Medical Instrumentation II

Measurement of Electroencephalogram and evoked potential signals, applications, measurement and analysis of EEG signals by using computer, measurement system of evoked potentials. Measurement of Electroretinogram and Electrooculogram signals.Measurement of blood pressure, direct and indirect methods, pressure transducer amplifiers and circuits, phonocardiography and

auscultation. Measurement of blood flow and volume, blood flow dynamics, continuous injection and indicator dilution methods, electromagnetic method, ultrasonic method, Laser Doppler blood flow measurement, impedance plethysmography.Electrodes and Transducers.

BMET 252 Fault Analysis in Biomedical Systems

The aim of this course is to teach students fault detection and troubleshooting of medical equipment as well as the necessary precautions that must be taken while using biomedical systems. Electrical fault finding, electrical safety, leakage current monitoring, isolated power systems, grounding systems as precaution against electric shock.Troubleshooting relays and contactors, electronic cards, mechanical units.

BMET 253 Medical Imaging Systems

The aim of this course is to teach applications and operation principles of medical imaging devices. Production and detection of X-Rays, imaging properties of X-Rays, biological effects of ionized radiation. Conventional X-Ray devices, digital subtraction angiography, and computerized tomography. Basics of acoustic radiation, ultrasonic diagnosis methods. Basics of radionuclide imaging, production and detection of nuclear radiation, principles of gamma camera.Basics of magnetic resonance imaging, production and detection of MR signal, imaging methods.

EETE 271 Occupational Terminology

The aim of the course is to teach basic English provision of technical words, technical catalogue follow-up, dictionary use, brochures and technical installation documentation follow up. In addition, technical writing and ordering supplies with companies will be shown.

BMET 200 Summer Training

Students are required to perform jobs related with field of study at a public/private hospital or at a biomedical equipment service company for fifty working days with the rules and regulations set by the department and to apply troubleshooting techniques which they learn in courses.

BMET 262 Biomedical Signal Processing

The aim of this course is to teach generation and processing of biomedical signals.Selection of circuits for analogue processing of biological signals. Biological signals, noise reduction methods in biological signals, A\D processing methods, block diagram of general measurement and detection system, block diagram of signal processing and main function of each block, circuit types.Schematics of circuits for analogue signal processing of biological signals. Conversion of analogue biomedical signals into digital signals.

BMET 264 Medical Applications

Students are required to perform jobs related with field of study three times a week and to learn organization and management of hospital and troubleshooting techniques in a biomedical workshop at a hospital with the rules and regulations set by the department. They are examined by their instructor at the end of the semester.

ELET 311 Microprocessor Applications

The aim of this course is to develop programming techniques for microcontroller. The basic concept of programming techniques and microcontroller systems must be taught in EETE233.

ELET 315 Industrial Electronics

The aim of this course is to teach the students four layer semiconductor devices (SCR, Triacs, Diac etc,) principles, power calculations and AC\DC applications theoretically and practically.

BMET 301 Laser and Medical Applications

The aim of this course is to teach operation principles and medical applications of different lasers. Properties of laser. Classification of lasers based on active medium and power. Principles of laser-tissue interactions. Optical properties of biological tissues. Properties of lasers used in medicine. Medical applications of lasers.

BMET 303 Hospital Organization and Management

The aim of this course is to provide the medical device technicians with detailed information about the management of hospitals, and the organizational differences and similarities between hospitals in Turkey and abroad**.**

AE01 Introduction to Telecommunications

The aim of this course is to teach the basic concepts of analog communication and modulation (AM, FM, etc); digital and data communication and modulation techniques and data communication.

BMET 302 Medical Training

Students are required to perform jobs related with field of study four times a week at a public/private hospital or at a biomedical equipment service company with the rules and regulations set by the department and to apply troubleshooting techniques which they learn in courses. They are examined by their instructor at the end of the semester.

BMET 304 Laboratory Support Equipment

The aim of this course is to teach the students operation principles, assembly, installation and maintenance of laboratory equipment**.**

BMET 306 Diagnosis and Tracking Devices

The aim of this course is to teach principles of operation of diagnosis and tracking devices used in medicine. Parameters and measurements tracked by patient monitor. Patient monitoring apparatus, technical properties and block diagram of patient monitors. Electrical safety of patient monitors. Patient monitor cable and network connections. Pulmonary system, diagnosis devices of pulmonary function. Impedance pneumography. Spirometers.

