



Faculty introduction to
MSc students
Faculty of Electrical Engineering
and Informatics
Budapest University of
Technology and Economics



Dr. Eszter Udvary
associate professor
BSc and MSc English program director



Highlights

1. Introduction to the faculty
2. Degree programs
3. Q&A





Faculties of the BME



Faculty of Civil Engineering (1782)



Faculty of Mechanical Engineering (1871)



Faculty of Architecture (1873)



Faculty of Chemical Engineering (1873)



Faculty of Electrical Engineering and Informatics (1949)



Faculty of Transportation Engineering (1951)



Faculty of Natural Sciences (1987)



Faculty of Economic and Social Sciences (1998)

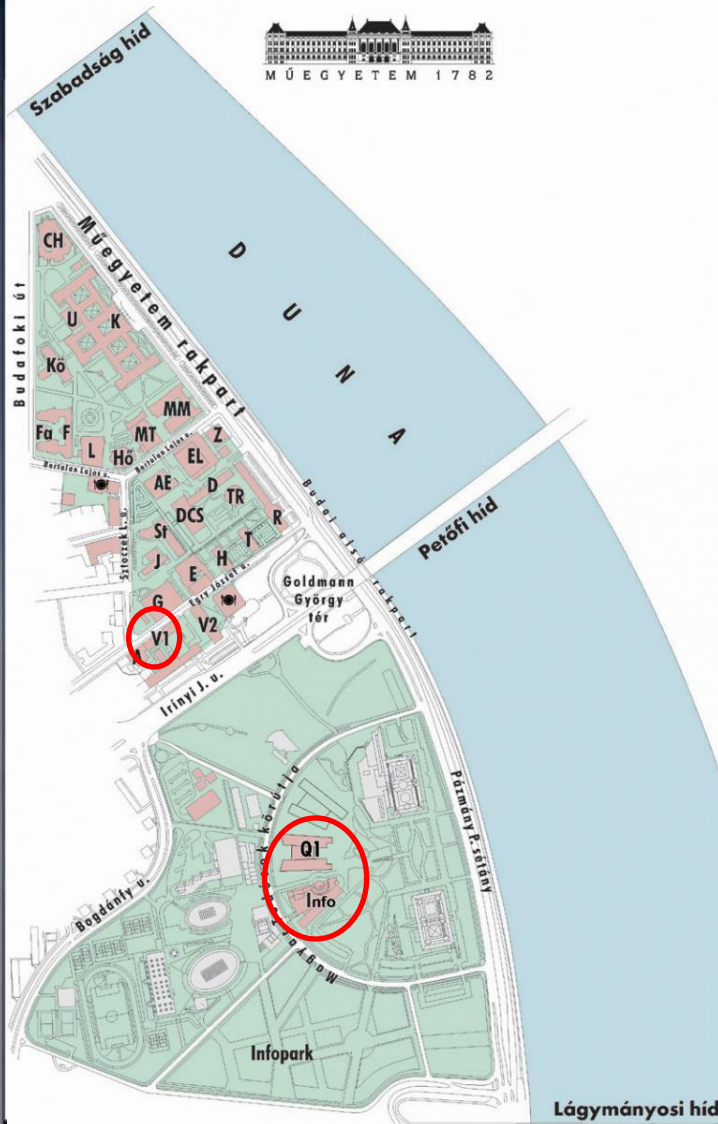


Departments at the faculty

- Department of Automation and Applied Informatics
- Department of Broadband Infocommunications and Electromagnetic Theory
- Department of Computer Science and Information Theory
- Department of Control Engineering and Information Technology
- Department of Electric Power Engineering
- Department of Electron Devices
- Department of Electronics Technology
- Department of Measurement and Information Systems
- Department of Networked Systems and Services
- Department of Telecommunications and Media Informatics

