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

1ts semester fall 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/m/4 BMEVIHVMA08
- Engineering management 4/0/0/e/4 BMEVITMMB03
- Project laboratory 1 0/0/5/m/5 BMEVI**ML02
- Free elective 2/0/0/m/2 — 2x
- Mandatory human & economic science elective 2/0/0/m/2 BMEGT***** — 2x

2nd semester spring 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
- Project laboratory 2 0/0/5/m/5 BMEVI**ML03
- Free elective 2/0/0/m/2

3rd semester fall 32 credits 22 h/week

- Main specialization subject 2/1/0/e/4 — 2x
- Main specialization laboratory 0/0/3/m/4
- Secondary specialization subject 2/1/0/e/4 — 2x
- MSc DiplomaThesis Design 1 0/5/0/m/10 BMEVI**MT02
- Mandatory human & economic science elective 2/0/0/m/2 BMEGT*****

4th semester spring 30 credits 18 h/week

- Common subject 3/0/0/m/4
- Main specialization laboratory 0/0/3/m/4
- Secondary specialization lab. 0/0/3/m/4
- MSc DiplomaThesis Design 2 0/10/0/m/20 BMEVI**MT01

Electromagnetic Fields subject can be substituted by Physics 3 (BMETE11MX33) subject available in the spring semester.

DISCLAIMER: this roadmap is for information purposes only, without contractual value. Content is subject to change without notice.

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.

Common subjects

- Communication theory 3/0/0/m/4 BMEVIHVMA07
- Measurement theory 3/0/0/m/4 BMEVIMIMA17
- Alternating current systems 3/0/0/m/4 BMVIVEMA13

Advanced mathematics

- Linear algebra 2/1/0/m/3 BMETE90MX54
- Stochastics 2/1/0/m/3
- Combinatorial optimization 2/1/0/m/3 BMEVISZMA06

Main specialization

ELECTRIC POWER SYSTEMS

- Power system operation and control 2/1/0/e/4 BMEVIVEMA01
- Electrical systems of sustainable energetic 2/1/0/e/4 BMEVIVEMA02
- Power system transients 2/1/0/e/4 BMEVIVEMA03
- Protection systems and measurement tech. 2/1/0/e/4 BMEVIVEMA04
- Electric energy market 2/1/0/e/4 BMEVIVEMA05
- Electric Power Systems laboratory 1 0/0/3/m/4 BMEVIVEMA06
- Electric Power Systems laboratory 2 0/0/3/m/4 BMEVIVEMB00

MULTIMEDIA SYSTEMS AND SERVICES

- Mobile and wireless networks 2/1/0/e/4 BMEVIHIMA07
- Broadband wireless t-comm. & broadcast-ing systems 2/1/0/e/4 BMEVIHVMA01
- Foundations of multi-media technologies 2/1/0/e/4 BMEVIHIMA08
- Networked multime-dia systems & services 2/1/0/e/4 BMEVIHIMA09
- Media informatics systems 2/1/0/e/4 BMEVITMMA08
- Lab. on multimedia systems & services 1 0/0/3/m/4 BMEVIHIMA10
- Lab. on multimedia systems & services 2 0/0/3/m/4 BMEVIHIMB02

EMBEDDED SYSTEMS

- Artifical Intelligence Based Control 2/1/0/e/4 BMEVIIIMA09
- SW technology for embedded systems 2/1/0/e/4 BMEVIMIMA09
- Computer vision systems 2/1/0/e/4 BMEVIIIMA07
- Development of SW applications 2/1/0/e/4 BMEVIAUMA09
- Design & integration of embedded systems 2/1/0/e/4 BMEVIMIMA11
- Control Engineering and Image Processing Laboratory 0/0/3/m/4 BMEVIIIMA11
- Applied Computer Systems Laboratory 0/0/3/m/4 BMEVIAUMB03

The prerequisite of the admission of Diploma Thesis Design 2

- Completing 84 credits according to the study plan
- Completing the credits of the following subjects
  - Two Advanced mathematic subjects
  - One of the Common Subjects
  - Natural Science subject
  - Diploma Thesis Design 1. subject

Secondary specialization

SMART CITY

- Sensor networks and applications 2/1/0/e/4 BMEVITMMA09
- Intelligent traffic systems 2/1/0/e/4 BMEVITMMA10
- Human-Computer Interaction 2/1/0/e/4 BMEVITMMA11
- Smart city laboratory 0/0/2/m/2 BMEVITMMB04

SMART SYSTEMS INTEGRATION

- Circuit environment 2/1/0/m/4 BMEVIEEMA06
- System level design 2/1/0/e/4 BMEVIEEMA05
- Fundamentals of smart systems 2/1/0/e/4 BMEVIEEMA04
- Smart systems design laboratory 0/0/2/m/2 BMEVIEEMB00

OPTICAL COMMUNICATION

- Optical Network Elements 2/1/0/m/4 BMEVIHVMA05
- Optical Systems and Applications 2/1/0/e/4 BMEVIHVMA06
- Optical Networking Architectures 2/1/0/e/4 BMEVITMMA12
- Optical Networks Laboratory 0/0/2/m/2 BMEVIHVMB03

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 .

The datasheet 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

LEGEND

Subject title
3/1/1/m/5
3x
BME code

number of similar subjects OR specializatio n blocks

weekly hours
- lecture
- classroom
- laboratory

ECTS credit
1 credit represents 30 work hours

subject code
as in the Neptun course management

requirement
m: mid-semester mark
e: exam