

Introduction

The program aims to provide students with the general knowledge and skills of electrical engineering, both focusing on natural science, technology and informatics as well as economy, humanity, languages and the relevant subjects. By BSc program, students can cooperate in the designs of electrical and electronic devices, installations, complex systems, and projects. While producing and operating such systems, students have the chance to monitor their calibration, quality, and testing. They can participate in their installation and operation while they are also able to do service engineering, product engineering, and management.

Being specialized within the Faculty gives students the opportunity to be prepared to do creative engineering work.

BSc Electrical Engineering Curriculum

Students who do not complete a minimum of 210 credits or do not complete one of the compulsory subjects cannot get a BSc degree.

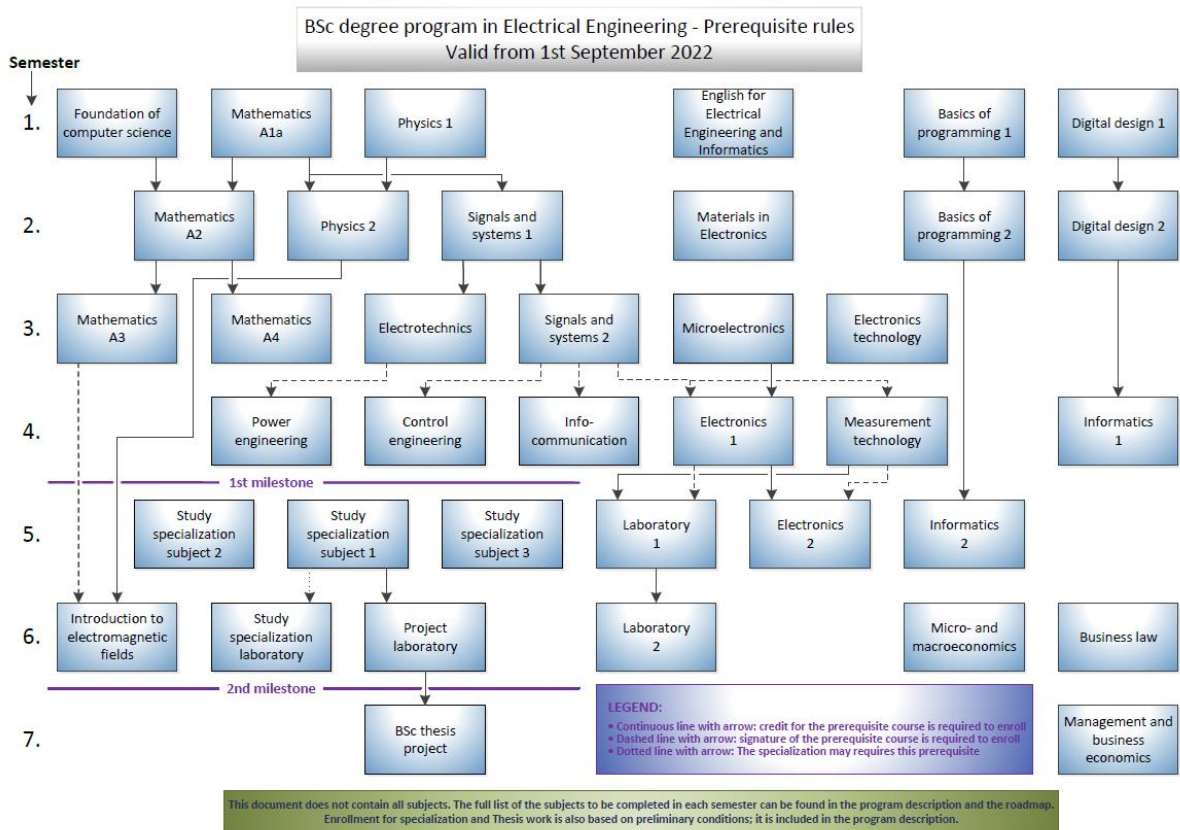
1 st semester				
Credits	Course code	Course name	Contact hours L S Lab	Requirement
6	BMETE90AX00	Mathematics A1 - Calculus	4 2	exam
4	BMETE11AX21	Physics 1	3 1	exam
5	BMEVISZAA07	Foundation of Computer Science	3 2	exam
6	BMEVIIIAA04	Digital Design 1	3 1 1	exam
7	BMEVIHIAA01	Basics of Programming 1	2 2 2	mid-semester mark
4	BMEGT60Z950	English for Electrical Engineering and Informatics	4	mid-semester mark
0	BMEVIDHAAV1	University Experience 1 (not mandatory)	2	signature
2 nd semester				
Credits	Course code	Course name	Contact hours L S Lab	Requirement
6	BMETE90AX59	Mathematics A2 for Electrical Engineers	4 2	mid-semester mark
4	BMETE11AX22	Physics 2	2 1	exam
2	BMEVIETAA01	Materials in Electronics	2	mid-semester mark
6	BMEVIHVAA00	Signals and Systems 1	3 3	exam
6	BMEVIIIAA05	Digital Design 2	2 1 1	exam
6	BMEVIAUAA01	Basics of Programming 2	2 2	mid-semester mark
0	BMEVIDHAAV2	University Experience 2 (not mandatory)	2	signature