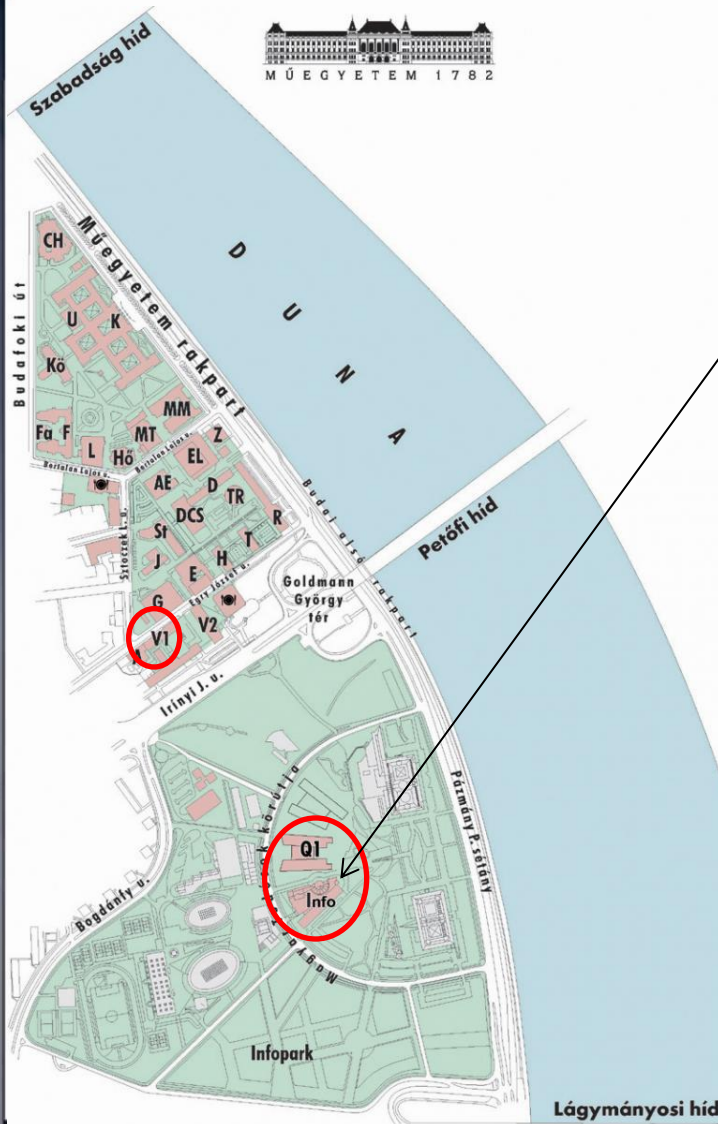


Faculty buildings



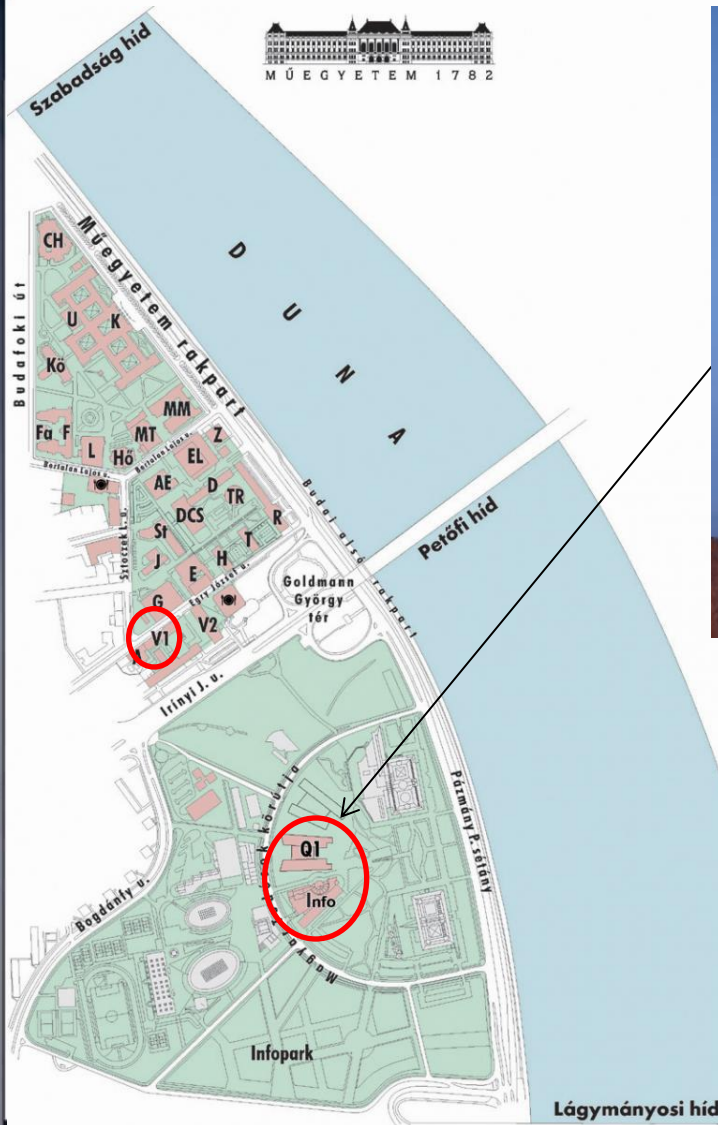


Faculty buildings: I



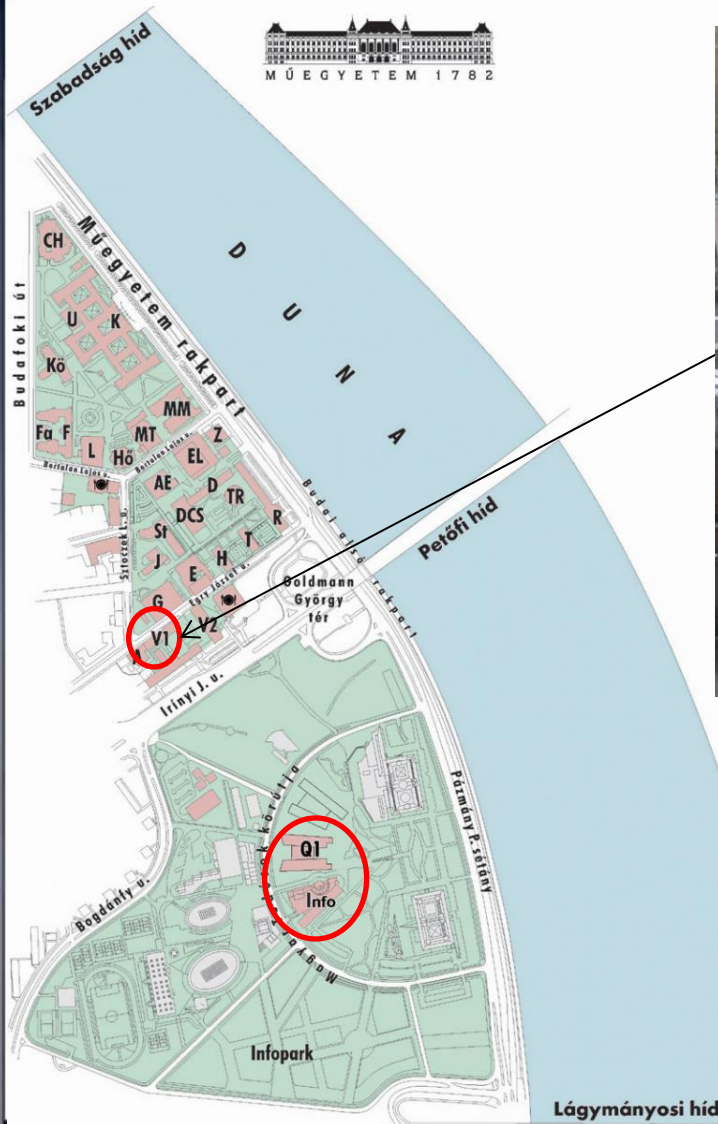


Faculty buildings: Q





Faculty buildings: V1



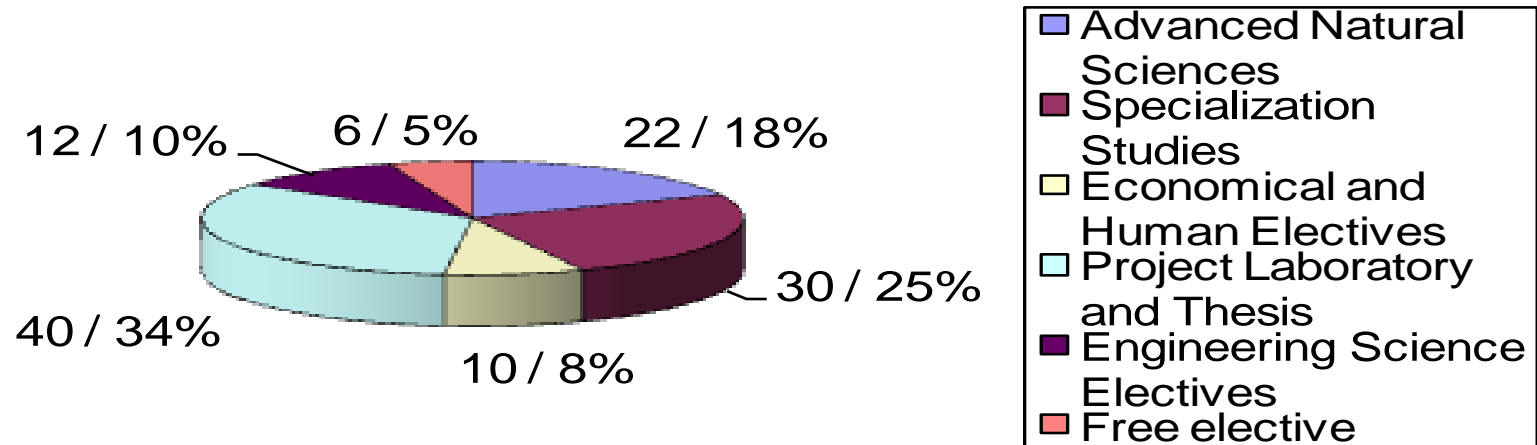


Degree programs in English

- Electrical Engineering (BSc) – 7 semesters
- Computer Engineering (BSc) – 7 semesters
- Electrical Engineering (MSc) – 4 semesters
- Computer Engineering (MSc) – 4 semesters
- Electrical Engineering (PhD) – 8 semesters
- Computer Engineering (PhD) – 8 semesters



