### MSc degree program in Electrical Engineering

**Budapest University of Technology and Economics**

**Faculty of Electrical Engineering and Informatics**

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

#### 1st semester
- **Fall:** 32 credits, 20/12/0 weekly
  - Advanced mathematics 2/1/0/m/3
  - Natural Science 4/0/0/m/4 (BMEVIMMA06 or BMEVIVEMM04)
  - Electromagnetic Fields 3/1/0/m/4 (BMEVIMMA08)
  - Engineering management 4/0/0/e/4 (BMEVIMMB03)
  - Project laboratory 1 0/0/5/m/5 (BMEVIMMA02)
  - Free elective 2/0/0/m/2
  - Mandatory human & economic science elective 2/0/0/m/2 (BMEG****)

#### 2nd semester
- **Spring:** 32 credits, 20/12/0 weekly
  - Advanced mathematics 2/1/0/m/3
  - Common subject 3/0/0/m/4
  - Main specialization subject 3x 2/1/0/e/4
  - Secondary specialization subject 2/1/0/e/4
  - Project laboratory 2 0/0/5/m/5 (BMEVIMMA03)
  - Free elective 2/0/0/m/2

#### 3rd semester
- **Fall:** 32 credits, 20/12/0 weekly
  - Main specialization subject 2/1/0/e/4
  - Main specialization laboratory 0/0/3/m/4
  - Secondary specialization subject 2/1/0/e/4
  - MSc DiplomaThesis Design 1 0/0/5/m/10 (BMEVIMM00)
  - Mandatory human & economic science elective 2/0/0/m/2 (BMEG****)
  - Electromagnetic Fields subject can be substituted by Physics 3 (BMEETI1MXX33) subject available in the spring semester.

#### 4th semester
- **Spring:** 32 credits, 20/12/0 weekly
  - Mobile and wireless networks 2/1/0/e/4 (BMEVHMA07)
  - Broadband wireless t-comm. & broadcasting systems 2/1/0/e/4 (BMEVHMA08)
  - Foundation of multimedia technologies 2/1/0/e/4 (BMEVHMA08)
  - Networked multimedia systems & services 2/1/0/e/4 (BMEVHMA09)
  - Computer vision systems 2/1/0/e/4 (BMEVHMA09)
  - Development of SW applications 2/1/0/e/4 (BMEVHMA09)
  - Design & integration of embedded systems 2/1/0/e/4 (BMEVHMA09)
  - Virtual reality and Image Processing Laboratory 0/0/3/m/4 (BMEVIGMA13)
  - Laboratory 2., Diploma Thesis
  - Project Laboratory 1.

#### Optional subjects
- **Spring:** 12 credits, 8/0/0 weekly
  - Mobile and wireless networks 2/1/0/e/4 (BMEVHMA07)
  - Broadband wireless t-comm. & broadcasting systems 2/1/0/e/4 (BMEVHMA08)
  - Foundation of multimedia technologies 2/1/0/e/4 (BMEVHMA08)
  - Networked multimedia systems & services 2/1/0/e/4 (BMEVHMA09)
  - Computer vision systems 2/1/0/e/4 (BMEVHMA09)
  - Development of SW applications 2/1/0/e/4 (BMEVHMA09)
  - Design & integration of embedded systems 2/1/0/e/4 (BMEVHMA09)
  - Virtual reality and Image Processing Laboratory 0/0/3/m/4 (BMEVIGMA13)

#### Mandatory human & economic science elective
- Mandatory human & economic science elective 2/0/0/m/2 (BMEG****)

#### Project lab.
- 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.

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**Subject title:** 3/1/1/m/6

**ECTS credit:** 1 credit represents 30 work hours

**Weekly hours:** as in the Neptun course management requirement

**Subject code:** m: mid-semester mark e: exam

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**Legends:**

- **Electric Power Systems**
  - Power system operation and control 2/1/0/e/4 (BMEVIMMA06)
  - Electrical systems of sustainable energetic 2/1/0/e/4 (BMEVIMMA02)
  - Power system transients 2/1/0/e/4 (BMEVIMMA02)
  - Protection systems and measurement tech. 2/1/0/e/4 (BMEVIMMA02)
  - Electric energy market 2/1/0/e/4 (BMEVIMMA05)
  - Electric Power Systems laboratory 1 0/0/3/m/4 (BMEVIMMA06)
  - Electric Power Systems laboratory 2 0/0/3/m/4 (BMEVIMMA00)

- **Multimedia and Systems Services**
  - Mobile and wireless networks 2/1/0/e/4 (BMEVHMA07)
  - Broadband wireless t-comm. & broadcasting systems 2/1/0/e/4 (BMEVHMA08)
  - Foundations of multimedia technologies 2/1/0/e/4 (BMEVHMA08)
  - Networked multimedia systems & services 2/1/0/e/4 (BMEVHMA09)
  - Computer vision systems 2/1/0/e/4 (BMEVHMA09)
  - Development of SW applications 2/1/0/e/4 (BMEVHMA09)
  - Design & integration of embedded systems 2/1/0/e/4 (BMEVHMA09)
  - Virtual reality and Image Processing Laboratory 0/0/3/m/4 (BMEVIGMA13)
  - Laboratory 2., Diploma Thesis
  - Project Laboratory 1.

- **SMART CITY**
  - Sensor networks and applications 2/1/0/e/4 (BMEVIMMA09)
  - Intelligent traffic systems 2/1/0/e/4 (BMEVIMMA10)
  - Human-Computer Interaction 2/1/0/e/4 (BMEVIMMA11)
  - Smart city laboratory 0/0/2/m/2 (BMEVIMMB04)

- **SMART SYSTEMS INTEGRATION**
  - Circuit environment 2/1/0/m/4 (BMEVIMMA06)
  - System level design 2/1/0/e/4 (BMEVIMMA05)
  - Fundamentals of smart systems laboratory 2/1/0/e/4 (BMEVIMMA04)
  - Smart systems design laboratory 0/0/2/m/2 (BMEVIMMB00)

- **OPTICAL COMMUNICATION**
  - Optical Network Elements 2/1/0/m/4 (BMEVIMMA05)
  - Optical Systems and Applications 2/1/0/e/4 (BMEVIMMA06)
  - Optical Networks Laboratory 0/0/2/m/2 (BMEVIMMB03)

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