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3 rd semester				
Credits	Course code	Course name	Contact hours L S Lab	Requirement
4	BMETE90AX09	Mathematics A3 for Electrical Engineers	2 1	exam
4	BMETE90AX58	Mathematics A4 Probability Theory	2 2	mid-semester mark
4	BMEVIETAB01	Electronics Technology	2 2	mid-semester mark
6	BMEVIHVAB02	Signals and Systems 2	3 3	exam
5	BMEVIVEAB02	Electrotechnics	3 1	exam
5	BMEVIEEAB01	Microelectronics	2 2	exam
4 th semester				
Credits	Course code	Course name	Contact hours L S Lab	Requirement
5	BMEVIIIAB09	Informatics 1	4	mid-semester mark
5	BMEVIHIAB03	Electronics 1	2 2	exam
6	BMEVIMIAB02	Measurement Technology	3 2 1	exam
6	BMEVITMAB05	Infocommunication	3 2	exam
5	BMEVIIIAB10	Control Engineering	2 1 1	exam
4	BMEVIVEAB03	Power Engineering	2 1 1	mid-semester mark
5 th semester				
Credits	Course code	Course name	Contact hours L S Lab	Requirement
5	BMEVIAUAC10	Informatics 2	3 1	mid-semester mark
5	BMEVIAUAC11	Electronics 2	4 1	exam
5	BMEVIMIAC14	Laboratory 1	4	mid-semester mark
5		Specialization Subject 1	2 2	exam
5		Specialization Subject 2	2 2	exam
5		Specialization Subject 3	2 2	exam
6 th semester				
Credits	Course code	Course name	Contact hours L S Lab	Requirement
5	BMEVIHVAC07	Introduction to Electromagnetic Fields	2 2	exam
5	BMEVIMIAC15	Laboratory 2	4	mid-semester mark
5		Specialization Laboratory	3	mid-semester mark
5	BMEVI**AL05	Project Laboratory	3	mid-semester mark
2	BMEVI*****	Free Elective 1	2	mid-semester mark
2	BMEVI*****	Free Elective 2	2	mid-semester mark
2	BMEGT55A001	Business Law	2	mid-semester mark
4	BMEGT30A001	Micro- and Macroeconomics	4	exam
7 th semester				
Credits	Course code	Course name	Contact hours L S Lab	Requirement
4	BMEGT20A001	Management and Business Economics	4	mid-semester mark
2	BMEVI*****	Free Elective 3	2	mid-semester mark
2	BMEVI*****	Free Elective 4	2	mid-semester mark
2	BMEVI*****	Free Elective 5	2	mid-semester mark
2	BMEGT****	Human & Economic Science Elective 1	2	mid-semester mark
2	BMEGT****	Human & Economic Science Elective 2	2	mid-semester mark
15	BMEVI**AT03	BSc Thesis Project	8	mid-semester mark

Preliminary Course Schedule

The following diagram shows the structure of the mandatory subjects of the program. The subjects without prerequisites are not presented.



Due to the fixed structure of the subjects of specialization, further preliminary conditions and prerequisites may be requested in the Neptun Study Administration System.