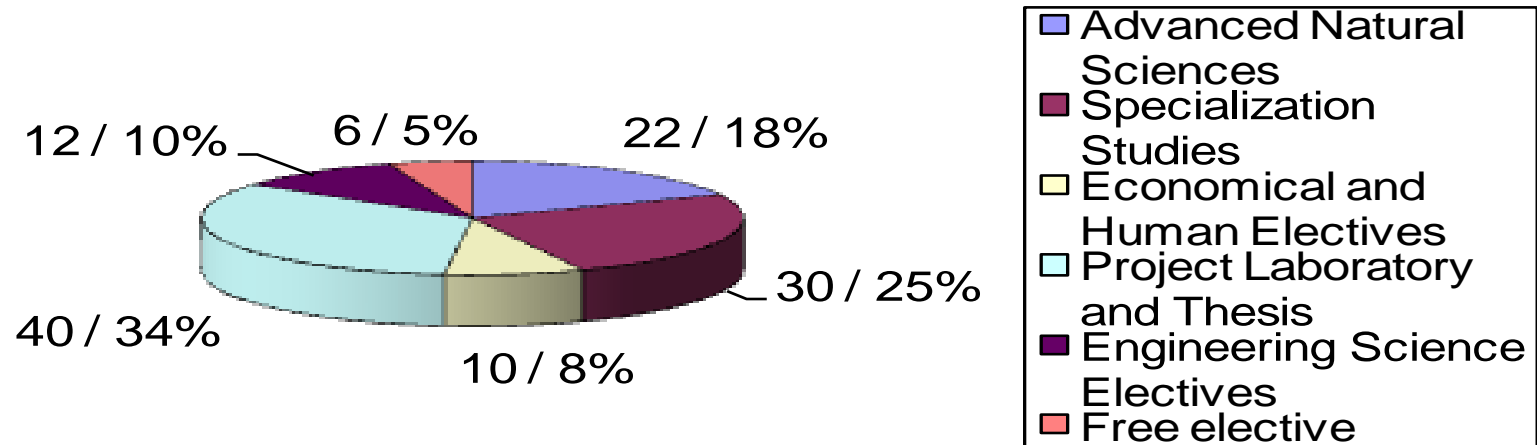
Electrical Engineering (MSc)



- 4 semesters, 120 credits (ECTS)
- Main Specializations: Electric Power Systems, Embedded Systems, Multimedia Systems and Services
- Secondary Specializations: Optical Communication, Smart City, Smart Systems Integration



Computer Engineering (MSc)



- 4 semesters, 120 credits (ECTS)
- Main Specializations: Applied Informatics, Internet Architectures and Services
- Secondary Specializations: Smart City, Cloud And Parallel Systems



European Credit Transfer and Accumulation System (ECTS)

- It helps students to move between countries and to have their academic qualifications and study periods abroad recognised
- It enhances the flexibility of study programmes for students
- ECTS credits represent learning based on defined learning outcomes and their associated workload.
- 1 credit \approx 30 workhours





Workload

- 1 semester = 20 weeks
 - 1 week registration period
 - 14 weeks study period
 - 1 week recap period
 - 4 weeks exam period
- 900 workhours / semester
 - 30 credits / semester
 - 30 workhours / credits
- 45 workhours / week (5 days)
=> **9 hours / day => full time study**
- 25-30 contact hours / week



Subjects

Subject Type	Mid-term Assessments	End of the study period	Exam period
Exam	Mid-semester test Mid-semester exam Homework	Signature	Exam
Mid-semester mark	Mid-semester test Mid-semester exam Homework Laboratory course	Grade (based on the mid-semester results)	-

- Subjects – with few exceptions – are only announced once a year, either in the spring or in the fall semester!
- Please handle the subject based on neptun ID (NOT title)



Courses

type	Attendance requirement	note
Theory	Max. 70%	If it is in the subject description
Practice	70%	
Laboratory	100%	Attendance is compulsory
exam	-	a course without contact hours - comprehensive exam - If you have signature, but you did not get grade => you have to repeat the examination in the next exam period

BME expects students to attend the lectures



Contacts

- For issues related to the administration of your studies you always have to turn Ms. Margit Nagy (location: building R, ground floor; phone: +36-1- 463-1111 / ext. 4609; e-mail: nagy.margit@kth.bme.hu;))
- For issues related to your studies, scholarship, and personal life, you should turn to the international coordinator in the first place (e-mail: english_program_info@vik-dh.bme.hu)
- The program director of BSc and MSc studies is Ms. Eszter Udvary (e-mail: udvary@hvt.bme.hu)



Basic rule of administration

It is strictly forbidden to bypass the chain of hierarchy detailed above and to directly communicate to the rector/dean or any other university personnel without notifying the persons listed above. The violation of this rule will entail disciplinary measures !!!

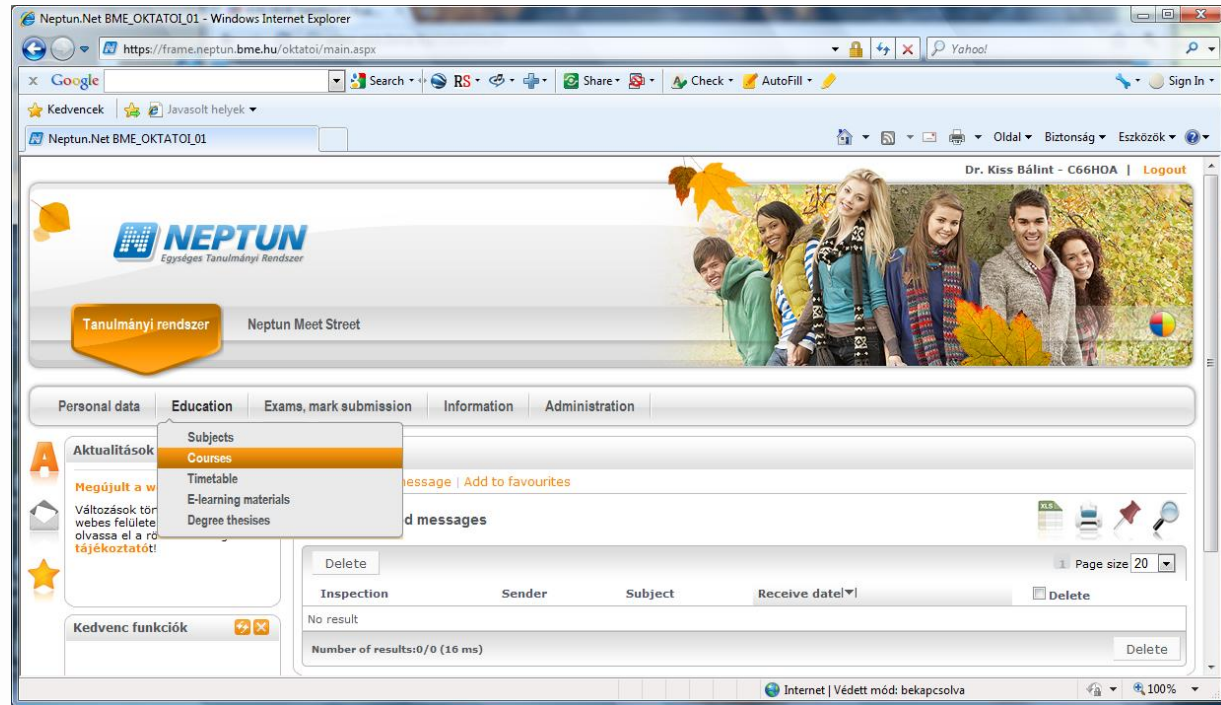


When you contact anyone...