5. Registering Courses

Students must adhere to the exact registration renewal dates and deadlines as specified in the academic calendar announced by the Rector's Office which can be found at https://www.emu.edu.tr/academiccalendar

Each student in the Department is assigned an Academic Advisor who is a faculty member in the department and assists the student with matters related to scheduling, course selection, registration,

and related matters as mentioned before. The list of advisors is posted in bulletin boards throughout the department.

Although the advisor plays a key role in the student's progress through University studies, it is ultimately the student's responsibility to meet all University requirements, and it is the responsibility of the Registrar's Office to ascertain and certify that these requirements have been met.

According to EMU by-laws, 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,
- withdrawing a course.

These operations are normally initiated by the student using the student portal account and the advisor is notified to confirm via an automatic email message.

6. Adding a New Course, Dropping a Registered Course or Withdrawing a Course

From the first day of the commencement of the classes until the last day for Add/Drop period specified on the academic calendar, students are allowed to change their course schedule by adding a new course or dropping a registered course.

A student is allowed to withdraw at most two registered courses ın a semester, 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. A student who withdraws from a course will receive the letter grade 'W'. This grade is not taken into consideration during the calculation of the CGPA and the GPA, but appears on the transcript. A student cannot withdraw from

- a course that was withdrawn before,
- a course that is repeated (a different course with the same reference code),
- a course that has no credit,
- any course if he or she is in the "Part-Time" student status.

Both add/drop and withdrawal operations must be initiated by the student using the student portal. Consequently, the academic advisor of the student receives a notification and accepts or rejects the requested change.

7. Pre-requisite Courses

In the EET curriculum, there are some courses that you must pass before you take other courses. In such cases, the course that you must take before taking another course is called pre-requisite course.

1) 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.
2) Graduating students are allowed to register for courses with pre-requisites even if they score an 'F' grade from the pre-requisite course.
3) At all semesters (including the graduation semester), a pre-requisite 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.
4) The School Board has the authority to take decisions concerning the requirements for pre-requisite courses.

8. Repeating Courses

In some cases, a student may be required to take courses that he or she has taken before. The following provisions are applied in repeating a course:

1) A student who obtains a (D-), (F), (NG) or (U) grade from a course must register for the course at the next available opportunity.
2) If the course to be repeated is an elective or has been excluded from the program, the student is required to take another appropriate course specified by the Department.
3) If a student wishes to improve his/her previously obtained grades, s/he can repeat a course in which he previously passed.

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

9. Registration of Students with "On Probation" status or Students with Academic Warnings

1) Registration of Students with the First Academic Warning or Students on Probation

Students who receive the first academic warning or who are on probation are obliged to repeat failed courses before registering for the new ones. These students are allowed to register for two new courses at most, on the condition that they do not exceed normal course load. (Students who wish to register in summer school or who have the part-time status are allowed to register only for one new course). A student who receives the first academic warning is not allowed to register for a new course if the number of offered previously taken courses with (D-), (F) or (NG) grades fulfill his/her load. Previously registered courses with (W) grades are considered as new courses

2) Registration of Unsuccessful Students or Students with the Second, Third and 'Final' Warning.

These students will not be allowed to register for a new course. During registration, these students must first register in the courses from which they received the grades: F, NG or 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. Courses with (W) grades are considered as new and cannot be registered.

10. Late Registration

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

11. Examinations

For each course, a minimum of one midterm examination, a final examination, and any number of quizzes/tests are held. The detailed outlines of each course which also include information on the grading system and the relative weights of the examinations are posted at http://sct.emu.edu.tr/eet Final examinations are held at least three days after the last day of classes.

The Registrar of the University prepares and announces a schedule of examinations, for both final and midterm exams, well before the examination period designated for each term. To the greatest extent possible, the number of students with multiple examinations on a single day is reduced to the lowest figure. Individual conflicts that may arise from the schedule should be reconciled with the assistance of the course instructor. An alternative to an examination may be employed for certain courses with the approval of the Programme Coordinator.

12. End-of-Course Grades and Grade-Points

Twelve categories of scholastic achievement, ranging from "superior" to "failure" (A, A-, B+, B, B-, C+, C, C-, D+, D, D-, F), are recognized as valid end-of-course grades. These grades are indexed on a scale of "0.00-4.00" and termed Grade-Points. Five other symbols, (W, I, NG, S, U) are used.

