### MSc degree program in Electrical Engineering

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

<table>
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<tr>
<th>Semester</th>
<th>Credits</th>
<th>Weeks</th>
<th>Content</th>
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<tr>
<td>1st</td>
<td>28</td>
<td>27</td>
<td>Advanced mathematics 2/1/0/m/3</td>
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<td>Main specialization subject 2/1/0/e/4</td>
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<td>Project laboratory 1 0/0/5/m/5</td>
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<td>Main specialization subject 2/1/0/e/4</td>
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<td>Project laboratory 2 0/0/5/m/5</td>
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<td>Main specialization laboratory 1 0/0/3/m/4</td>
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<td>MSc Diploma Thesis Design 1 0/5/0/m/10</td>
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**Main specialization subjects:**
- **Electrical Power Systems**
  - Power system operation and control 2/1/0/e/4
  - Electrical systems of sustainable energetic 2/1/0/e/4
  - Power systems transients 2/1/0/e/4
  - Protection systems and measurement tech. 2/1/0/e/4
- **Electrical Energy**
  - Electric energy market 2/1/0/e/4
- **Electric Power Systems laboratory 1** 0/0/3/m/4
- **Electric Power Systems laboratory 2** 0/0/3/m/4

**Common subjects:**
- **Advanced mathematics**
  - Linear algebra 2/1/0/m/3
  - Stochastics 2/1/0/m/3
  - Combinatorial optimization 2/1/0/m/3

**Smart City:**
- Sensor networks and applications 2/1/0/e/4
- Intelligent traffic systems 2/1/0/e/4
- Human-Computer Interaction 2/1/0/e/4
- Smart city laboratory 0/0/2/m/2

**Smart Systems Integration:**
- Circuit environment 2/1/0/m/4
- System level design 2/1/0/e/4
- Fundamentals of smart systems 2/1/0/e/4
- Smart systems design laboratory 0/0/2/m/2

**Optical Communication:**
- Optical Network Elements 2/1/0/m/4
- Optical Systems and Applications 2/1/0/e/4
- Optical Networking Architectures 2/1/0/e/4
- Optical Networks Laboratory 0/0/2/m/2

**Mandatory human & economic science elective 2/0/0/m/2**

**Electric Power Systems laboratory 1** 0/0/3/m/4

**Electrical Energy**
- Electric energy market 2/1/0/e/4

**Electrical Power Systems laboratory 2** 0/0/3/m/4

**Project laboratory 2** 0/0/5/m/5

**MSc Diploma Thesis Design 1** 0/5/0/m/10

**Communication theory** 3/0/0/m/4

**Measurement theory** 3/0/0/m/4

**Alternating current systems** 3/0/0/m/4

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**DISCLAIMER:** this roadmap is for information purposes only, without contractual value. Content is subject to change without notice. Minimal number of applicants required.

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**PROJECT LABORATORY 1:**
- Project Laboratory 1. 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:
  - Two Advanced mathematical subjects
  - One of the Common Subjects
  - Natural Science subject
  - Diploma Thesis Design 1. subject

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

**ECTS credit**
- 1 credit represents 30 work hours
- subject code as in the Neptun course management system
- m: mid-semester mark
- e: exam

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**MSc degree program roadmap. See [www.vik.bme.hu/en](http://www.vik.bme.hu/en) for more details and regulations.**

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