- Please explain
 - Your name and your Neptun ID
 - Your program (BSc/MSc/PhD, Electrical Engineering/Computer Engineering)
 - Your semester
 - Details of your problem
 - Who, what subject, when, why, what did happen...
 - Print screen (if you have problem with Neptun or other electronic system)



On-line study system in English




- you must use the electronic study system NEPTUN to handle all of your administration
(<https://frame.neptun.bme.hu/hallgatoi/login.aspx>)
- All information can be found at the website vik.bme.hu/en




Webpage – vik.bme.hu/en



← → ↻ ⓘ Nem biztonságos | vik.bme.hu/en/message/

SITEMAP | ABOUT | **HU** | EN

 BUDAPEST UNIVERSITY OF TECHNOLOGY AND ECONOMICS
Faculty of Electrical Engineering and Informatics

„Energy of Networks” 

DEAN'S MESSAGE
DEPARTMENTS
RESEARCH
SCIENTOMETRIC DATA
EDUCATION
FOR CURRENT STUDENTS
CONTACT

edu ID Belépés  

DEAN'S MESSAGE

The Faculty of Electrical Engineering and Informatics (VIK) of Budapest University of Technology and Economics (BME) carries on the traditions of the above 230 year old University. The proof thereof is the recognition of our degrees all around the world as well as the involvement and appreciation of our professors and researchers in the international scientific scene and organisations.

Almost all multinational electronics and IT corporations well-known in Asia have established R&D laboratories and centres attached to various departments of the faculty – *Ericsson, Morgan Stanley, Nokia, Siemens, Samsung, Huawei, HP, IBM*, just to name a few – where students can get hands-on information on the expectations of the partner companies.


The 2001 January issue of Nature published an article with the title “*The 20th century was created in Budapest*”.

It shows that Budapest irrevocably became part of history that determined the advancement of natural sciences in the last century. Many of the illustrious scientists either studied or taught at the University.

This constitutes such a responsibility for current education that – *inter alia* – resulted in a prominent place in the Webometrics ranking of universities.


Ancient Romans had a pertinent term “*genius loci*”, meaning the spirit of the place.


Join us to create the 21st century here, in the middle of Europe, Hungary, Budapest, a liveable and safe city with a colourful multicultural spirit, spicy dishes and Asian roots still retained in music providing an academic student experience and community that endure and are remembered no matter the graduates of the University pursue their



SEARCH

SEARCH







For Current Students



BUDAPEST UNIVERSITY OF TECHNOLOGY AND ECONOMICS
Faculty of Electrical Engineering and Informatics

„Energy of Networks”



DEAN'S MESSAGE

DEPARTMENTS

RESEARCH

SCIENTOMETRIC DATA

EDUCATION

FOR CURRENT STUDENTS

CONTACT

edu Belépés



GENERAL INFORMATION

Current academic calendar

Weekly schedule of classes

Subject descriptions

Free Elective Courses

Human & economic science elective

Mid-term exams, timetable

PROJECT SUBJECTS

Project laboratory and thesis topics • Project laboratory requirements

Thesis portal

BSc Thesis regulations • BSc final comprehensive exam

MSC thesis regulations

PROGRAM DESCRIPTIONS

BSc Electrical engineering

- Program description, simplified roadmap, prerequisites

BSc Computer Engineering

- Program description, simplified roadmap, prerequisites



SEARCH

SEARCH



2020.09.10. BME Faculty of Electrical Engineering and Informatics

BME Faculty of Electrical Engineering and Informatics

- Program description
- Start in the spring semester (degree program roadmap - starts: spring)
- Start in the fall semester (degree program roadmap - starts: fall)

Master of Science Degree Program
Electrical Engineering Curriculum

Preliminary Course Schedule

According to Faculty regulations:

- The subject datasheet of some specialization subjects may include preliminary subject prerequisites. (Especially in the case of laboratories that are followed by and based on the knowledge of specialization subjects.)
- Project Laboratory 1., Project Laboratory 2., Diploma Thesis Design 1., Diploma Thesis Design 2.
 - Only MSc students of the given program can be admitted
 - The subjects can only be taken one after the other having completed the credits of the previous subject
- The prerequisite of the admission of Diploma Thesis Design 2
 - Completing 84 credits according to the study plan
 - Completing the following subjects
 - 2 Advanced mathematic subjects
(according to the main specialization of the student)
 - One of the Common Subjects
(Communication theory BMEVIHVMA07 or Measurement theory BMEVIMIMA17 or Alternating current systems BMVIVEMA13)
 - Natural Science subject
(Electromagnetic Fields BMEVIHVMA08 or Photonics Devices BMEVIETMA06 or Electrical Insulations and Discharges BMEVIVEMA14)
 - Diploma Thesis Design 1. subject (BMEVI**MT02)
- Further prerequisites may be included in the "Regulations of BME VIK MSc Project Work, final examination and certificate".

Specialization, changing specialization

Students are requested to hand in their application for specialization (the order of their main and secondary specialization) before admittance, during their entrance exam.

Students may submit a request in Neptun Study Administration System in order to change their specialization within the first semester of specialization. In case the request is accepted the student is transferred to the other specialization in the next semester (provided that the specialization starts in the given semester).

Mandatory human and economic science elective subjects

M.SC. PROGRAMS (CURRENT)

ELECTRICAL ENGINEERING

- Program description
- Start in the spring semester (degree program roadmap - starts: spring)
- Start in the fall semester (degree program roadmap - starts: fall)