A grade of "W" is used to indicate official withdrawal from a course not later than the eleventh week in a regular semester. A "W" grade has no effect on scholastic computations. A student's eligibility for a "W" grade is forfeited if, at the time of intended withdrawal, his/her unexcused absences exceeded one fifth of the total lecture or laboratory meetings to date. "W" (withdrawn), indicates withdrawal from a course before the end of a term.

The "I" grade is a temporary reporting symbol, indicating that the student is authorized additional time to submit or complete work. The student must have presented an academically acceptable explanation to his/her instructor stating why the work was not completed within the time limit specified by the instructor. The symbol "I" (incomplete) is employed temporarily in lieu of an academic grade until a formal grade is reported. If the "I" grade is not changed by the course instructor before the deadline announced on the academic calendar, it is converted to F.

Achievement in a non-credit-hour course is indicated by the symbols "S" (satisfactory) or "U" (unsatisfactory).

The "NG" grade is given if students do not participate in coursework. A student is considered not participating in class work if he/she has high absenteeism during lecture and/or tutorial (lab) hours or he/she habitually do not submit the classworks and/or homework assigned by his/her lecturer.

At the beginning of each semester, every lecturer will make clear the conditions that may cause a student to receive an NG grade in his/her particular course. In addition to special rules announced by the course instructor at the beginning of the term, in the IT department more than 40% absenteeism or missing all exams results in the "NG" grade.
A course is said to have been successfully completed if a student in any scholastic status, except dismiss, obtains a grade of A, A-, B+, B, B-, C+, C, C-, D+, D or S. A course in which a student receives a grade of D-, F, NG or U is not considered to have been satisfactorily completed, and the student is required to repeat such a course in the next semester that it is offered.
In the case of repeated coursework, the last grade earned is considered the official course grade.
The letter grades are indexed to Grade-Points equivalents as shown in Table 1 below.
Table 1. End-of-Course Grades and Grade-Points

A	4.0	Superior Pass in a credit-course
A-	3.7	Very Good Pass in a credit-course
B+	3.3	Good Pass in a credit-course
B	3.0	Good Pass in a credit-course
B-	2.7	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)
W	*	Withdrawal from a course
I	*	Incomplete (work with excuse, grade to be given later)

13. The Grade-Point Average (GPA) and Cumulative Grade-Point Average (CGPA)

A student's academic achievement for each term is expressed numerically by an index referred to as the *Grade Point Average* (GPA). The GPA is obtained by:

1) calculating credit earned for each course; A student earns a credit based on the level of his/her achievement in a course. The credit earned is the product obtained by multiplication of the "Credit-Hour" and the "Grade-Point" obtained from a course.

2) adding these results for all courses in the term to obtain the total credits;
3) dividing the total credits by the total credit-hours attempted.

The GPA so obtained can range from 0.00 to a maximum of 4.00. A student's GPA is calculated and reported to two decimal places.
A student's overall academic achievement is expressed numerically by an index referred to as the *Cumulative Grade-Point Average* (CGPA). The CGPA is obtained by:

1) adding credits earned in each term completed;
2) adding credit-hours attempted in each term completed;
3) dividing the total credits earned by the total credit-hours attempted.

When a course is repeated, the last credit earned and, if changed, the new credit-hour, are substituted in place of the previous values.

Example:

Ref. Code	Course Code	Credit Hour	Course Grade	Grade Point	Credit Eearned
3D711	ENGL161	3	A-	3.7	11.1
3D712	MATE117	3	B	3.0	9.0
3D713	BMET111(*)	3	D-	0.7	2.1
3D714	EETE143(*)	3	F	0.0	0.0
3D715	EETE101	3	C+	2.3	6.9
3D716	EETE113	+ 3	D	1.0	3.0
		18			32.1

Note that the courses marked with (*) must be repeated in the next semester since it has not been satisfactorily completed.

