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

MSc degree program in Computer Engineering

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

0th 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

1st 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*****

2nd semester — 30 credits, 21 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
- MSc DiplomaThesis Design 1 0/5/0/m/10 BMEVI**MT00
- Mandatory human & economic science elective 2/0/0/m/2 2x BMEGT*****

3rd semester — 32 credits, 19 h/week

- Main specialization laboratory 0/0/3/m/4
- Secondary specialization subject 2/1/0/e/4
- Secondary specialization lab. 0/0/3/m/4
- MSc DiplomaThesis Design 2 0/10/0/m/20 BMEVI**MT01
- Free elective (Smart City secondary specialization) 2/0/0/m/2

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

MINIMAL NUMBER OF APPLICANTS REQUIRED

THESIS DEFENSE SESSION — Organized during the last exam period. Includes presentation of thesis work, discussion, oral exam in two subjects. Conditions for admission apply.

Semester structure:

- registration (1 week)
- classes (14 weeks)
  - lectures
  - classroom practices
  - lab. practices
  - quizzes
  - midterms
  - homework assignments
- resits (1 week)
  - retakes of midterm(s)
  - late homework submission
  - early exams

  RESTRICTIONS APPLY
- exams (20 days) RESTRICTIONS APPLY

Main specialization

APPLIED INFORMATICS

- SW development methods & paradigms 2/1/0/e/4 BMEVIAUMA00
- Distributed systems & domain-specific modeling 2/1/0/e/4 BMEVIAUMA01
- Service oriented system integration 2/1/0/e/4 BMEVIIIMA04
- Business intelligence 2/1/0/e/4 BMEVIAUMA02
- Software and systems verification 2/1/0/e/4 BMEVIMIMA01
- Distributed systems laboratory 0/0/3/m/4 BMEVIAUMA03
- Business intelligence laboratory 0/0/3/m/4 BMEVIAUMB00

INTERNET ARCHITECTURE AND SERVICES

- Internet ecosystem and its evolution 2/1/0/e/4 BMEVITMMA00
- Agile network service development 2/1/0/e/4 BMEVITMMA01
- Cloud networking 2/1/0/e/4 BMEVITMMA02
- Modeling seminar for engineers 2/1/0/e/4 BMEVITMMA03
- Internet services and applications 2/1/0/e/4 BMEVITMMA04
- Infocommunication services laboratory 1 0/0/3/m/4 BMEVIHIMA04
- Infocommunication services laboratory 2 0/0/3/m/4 BMEVITMMB00

REMARK
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.

REMARKS:
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.

Secondary specialization

SMART CITY

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

CLOUD AND PARALLEL SYSTEMS

- Cloud computing 2/1/0/m/4 BMEVIIIMA05
- High performance parallel computing 2/1/0/e/4 BMEVIIIMA06
- GPGPU applications 2/1/0/e/4 BMEVIIIMB01
- Parallel programming laboratory 0/0/3/m/4 BMEVIIIMB02

SUBJECT LEGEND

Subject title 3/1/1/m/5 — BMECode — 3x

- **weekly contact hours**: lectures/ - classroom practices/ - laboratory practices
- **credit value** according to ECTS – 1 credit represents 30 work hours
- **number of similar subjects OR specialization block**
- **requirement**: m – mid-semester mark; e – exam
- **subject code** as in the Neptun course management system

SUBJECT TYPES

- Fundamentals in natural sciences
- Secondary specialization studies
- Main specialization studies
- Economics & humanities
- Free electives
- Common courses

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 .

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
  - Applied algebra and mathematical logic (BMETE90MX57)
  - System optimization (BMEVISZMA02)
  - Languages and automata (BMEVISZMA04)
  - Information theory (BMEVISZMA03)
  - Formal methods (BMEVIMIMA07)
  - Diploma Thesis Design 1 (BMEVI**MT00)