Budapest University of Technology and Economics Faculty of Electrical Engineering and Informatics						MSc degree program in Electrical Engineering			4 semesters, 120 credits, starts: Fall, valid from 2016	
<div>0th semester 28 credits 28 h/week</div> <div>Advanced mathematics 2/1/0/m/3 BMEVSTM03</div> <div>Natural Science 4/0/0/m/4 BMEVSTM04 or BMEVSTM05</div> <div>Electromagnetic Fields 3/1/0/e/4 BMEVSTM06</div> <div>Engineering management 4/0/0/e/4 BMEVSTM08</div> <div>Mandatory human & economic science elective 2/0/0/m/2 BMEVSTM09</div> <div>2x</div> <div>Project laboratory 1 0/0/5/m/5 BMEVSTM10</div> <div>Free elective 2/0/0/m/2 2x</div> <div>Common subjects Communication theory 3/0/0/m/4 BMEVSTM17</div>										
<div>1st semester 30 credits 25 h/week</div> <div>Advanced mathematics 2/1/0/m/3</div> <div>Common subject 3/0/0/m/4</div> <div>Main specialization subject 2/1/0/e/4 3x</div> <div>Secondary specialization subject 2/1/0/e/4</div> <div>Free elective 2/0/0/m/2</div> <div>Project laboratory 2 0/0/5/m/5 BMEVSTM10</div> <div>Electromagnetic Fields subject can be substituted by Physics 3 (BMEVSTM13) subject available in the spring semester</div>										
<div>2nd semester 32 credits 22 h/week</div> <div>2x</div> <div>Main specialization subject 2/1/0/e/4</div> <div>Main specialization laboratory 0/0/3/m/4</div> <div>Secondary specialization subject 2/1/0/e/4 2x</div> <div>Diploma Thesis Design 1 0/5/0/m/30 BMEVSTM10</div> <div>Mandatory human & economic science elective 2/0/0/m/2 BMEVSTM09</div> <div>DISCLAIMER: this roadmap is for information purposes only, without contractual value. Content is subject to change without notice. MINIMAL NUMBER OF APPLICANTS REQUIRED</div>										
<div>3rd semester 30 credits 18 h/week</div> <div>Common subject 3/0/0/m/4</div> <div>Main specialization laboratory 0/0/3/m/4</div> <div>Secondary specialization lab. 0/0/2/m/2</div> <div>Diploma Thesis Design 2 0/10/0/m/20 BMEVSTM10</div> <div>The prerequisite of the admission of Diploma Thesis Design 2<ul style="list-style-type: none">Completing 84 credits according to the study planCompleting the credits of the following subjects<ul style="list-style-type: none">Two Advanced mathematics subjectsOne of the Common subjectsNatural Science subjectDiploma Thesis Design 1, subject</div> <div>Project lab. and MSc thesis topics must be related to the main or secondary specialization. One subject in the common subjects block and two subjects from the advanced mathematics block are determined by the main specialization. Subjects from remaining specialization blocks can be selected as free electives.</div>										
<div>Main specialization</div> <div>ELECTRIC POWER SYSTEMS AND SERVICES Power system operation and control 2/1/0/e/4 BMEVSTM01</div> <div>Electrical systems of sustainable energetic 2/1/0/e/4 BMEVSTM02</div> <div>Power system transients 2/1/0/e/4 BMEVSTM03</div> <div>Protection systems and measurement tech. 2/1/0/e/4 BMEVSTM04</div> <div>Electric energy market 2/1/0/e/4 BMEVSTM05</div> <div>Electric Power Systems laboratory 1 0/0/3/m/4 BMEVSTM06</div> <div>Electric Power Systems laboratory 2 0/0/3/m/4 BMEVSTM07</div> <div>Advanced mathematics Linear algebra 2/1/0/m/3 BMEVSTM14</div> <div>Stochastics 2/1/0/m/3 BMEVSTM15</div> <div>Combinatorial optimization 2/1/0/m/3 BMEVSTM16</div>										
<div>Advanced mathematics</div> <div>Mobile and wireless networks 2/1/0/e/4 BMEVSTM08</div> <div>Broadband wireless t-comm. & broadcasting systems 2/1/0/e/4 BMEVSTM09</div> <div>Foundations of multimedia technologies 2/1/0/e/4 BMEVSTM10</div> <div>Networked multimedia systems & services 2/1/0/e/4 BMEVSTM11</div> <div>Media informatics systems 2/1/0/e/4 BMEVSTM12</div> <div>Lab. on multimedia systems & services 1 0/0/3/m/4 BMEVSTM13</div> <div>Lab. on multimedia systems & services 2 0/0/3/m/4 BMEVSTM14</div>										
<div>EMBEDDED SYSTEMS</div> <div>Artificial Intelligence based Control 2/1/0/e/4 BMEVSTM16</div> <div>SW technology for embedded systems 2/1/0/e/4 BMEVSTM17</div> <div>Computer vision systems 2/1/0/e/4 BMEVSTM18</div> <div>Development of SW applications 2/1/0/e/4 BMEVSTM19</div> <div>Design & integration of embedded systems 2/1/0/e/4 BMEVSTM20</div> <div>Control Engineering and Image Processing Laboratory 0/0/3/m/4 BMEVSTM21</div> <div>Applied Computer Systems Laboratory 0/0/3/m/4 BMEVSTM22</div>										
<div>Secondary specialization</div> <div>SMART CITY Sensor networks and applications 2/1/0/e/4 BMEVSTM23</div> <div>Intelligent traffic systems 2/1/0/e/4 BMEVSTM24</div> <div>Human-machine interface 2/1/0/e/4 BMEVSTM25</div> <div>Smart city laboratory 0/0/2/m/2 BMEVSTM26</div> <div>SMART SYSTEMS INTEGRATION Circuit environment 2/1/0/e/4 BMEVSTM27</div> <div>System level design 2/1/0/e/4 BMEVSTM28</div> <div>Fundamentals of smart systems 2/1/0/e/4 BMEVSTM29</div> <div>Smart systems design laboratory 0/0/2/m/2 BMEVSTM30</div> <div>OPTICAL COMMUNICATION Optical Network Elements 2/1/0/e/4 BMEVSTM31</div> <div>Optical Systems and Applications 2/1/0/e/4 BMEVSTM32</div> <div>Optical Networking Architectures 2/1/0/e/4 BMEVSTM33</div> <div>Optical Networks Laboratory 0/0/2/m/2 BMEVSTM34</div>										
<div>Project Laboratory 1, Project Laboratory 2, Diploma Thesis Design 1, Diploma Thesis Design 2, can only be taken one after the other having completed the credits of the previous subject.</div> <div>The database of some specialization subjects may include prerequisites. Especially in the case of laboratories that are followed by and based on the knowledge of specialization subjects.</div> <div>LEGEND Subject title 3/1/1/m/5 BMEVSTM35 BMEVSTM36 BMEVSTM37 BMEVSTM38 BMEVSTM39 BMEVSTM40 BMEVSTM41 BMEVSTM42 BMEVSTM43 BMEVSTM44 BMEVSTM45 BMEVSTM46 BMEVSTM47 BMEVSTM48 BMEVSTM49 BMEVSTM50 BMEVSTM51 BMEVSTM52 BMEVSTM53 BMEVSTM54 BMEVSTM55 BMEVSTM56 BMEVSTM57 BMEVSTM58 BMEVSTM59 BMEVSTM60 BMEVSTM61 BMEVSTM62 BMEVSTM63 BMEVSTM64 BMEVSTM65 BMEVSTM66 BMEVSTM67 BMEVSTM68 BMEVSTM69 BMEVSTM70 BMEVSTM71 BMEVSTM72 BMEVSTM73 BMEVSTM74 BMEVSTM75 BMEVSTM76 BMEVSTM77 BMEVSTM78 BMEVSTM79 BMEVSTM80 BMEVSTM81 BMEVSTM82 BMEVSTM83 BMEVSTM84 BMEVSTM85 BMEVSTM86 BMEVSTM87 BMEVSTM88 BMEVSTM89 BMEVSTM90 BMEVSTM91 BMEVSTM92 BMEVSTM93 BMEVSTM94 BMEVSTM95 BMEVSTM96 BMEVSTM97 BMEVSTM98 BMEVSTM99 BMEVSTM100 BMEVSTM101 BMEVSTM102 BMEVSTM103 BMEVSTM104 BMEVSTM105 BMEVSTM106 BMEVSTM107 BMEVSTM108 BMEVSTM109 BMEVSTM110 BMEVSTM111 BMEVSTM112 BMEVSTM113 BMEVSTM114 BMEVSTM115 BMEVSTM116 BMEVSTM117 BMEVSTM118 BMEVSTM119 BMEVSTM120</div> <div>ECTS credit 1 credit represents 30 working hours</div> <div>Subject code as in the Budapest University of Technology and Economics</div> <div>Number of similar subjects ON specialization block</div> <div>Weekly hours (included) / equipment / in - mid-semester / laboratory / projects</div> <div>W - week</div>										