The Grade point average is calculated as follows:
GPA = 32.1/18 = 1.78

This GPA is classified as Unsatisfactory as it is below 2.00/4.00. Since it is the first semester of the students, GPA and CGPA are the same. Unsatisfactory GPAs may require students to repeat courses according to the rules specified below.
Assume the student gets the following grades at the end of the second semester:

Ref. Kod	Ders Kodu	Kredi Saati	Ders Notu	Not	Kazanılan Kredi
3D721	ENGL162	3	B	3.0	9.0
3D722	EETE132	3	C	2.0	6.0
3D723	EETE134	3	D	1.0	3.0
3D724	EETE152	3	C+	2.3	6.9
3D725	BMET112	3	B-	2.7	8.1
3D726	BMET168	+ 3	D+	1.3	3.9
		18			36.9

At the end of the second semester GPA calculation is as the previous case. The summation of all credits earned is divided by the summation of all credit hours. Therefore for the second semester the GPA calculation is as follows:
GPA = 36.9/18 = 2.05

The CGPA calculation considers all courses taken by the student, but for the repeat courses, only the last grade should be used. The formula for CGPA calculation is as follows:
CGPA = Total Credits Earned / Total Credit-hours Attempted = 69/36 = 1.92

where the Total Credits Earned is calculated as:

Total Credit-hours Attempted = Total Credit-hours Attempted in the First and Second Semester - Total Credit-hours of Repeated Courses in the Last Semester = 36

and the Total Credit-hours Attempted are determined as:

Total Credits Earned = Total Credits Earned in the First and Second Semesters - Previous Total Credits Earned from Repeated Courses = 69

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14. Correction of Grades

A student who feels strongly that he/she has received an in-term grade that is improper may file a formal appeal if the problem cannot be resolved by the course instructor.
The student must discuss the matter with the instructor of the course within one week of the announcement of grades. If, following discussion with the instructor, the student still feels that the grade is improper or unfair, he/she may present the case to the Programme Coordinator by writing a petition. The appeal is considered by a committee appointed by the Programme Coordinator, and a final decision is given within one week after the receipt of the appeal.

15. Scholastic Status

Success rate in undergraduate for students who register in 2007-08 academic year and after is as follows:

1) Every student's success status is determined at the end of each semester, by calculating their GPA and CGPA. GPA and CGPA is calculated each semester according to the University rules, where each letter grade has a coefficient value, with two (2) decimal places (e.g. 2.33).
2) The student is counted successful, if his GPA and CPGA is 2.00 or above.
3) "Honor" degree is granted to a student, with a normal course load, whose GPA is in between 3.00-3.49 while "High Honors" degree is granted to a student, with a normal course load, whose GPA is 3.50 and above.
4) "Active Academic Term" refers to each fall and spring semester program which the student is registered in, except for the period the student is registered in the English Preparatory School.

End of Active Academic Term (EAT)	Successful Student	Student on Probation	Unsuccesfull Student
2. EAT	CGPA ≥ 1.50	1.00≤CGPA<1.50	CGPA<1.00
3. EAT	CGPA ≥ 1.80	1.50≤CGPA<1.80	CGPA<1.50
4. EAT	CGPA ≥ 2.00	1.80≤CGPA<2.00	CGPA<1.80

5) Students, registered to an associate program, whose CGPA lies between the limits in the above table, will be respected as “Successful”, “On Probation” or “Unsuccessful” student.

a. A student “on probation” will receive a special attention and be treated as follows: The semester following the “on probation” status, a student may take at the most two new courses. The student, therefore will also be asked to repeat the courses which he/she had already taken in the previous semesters and received the grades F, NG, D- and/or if necessary, the ones with the grades D, D+ or C-.

b. A student whose status is “Unsuccessful” will receive a special attention and be treated as follows: The semester following the “unsuccessful” status, the student will be asked to repeat courses already taken in the previous semesters, only. These students are not allowed to register for any new courses. The courses with F, NG, and D- grades are to be repeated first. The student may also be asked to repeat courses which he/she already completed with D, D+, and C- grades.

6) If a student is transferring from another University to EMU or from another program within EMU, the transferring term will count as the student’s Academic term. However, they will be treated as a satisfactory student at the end of the first Academic term in the new program.

7) Each term the student is away from the University counts as an academic term, according to the student exchange program.

8) The student’s upcoming semester courses are revised by the Course Registration Regulations, depending on the student’s current success rate.

9) According to the Law and Regulations, each student studying in a 2-year program must complete their education within 4 years. Leave of absence period does not count towards the education duration. In case of a student exceeding this period, the University will be able to dismiss the student. However, this period can be extended if the student is in the graduating term and has fulfilled some vital conditions. The extended period and applicable laws will be revised and organized for the student according to the “Course Registration Regulations”.