Milestones

- 1st milestone: Specialization enrollment conditions
 - at least 90 credits are completed
 - all courses of the first and second semesters are completed
 - at least 20 credits of the third semester are completed

The requirements are eased if the student has obtained the signature in both University Experience 1 (BMEVIDHAAV1) and University Experience 2 (BMEVIDHAAV2) subjects. In this case, the student can enter the specialization if he/she fully fulfills two conditions; and only one of the first and second semesters subjects is missing OR a maximum of 6 credits are missing from the third semester. No further permission can be granted, not even based on equity.
- 2nd milestone: Thesis project enrollment conditions
 - at least 174 credits are completed (up to 10 credits free electives)
 - all courses of the first four semesters are completed
 - all specialization courses are completed
 - Project Laboratory subject is completed

Human and Economic Science

The subject block of human and economic science consists of two parts:

- Obligatory subjects
 - Management and Business Economics (BMEGT20A001)
 - Micro- and Macroeconomics (BMEGT30A001)
 - Business Law (BMEGT55A001)
 - English for Electrical Engineering and Informatics (BMEGT60Z950)
- Two elective human and economic science elective subjects (4 credits altogether). The list of human and economic science elective subjects is available on the Faculty's website.

Mandatory English Language Subjects

The curriculum includes a mandatory language subject in the first semester in order to reinforce effective learning (BMEGT60Z950 English for Electrical Engineering and Informatics).

Students are assigned and registered for courses centrally by the language institute in the first semester. So it is unnecessary to register in Neptun while deregistration of such courses is not allowed. Please note that this subject can not be substituted based on any language certificates.

Specialization

Specializations start every fall semester, and the selection of specialization is always at the end of the 4th semester. At the end of the spring semester (after the end of the exam period) the students who have met all criteria for the enrollment to specializations forward their preferred order of specialization to the Faculty. The decision on the type of specialization and the placement of students depends on the number and the results of applying students and the Faculty teaching capacity.

Specialization subjects

	Embedded and Control Systems	Intelligent Communication	Sustainable Electric Energetics
Specialization Subject 1	Microcontroller Based Systems BMEVIAUAC12	High Frequency System Techniques BMEVIHVAC08	Electrical Equipment and Insulations BMEVIVEAC11
Specialization Subject 2	Robotic Systems BMEVIIIAC06	Networking Technologies and Applications BMEVITMAC09	Innovative Technologies in Electrotechnics BMEVIVEAC17
Specialization Subject 3	Embedded Software Development BMEVIMIAC17	Mobile Communication Networks BMEVIHIAC10	Electrical Machines and Drives BMEVIVEAC10
Specialization Laboratory	Study Specialization Laboratory	High Frequency Systems Laboratory BMEVIHVAC09	Innovative Electrotechnics Laboratory BMEVIVEAC14
Project Laboratory	BMEVIAUAL05 BMEVIIIAL05 BMEVIMIAL05	BMEVIHVAL05 BMEVIHIAL05 BMEVITMAL05	BMEVIVEAL05
BSc Thesis Project	BMEVIAUAT03 BMEVIIAT03 BMEVIMIAT03	BMEVIHVAT03 BMEVIHIAT03 BMEVITMAT03	BMEVIVEAT03



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Project Subjects

Within the frames of specialization, students take so-called project subjects from the 6th semester. Project laboratory is the prerequisite of the BSc Thesis project. The project subjects can be both taken in the spring and fall semesters.

Students solve more challenging technical problems (projects) in groups or individually during project subjects. A topic may cover different fields of science (in which the subtasks are specifically designed for each subject). Students can only take project subjects after being enrolled in one of the specializations.

Free Elective Subjects

Students take free elective subjects for a minimum of 10 credits to widen their knowledge from the list of available courses announced by the Faculty. The ten credit criteria can either be achieved by any 2-credit or 4-credit subject combinations. The list of free elective courses may vary from year to year. The updated lists can be found on the Faculty's website.

Summer Internship

Six weeks, a full-time summer internship is mandatory. The suggested period is the summer between the 6th and 7th semesters. The subject has to register in the next semester. Details are available on the Faculty's webpage.

The transition of BSc curriculum from September 2022

The curriculum of BSc program of electrical engineering has been slightly modified from September 2022, which means that the number of credits and the codes of certain subjects had to be changed.

Students having their signatures from previous semesters should register for the exam course under the previous subject code. Students who have not obtained a signature must take the subjects with the codes according to the new curriculum. The correspondence between the subjects of the old and new curriculum can be found on the Faculty's website.

Due to the modifications to the number of credits mentioned above, students may have fewer or more credits in certain subjects based on the previous curriculum. In this case, the amount of credits should be added up, and the difference should be adjusted by selecting Free Elective courses. In other words, students having less credits should register for more Free Elective courses; students having more credits should select courses from the list of Free Electives that are worthless credits. The goal is to fulfill the minimum 210-credit criteria of the curriculum by the end of the program. Students who do not complete a minimum of 210 credits or do not complete one of the compulsory subjects cannot get a BSc degree.