Electrical Engineering

Budapest University of Technology and Economics
Faculty of Electrical Engineering and Informatics

MSc degree program in Electrical Engineering

4 semesters, 120 credits,
starts: Fall, valid from 2016

0 th semester 28 credits 28 h/week	Advanced mathematics 2/1/0/m/3	Natural Science 4/0/0/m/4 BMEVIETMA06 or BMEVIVEMA14	Electromagnetic Fields 3/1/0/e/4 BMEVIHVMA08	Engineering management 4/0/0/e/4 BMEVITMMB03	Mandatory human & economic science elective 2/0/0/m/2 2x BMEGT*****	Project laboratory 1 0/0/5/m/5 BMEVI**ML02	Free elective 2/0/0/m/2 2x	Common subjects Communication theory 3/0/0/m/4 BMEVIHVMA07
1 st semester 30 credits 25 h/week	Advanced mathematics 2/1/0/m/3	Common subject 3/0/0/m/4	Main specialization subject 2/1/0/e/4 3x	Secondary specialization subject 2/1/0/e/4	Free elective 2/0/0/m/2	Project laboratory 2 0/0/5/m/5 BMEVI**ML03	Electromagnetic Fields subject can be substituted by Physics 3 (BME11MX33) subject available in the spring semester.	Measurement theory 3/0/0/m/4 BMEVIMIMA17
2 nd semester 30 credits 25 h/week	Main specialization subject	Main specialization subject	Secondary specialization subject	Diploma Thesis Design 1	Mandatory human & economic science	DISCLAIMER: this roadmap is for information purposes only, without contractual value. Content is subject to change.		Alternating current systems

- Special subjects
 - Advanced mathematics 1.
 - BMETE90MX55 Stochastics
 - Natural science
 - BMEVIETMA06 Photonics Devices or
 - BMEVIVEMA14 Electrical Insulations and Discharges
 - Human and Economic science electives
- 4 credits altogether
- Specializations => Project laboratory 1
- Free elective courses

Advanced mathematics	Linear algebra 2/1/0/m/3 BMETE90MX54
	Stochastics 2/1/0/m/3 BMETE90MX55
	Combinatorial optimization 2/1/0/m/3 BMEVIVEMA06



Human & Economics Science Electives



BUDAPEST UNIVERSITY OF TECHNOLOGY AND ECONOMICS

Faculty of Electrical Engineering and Informatics

„Energy of Ne

DEAN'S MESSAGE

DEPARTMENTS

RESEARCH

SCIENTOMETRIC DATA

EDUCATION

FOR CURRENT STUDENTS

CONTACT

GENERAL INFORMATION

[Current academic calendar](#)

[Weekly schedule of classes](#)

[Subject descriptions](#)

[Free Elective Courses](#)

[Human & economic science elective](#)

[Mid-term exams, timetable](#)



edu Belépés



PROJECT SUBJECTS

[Project laboratory and thesis topics](#) • [Project laboratory requirements](#)

[Thesis portal](#)

[BSc Thesis regulations](#) • [BSc final comprehensive exam](#)

[MSC thesis regulations](#)

2020.09.03

PROGRAM DESCRIPTIONS

[BSc Electrical Engineering](#)

BME Villamosmérnöki és Informatikai Kar

25



Human & Economics Science Electives

Faculty of Economic and Social Sciences

IMPORTANT NOTES

If for one subject you can find several different types (lecture, practice, laboratory) of courses then please choose one and only one course from each type in order to be able to perform the subject's requirements successfully. Civil Engineering courses are on the website separately. Courses chosen from the offer of Faculty of Civil Engineering will be checked and arranged individually by the departmental coordinator.

Subject code	Subject name		Requirement	ECTS credit
BMEGT20A001	Management and Business Economics		Mid-semester mark	4
Course type	Course code	Course language	Timetable information	
Lecture	ER	English	MON:08:15-10:00(KF81); WED:14:15-16:00(KF88);	
The course introduces the essentials of management as they apply within the contemporary work environment and gives a conceptual understanding of the role of management in the decision making process. Particular attention is paid to management theories: principles of management, marketing management, quality management, production and project management. For problem formulation, both the managerial interpretation and the mathematical techniques are applied. Budapest University of Technology and Economics Faculty of Economic and Social Sciences Course Syllabus and Requirements Management and Business Economics 2. Course code Semester Hours per week (Theory/Practice) ECTS credits Language of Instruction Level (BSc/BA/MSc/MA) BMEGT20A001 fall/spring 4/0 4 Hungarian BSc/BA 3. Course supervisor (name, title, department): János Kövesi, dr. Habil, Professor, Department of Management and Business Economics 4. Lecturers: Name: Position: Department/Institute/availability (Room, e-mail address): Szilvia Bíró-Szigeti, PhD Associate Professor Dept. of Management and Business Economics, QB305, szigetisz@mvt.bme.hu János Kövesi Professor Dept.of Management and Business Economics, QA315, kovesi@mvt.bme.hu Noémi Kalló, PhD Associate Professor Dept.of Management and Business Economics, QA308, kallo@mvt.bme.hu Tibor Szabó, PhD Assistant Professor Dept.of Management and Business Economics, QA317, tiborszabo@mvt.bme.hu 5. Preliminary knowledge required: Basic concept of companies and their				

Computer Engineering

Budapest University of Technology and Economics
Faculty of Electrical Engineering and Informatics

MSc degree program in Computer Engineering

0 th semester 27 credits 25 h/week	Applied algebra and mathematical logic 4/0/0/e/4 BMETE90MX57	Languages and automata 3/0/0/m/4 BMEVISZMA04	Information theory 3/0/0/m/4 BMEVISZMA03	Engineering management 4/0/0/e/4 BMEVITMMB03	Project laboratory 1 0/0/5/m/5 BMEVI**ML00	Free elective 2/0/0/m/2 3x
1 st semester 31 credits 26 h/week	System optimization 4/0/0/e/4 BMEVISZMA02	Formal methods 3/0/0/m/4 BMEVIMIMA07	Main specialization subject 2/1/0/e/4 3x	Secondary specialization subject 2/1/0/e/4	Project laboratory 2 0/0/5/m/5 BMEVI**ML01	Mandatory human & economic science elective 2/0/0/m/2 BMEGT*****

- Special subjects
 - Specializations => Project laboratory 1
 - Free elective courses



MSC - Specializations

- All students are already directed to main and secondary specializations
 - Preferences (during entrance test)
 - Entrance test result
- changing specialization:
 - within the first enrolled semester
 - Submit the E999 request in the Neptun system
 - Current specialization, requested specialization, justification (what is the reason of your request)



Project laboratory 1

- related to the main or secondary specialization
- the student carry out individual project work under the supervision of a member of a department of the faculty
- The student is expected to regularly meet and report his/her progress to the supervisor during the semester.
- The work includes the application of theoretical knowledge to specific problems, the individual and creative ways of problem solving and the precise, systematic and thorough documentation of the development process and the results of the verification and testing.