16. Graduation

A student is entitled to graduate if he/she:
1) Satisfactorily completes all required courses, laboratory studies, reports and summer training; and
2) Attains a sum of credit-hours amounting to at least the minimum required for graduation. If at the time of his/her graduation a student has achieved a CGPA of 3.00 or greater, this will be indicated on his/her graduation Diploma and official transcript as follows: students with a CGPA in the range 3.00-3.49 "Honors"; students with a CGPA in the range 3.50-4.00 "High Honors."

Graduation is conferred by the University Senate upon the request of Faculties and Schools. The Diplomas are prepared by the Office of the Registrar, and describe the name of the program, the date of graduation, and the degree obtained.

17. Additional regulations

Attendance Requirements

The University believes that the benefits of academic studies come not only from independent study and the preparation of materials for formal grading, but also from participation in class and laboratory activities. Regular attendance of EMU students is therefore required in all courses for which they are registered. University regulations do not permit unexcused absence or tardiness.
For flagrant violation of the spirit of regular class attendance, an EMU faculty member may report an "NG" grade whenever unexcused absences are excessive.
You should be aware that your course grades can be adversely affected through absence, whether excused or unexcused.

Leave Of Absence

A student, who has a compelling excuse for having a break from University studies for a period of time, may appeal for leave of absence. This period may not exceed four semesters during a course of study for a degree. Leave of absence applications are done online through student portal within first five weeks after the commencement of classes. Medical cases may be considered separately.

Withdrawal from the University

A student who finds it necessary to withdraw from the University must initiate withdrawal procedures with the Office of the Registrar. The official withdrawal procedure requires the student to obtain the necessary clearances from the Registrar's Office and department.

Regulation for Examinations and Evaluation

I. General Provisions

This regulation aims to specify the rules, principles and evaluation methods for conducting and evaluating mid-term and final examinations.

II. Main Provisions

Term Grade

The term grade refers to the level of achievement a student has reached in a given course. In calculating a term grade, mid-term and final examinations and laboratory/workshop reports and/or examinations, quiz, project and/or homework grades (if any) are all taken into account. The following rules are applied during the calculation of the term grade.

(1) At the beginning of the term, the course instructor informs the relevant department chair and the students in writing about the number of examinations to be administered and their weights, as

well as the weights of quizzes and lab/workshop reports (if applicable). Faculty of Law can apply a different method upon the decision of the Faculty Board.

(2) In cases where the course is taught by multiple instructors, a course coordinator is appointed by the relevant department chair. Taking the recommendations of other instructors teaching the same course into consideration, the Course Coordinator will determine the weight of each examination to be given during the semester.

(3) Weight of the final examination cannot exceed 50%. A different application may be implemented at Faculty of Law and School of Justice upon the decision of the Faculty Board.

Mid-term Examinations

In every academic semester, a minimum of 1 and a maximum of 3 mid-terms as announced at the beginning of the semester are given to students in each course. No mid-term examinations can be administered during the final week of the semester

Final Examinations

Principles to be applied in final examinations are as follows:
(1) Final examinations are administered on dates specified in the Academic Calendar.
(2) No level of performance in the mid-term examination may be set as a precondition for taking the final examination.
(3) Final examination papers must be evaluated within 5 days following the exam date and submitted to the relevant department chair for their publication.
(4) Letter grades are announced by the Registrar's Office at a date determined by the Rector's Office.

Other Criteria to Be Considered for Evaluation

(1) Short quizzes can be administered within the term without prior notice. Quizzes are prepared and evaluated by the academic staff delivering the course.
(2) In applied courses, evaluation can be based on projects, workshops, laboratory reports and/or examinations. Examinations can have a written or oral format. Either the course instructor or another academic member/members of the staff assigned by the Course Coordinator is/are entitled to carry out the Workshop/Lab evaluations.
(3) Assignments/homework prepared during the term can be included in the overall evaluation. Homework will be assessed by the course instructor or an academic staff member assigned by the course instructor.