Project laboratory 1



BUDAPEST UNIVERSITY OF TECHNOLOGY AND ECONOMICS
Faculty of Electrical Engineering and Informatics

„Energy of Ne

DEAN'S MESSAGE

DEPARTMENTS

RESEARCH

SCIENTOMETRIC DATA

EDUCATION

FOR CURRENT STUDENTS

CONTACT

GENERAL INFORMATION

[Current academic calendar](#)

[Weekly schedule of classes](#)

[Subject descriptions](#)

[Free Elective Courses](#)

[Human & economic science elective](#)

[Mid-term exams, timetable](#)



edu Belépés



PROJECT SUBJECTS

[Project laboratory and thesis topics](#) • [Project laboratory requirements](#)

[Thesis portal](#)

[BSc Thesis regulations](#) • [BSc final comprehensive exam](#)

[MSC thesis regulations](#)

PROGRAM DESCRIPTIONS

[BSc Electrical Engineering](#)

2020.09.03

BME Villamosmérnöki és Informatikai Kar

30



Project Laboratory Topics

Project laboratory and thesis topics				
Supervisor		Topic		F (i)
name	email address and office	Title	Description and tasks	
Ákos Nagy	nagy.akos@aut.bme.hu	MoveIt! motion planning library in robotics	MoveIt! is a ROS-based open-source software library for mobile manipulation (ROS: Robot Operating System). It provides a platform for developing manipulation, 3D perception, kinematics, control and navigation algorithms. MoveIt! has been used on over 65 robots, including robotic arms, wheeled robots and legged robots. The aim of this student project is to examine the capabilities of the library, especially in geometrical path planning and in time parameterization. The students have to create a ROS-based demonstration framework, which can show the capabilities of MoveIt!.	B S p
Gábor Csorvási	Csorvasi.Gabor@aut.bme.hu	HTML5 Based Graphical Interface for Path Planning and Robotic Development	The task is to design and implement new features for an existing GUI based on a ROS system. A Graphical User Interface is used in our department for robotic research and development. It is used for path planning purposes, but it could be used for real time tracking and profiling. Our goal is to create a general tool in order to ease robot development.	A k t Ji n k a l z p
Viktor Kovács	Kovacs.Viktor@aut.bme.hu	Marker based positioning by image processing	The task is to develop an algorithm that is able to detect polygon-like shapes in camera images. These detected polygons (quads) and the reference ones are then used to estimate the 3D viewpoint (position, orientation) of the camera. Several approaches can be applied to solve the problem (line fitting, thinning, corner detection, Hough-transform, contours etc). Also several methods can be selected and compared. For viewpoint estimation the Robust planar pose algorithm is suggested. Platform: C# + OpenCV (opencvsharp).	C p ti

2020.09

31



Project laboratory 1

- Process
 - Check the available topics
 - Select topics
 - Check the requirements of the topic
 - Contact the relevant supervisor (email)
 - Meet with the supervisor
 - discuss any open questions
 - Agree with the supervisor
(you chose the topic and he/she accept you)
 - Do not forget register for the Project lab course
the neptun ID of the course depends on the department of your supervisor
- You could have several discussions in parallel
If you chosen a topic and the supervisor has agreed to receive you, please inform the other contacted supervisors about your decision
- Select your topic, asap!!!!



Free Elective Courses



BUDAPEST UNIVERSITY OF TECHNOLOGY AND ECONOMICS
Faculty of Electrical Engineering and Informatics

„Energy of Ne

DEAN'S MESSAGE

DEPARTMENTS

RESEARCH

SCIENTOMETRIC DATA

EDUCATION

FOR CURRENT STUDENTS

CONTACT

GENERAL INFORMATION

[Current academic calendar](#)

[Weekly schedule of classes](#)

[Subject descriptions](#)

[Free Elective Courses](#)

[Human & economic science elective](#)

[Mid-term exams, timetable](#)

PROJECT SUBJECTS

[Project laboratory and thesis topics](#) • [Project laboratory requirements](#)

[Thesis portal](#)

[BSc Thesis regulations](#) • [BSc final comprehensive exam](#)

[MSC thesis regulations](#)

PROGRAM DESCRIPTIONS

[BSc Electrical Engineering](#)



edu Belépés



2020.09.03

BME Villamosmérnöki és Informatikai Kar

33



Free Elective Courses

Free Elective courses : Munkalap1		
Fall 2019		
Title	credits	Subject description
Information and Network Security	4	https://portal.vik.bme.hu/kepzes/targyak/VITMAV
Network Planning	2	https://portal.vik.bme.hu/kepzes/targyak/VITMAV
Administrating Computer Networks I.	4	https://portal.vik.bme.hu/kepzes/targyak/VIHIAV
Administrating Computer Networks II.	4	https://portal.vik.bme.hu/kepzes/targyak/VIHIAV
Introduction to Quantum Computing and Communi	2	https://portal.vik.bme.hu/kepzes/targyak/VIHIAV
Privacy-Preserving Technologies	2	https://portal.vik.bme.hu/kepzes/targyak/VIHIAV
Simulation of Electronics Circuits	2	https://portal.vik.bme.hu/kepzes/targyak/VIHVJV
Optoelectronics	4	https://portal.vik.bme.hu/kepzes/targyak/VIEEJV
Windows native programming	2	https://portal.vik.bme.hu/kepzes/targyak/VIHVAV
Space Technology	4	https://portal.vik.bme.hu/kepzes/targyak/VIHVAC



For current students



BUDAPEST UNIVERSITY OF TECHNOLOGY AND ECONOMICS
Faculty of Electrical Engineering and Informatics

„Energy of Ne

DEAN'S MESSAGE

DEPARTMENTS

RESEARCH

SCIENTOMETRIC DATA

EDUCATION

FOR CURRENT STUDENT

CONTACT

GENERAL INFORMATION

[Current academic calendar](#)

[Weekly schedule of classes](#)

[Subject descriptions](#)

[Free Elective Courses](#)

[Human & economic science elective](#)

[Mid-term exams, timetable](#)



edu Belépés



PROJECT SUBJECTS

[Project laboratory and thesis topics](#) • [Project laboratory requirements](#)

[Thesis portal](#)

[BSc Thesis regulations](#) • [BSc final comprehensive exam](#)

[MSC thesis regulations](#)

PROGRAM DESCRIPTIONS

[BSc Electrical Engineering](#)

2020.09.03

BME Villamosmérnöki és Informatikai Kar

35



Academic Calendar

ACADEMIC CALENDAR for 2019/2020 BME Faculty of Electrical Engineering and Informatics (VIK)