Resit Examinations

(1) Re-sit examinations for all courses (excluding the architectural design studio courses, graduation project and teaching/internship practice etc.) are administered, at the end of the Fall and Spring Semesters (excluding the Summer Term) for students who have gained the right to take the final exam on dates specified on the Academic Calendar; for Fall Semester courses, before the starting date of the registration with advisors for Spring Semester courses and for Spring Semester courses, before the starting date of the registration with advisors for Summer Term courses. Students who fall into the following categories may take the resit examinations:
a) students who have gained "D-"or "F" from courses taken during the relevant semester
b) students who have received an academic warning or who are on unsatisfactory or probational status can re-sit for all courses taken during the relevant semester, except for the ones with an 'NG' grade;
(2) Resit examinations are considered to have the total weight of all in-term and end-of-semester written exams. At the end of the Resit Examination results, semester letter grade of the course for which the resit examination is being taken, the resit examination result and all other in-term assessed work are taken into consideration and the results for the re-sit exams are determined, accordingly.
(3) Letter grades obtained at the end of the re-sit exam are made available online through the portal by the deadline specified on the Academic Calendar and displayed on the student transcript under the heading of "Re-sit Examination Results".
(4) In order for a student to be eligible to take a re-sit examination, s/he is required to apply and indicate the courses for which a re-sit examination is going to be taken through the portal within three working days following the announcement of the semester grades. Those who fail to do so by the specified deadline are not allowed to take the re-sit examinations. Students who have applied for a re-sit examination may withdraw their application within three days following their application date.
(5) The maximum period of time allowed during a re-sit examination is 120 minutes. In special situations, this period may be extended with the approval of the Rector's Office.
(6) No make-up exams are administered for re-sit examinations. Those who have applied for a re-sit exam and failed to attend are assigned '0'.
(7) No fees are charged for resit examinations.
(8) No resit examinations are administered for the students registered for the English Preparatory School courses and postgraduate program courses (including courses taken in scope of the Scientific Preparation Support Program or English Support Program or courses taken as undergraduate courses).

Make up Examinations

(1) 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 petition to the course instructor or the course coordinator explaining the reason(s) for his/her request.

(2) Make-up exams for the mid-term exams may take place within the semester. Re-sit exams may also replace make-up exams.
(3) Make-up exams are completed before the commencement date of applications for the re-sit examinations of the relevant semester.
(4) If the cause of the student's absence persists during the time allocated for the make-up examination, a new make-up exam is given. However, if the make-up examination is not taken by the student ten days before the registration for the new term begins, the situation is brought to the attention of the relevant Faculty/School Academic Council and decided upon, accordingly.
(5) In situations where the re-sit examination takes the place of a make-up exam, the weight of the re-sit examination becomes equal to the examination for which a make-up exam is being given.

Graduation Make-up exam

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:

(1) Students who fail to meet the graduation requirements due to F and/or D- grades are allowed to sit the exam for up to 3 courses with previously obtained grades of F and/or D- provided that these courses were taken within the last two semesters in the Faculty of Law undergraduate program; for students in all other undergraduate programs, the maximum is 2 courses taken within the last two semesters with the grades of F and/or D-; or
(2) Students who have failed 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 3 courses with D, D+, C- grades in the Faculty of Law undergraduate program, and up to 2 courses with grades D, D+, C- in all other undergraduate programs.
(3) 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.

Appeals

(1) A student has the right to ask the relevant academic staff member to see all documents and exams involved in the determination of the semester grade no later than a week following the publication of the course grades.
(2) 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 grades. 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 finalise the student's appeal within one week. The decision of the committee is final.

(3) Any appeal concerning an end of semester 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 (2).
(4) 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.

General Rules Pertaining to the Administration of Exams

(1) Examination questions are prepared by the relevant academic staff delivering the course. In multi-group courses where there are several instructors giving the same course, the examination questions are prepared by the course coordinator with other instructors' contributions. In such multi-group courses, examination questions are identical for each group.
(2) Exam answer sheets are evaluated by the academic staff delivering the course. In multi-group courses, evaluation is carried out by the academic staff delivering the course under the organization of the course coordinator.
(3) In order to be eligible to sit for any exam, students are required to show their EMU ID documents.
(4) Exam response sheets are kept by the course instructor for one year at least. In case of an instructor leaving the University within this period, exam papers are handed over to the relevant department chair's office.
(5) Depending on the type and level of disability, students with impediments are provided with a suitable exam environment allowing extra time, breaks for rest, writing support, physical support in exams which involve application, and/or reader/writer support.