Autumn semester

Registration period	2 – 6 September 2019
Study period	9 September – 13 December 2019
Grace period to fulfil course requirements	16 – 20 December 2019
Exam period	2 – 29 January 2020
Final exam period	2 – 31 January 2020
Graduation ceremony for international students	TBD (early February)
days off (no classes, tests or exams):	
University Sports Day	12 September 2019 (Thu)
Faculty Days (Schönherz Cup)	30 September – 1 October 2019 (Mon-Tue)
National holiday (commemoration of the Revolution of 1956)	23 October 2019 (Wed)
National holiday (All Saints' Day)	1 November 2019 (Fri)
Students' Scientific Conference ("TDK")	12 November 2019 (Tue)
Open Day for secondary-school students	29 November 2019 (Fri)
Winter holidays (incl. Christmas & New Year's Eve)	23 December 2019 – 1 January 2020
make-up Saturdays (for national, non-holiday days off):	
regular classes with even-week Friday schedule	7 December 2019
extra day of grace period (for in-class test retakes)	14 December 2019



Weekly schedule

Electrical Engineering MSc Embedded or Multimedia Main Spec. (starts: Fall 2019)

Electrical Engineering MSc Electric Power Main Spec (starts: Fall 2019)

Electrical Engineering MSc 2nd and 3rd Semesters Embedded Syst Main Spec

Day	from	till	Subject	Subject code	Course	Type	Week	Lecturers	Room
Monday	10:15	12:00	Electromagnetic Fields	BMEVIHVMA08	A2	Theory	2,4,6,8,10,12,14	Dr. Bokor Árpád	V1501
Monday	10:15	12:00	Electromagnetic Fields	BMEVIHVMA08	A2	Theory	1,3,5,7,9,11,13	Dr. Bokor Árpád	V1501
Tuesday	08:15	10:00	Advanced Mathematics for Electrical Engineers - Stochastics	BMETE90MX55	A0	Theory	All		E407
Wednesday	08:15	10:00	Photonics Devices	BMEVIETMA06	5_A	Theory	All	Dr. Hurtony Tamás József, Dr. Pődör Bálint	V1102
Wednesday	08:15	10:00	Electrical Insulations and Discharges	BMEVIVEMA14	1920_1_VIVEMA14_elm_angol	Theory	All	Cselkó Richárd, Dr. Berta István, Dr. Göcsei Gábor Róbert, Dr. Tamus Zoltán Ádám	E305c
Wednesday	12:15	14:00	Advanced Mathematics for Electrical Engineers - Stochastics	BMETE90MX55	A1	Practice	2,4,6,8,10,12,14		QBF13
Wednesday	14:15	16:00	Electromagnetic Fields	BMEVIHVMA08	A2	Theory	1,3,5,7,9,11,13	Dr. Bokor Árpád	V1501
Wednesday	14:15	16:00	Electromagnetic Fields	BMEVIHVMA08	C2	Practice	2,4,6,8,10,12,14	Dr. Bokor Árpád	V1501
Thursday	08:15	10:00	Photonics Devices	BMEVIETMA06	5_A	Theory	All	Dr. Hurtony Tamás József, Dr. Pődör Bálint	V1102
Thursday	08:15	10:00	Electrical Insulations and Discharges	BMEVIVEMA14	1920_1_VIVEMA14_elm_angol	Theory	All	Cselkó Richárd, Dr. Berta István, Dr. Göcsei Gábor Róbert, Dr. Tamus Zoltán Ádám	E305c
Friday	08:15	12:00	Engineering Management	BMEVITMMB03	AE1	Theory	All	Kunsági László, Dr. Kósa Zsuzsanna Mária, Dr. Szűcs Gábor	IE220

These documents are for information purposes only!



Subject description

Subjects

List filter:

Listed: 193 subjects

<u>Code</u>	<u>Name</u>	<u>Department</u>	<u>Credits</u>
VIAUM014	Advanced Power Electronics	AUT	4 credits
VIAUM019	Novel Technologies and Renewables	AUT	4 credits
VIAUM021	Project Laboratory	AUT	3 credits

Foundation of Computer Science

[angol nyelvű adatlap](#)

A tantárgy neve magyarul / Name of the subject in Hungarian: A számítástudomány alapjai

Last updated: 2017. június 22.

Budapest University of Technology and Economics
Faculty of Electrical Engineering and Informatics

Electrical Engineering
BSc

Course ID	Semester	Assessment	Credit	Tantárgyfélév
VISZAA05		2/2/0/v	5	

3. Course coordinator and department

Dr. Katona Gyula, Számítástudományi és Információelméleti Tanszék

Web page of the course

<http://www.cs.bme.hu/sza>

4. Instructors

Dr. Attila Sali, associate professor, Department of Computer Science and Information Theory

6. Pre-requisites

Title
Lecturers
Pre-requisites
Objectives
Synopsis
Assessment
Recaps

...



Pre-requisites

- The subject datasheet of some specialization subjects may include preliminary subject prerequisites
 - Start in the spring semester (degree program roadmap - starts: spring)
 - Start in the fall semester (degree program roadmap - starts: fall)
- MSc Specialization laboratories, pre-requisites
- Project Laboratory 1., Project Laboratory 2., Diploma Thesis Design 1., Diploma Thesis Design 2. can only be taken one after the other having completed the credits of the previous subject
 - prerequisite of the admission of Diploma Thesis Design 2
 - Please check the project description about the pre-requisites



Your life is changed

Be careful

- New city, new country, new classmates, without family...
- You have to manage your life (accommodation, residence permit, offices, living cost, ...)
- BSc program => MSc program
 - Difficult subjects, hard assessments
 - There is no continuous monitoring
 - „freedom“
 - If you do not start learning at the beginning
 - ⇒ You will have too much tasks at the end of the semester
 - ⇒ You can not fulfil the subjects
 - ⇒ You can not register for further subjects in the next semester (because of the pre-requisites)
 - ⇒ ...



Focus on your study!

- There is no way to grant exemptions from the
 - pre-requisite rules
 - conditions for admission to thesis defense session
- The number of credit points to be accumulated, the grade point average to achieve, the number of recaps are controlled. Failing to satisfy those rules, you are dismissed from your studies.
 - twice the programme duration
 - min. 20 credits / the latest 3 active semesters
 - MSc: cumulated GPA of min. 2.50 at the end of the 2nd active semester
 - max. 6 exams/subject
- Plagiarism and cheating: zero tolerance!
 - At least fail of the subject in the given semester (both copying and copied students)



Tuition fee

- If you have no scholarship...

	For non-EU citizens	For EU citizens
MSc program	3500EUR/semester	2750EUR/semester

- Stipendium Hungaricum Scholarship
 - max. 2 semesters extension
 - min. 36 credits / the latest 2 active semesters (decision of the Tempus foundation)
- Delay in the study program
 - Time, money, etc.
 - Residence permit...



Credit transfer

- You can transfer your previously obtained credits to BME.
- Requirement/Rules:
 - The transferred subject needs to match with the BME subject at least in 70%.
 - The deadline is the 4th week of each semester.
- Process:
 - Submit the E024 request in the Neptun system
 - Submit your transcript as well.
 - Submit the official description (in English!) of the transferred subject as well.
 - You will get the FINAL decision in 2-5 days. (No more negotiations later!)



Student life ↔ Study





Thank you for your attention !