### MSc degree program in Electrical Engineering

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

<table>
<thead>
<tr>
<th>Semester</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>Advanced mathematics 2/1/0/0/m/3</td>
<td>Common subject 3/0/0/0/m/4</td>
<td>Main specialization subject 2/1/0/0/e/4</td>
<td>Secondary specialization subject 2/1/0/0/e/4</td>
</tr>
<tr>
<td>Spring</td>
<td>Main specialization subject 2/1/0/0/e/4</td>
<td>Project laboratory 1 0/0/0/0/m/5</td>
<td>BMEVI**MA02</td>
<td>Communication theory 3/0/0/0/m/4</td>
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<tr>
<td>Fall</td>
<td>Project laboratory 2 0/0/0/0/m/5</td>
<td>Mandatory human &amp; economic sciences elective 2/0/0/0/m/2</td>
<td>Electric field &amp; wave propagation 0/0/0/0/m/2</td>
<td>Measurement theory 3/0/0/0/m/4</td>
</tr>
<tr>
<td>Spring</td>
<td>Mandatory human &amp; economic sciences elective 2/0/0/0/m/2</td>
<td>Electric Power Systems laboratory 2 0/0/0/0/m/4</td>
<td>BMEVI**MA03</td>
<td>Alternating current systems 3/0/0/0/m/4</td>
</tr>
</tbody>
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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**

**LEGEND**
- Subject title
- ECTS credit
- 1 credit represents 20 weekly hours
- **subject code** as in the Neptun course management system
- **mid-semester mark**
- **Final exam**
- **weekly hours**
- Lecture, Seminar, Laboratory

**Mandatory subjects**
- Electric Power Systems Laboratory 1
- Electric Power Systems Laboratory 2
- Power systems and operation control
- Energy systems and measurement tech.
- Electric energy market
- Lab. on multimedia systems & services 1
- Lab. on multimedia systems & services 2
- Design & integration of embedded systems
- Control Engineering and Image Processing Laboratory

**Main specialization subjects**
- Mobile and wireless networks
- Foundations of multimedia technologies & services
- Networked multimedia systems & services
- Media informatics systems
- Design & integration of embedded systems
- Control Engineering and Image Processing Laboratory
- Applied Computer Systems Laboratory

**Secondary specialization subjects**
- Artificial Intelligence Based Control
- SW technology for embedded systems
- Computer vision applications
- Development of SW applications
- Optical Networks Architectures
- Optical Networks Laboratory

**Optional subjects**
- Optical Network Elements
- Optical Systems and Applications
- Project Laboratory 1
- Project Laboratory 2
- Diploma Thesis Design 1
- Diploma Thesis Design 2

**Common subjects**
- Electric Power Systems Laboratory 1
- Electric Power Systems Laboratory 2

**Free electives**
- Mobile and wireless networks
- Foundations of multimedia technologies & services
- Networked multimedia systems & services
- Media informatics systems
- Design & integration of embedded systems
- Control Engineering and Image Processing Laboratory
- Applied Computer Systems Laboratory

**MSc Diploma Thesis Design 2**
- Completing 84 credits according to the study plan
- Completing the credits of the following subjects
  - Two Advanced mathematics subjects
  - One of the Common Subjects
  - Natural Science subject
  - Diploma Thesis Design 1 subject

**Smart City**
- Sensor networks and applications
- Intelligent traffic systems
- Human-Computer Interaction

**Smart systems integration**
- Circuit environment
- System level design
- Fundamentals of smart systems
- Smart systems design laboratory

**Optical systems**
- Optical Network Elements
- Optical Systems and Applications
- Optical Networks Architectures

**Electrical Power Systems**
- Electric Power Systems Laboratory
- Power systems and operation control
- Electrical energy market

**Multimedia and services**
- Mobile and wireless networks
- Foundations of multimedia technologies & services
- Networked multimedia systems & services

**Power systems**
- Electric Power Systems Laboratory
- Electric field & wave propagation
- Measurement theory

**Combinatorial optimization**
- Stochastics
- Linear algebra

**Natural science**
- Linear algebra
- Stochastics
- Combinatorial optimization

**Electrical engineering**
- Electric Power Systems Laboratory
- Power systems and operation control
- Electrical energy market

**Electronics and information technology**
- Mobile and wireless networks
- Foundations of multimedia technologies & services
- Networked multimedia systems & services

**Embedded systems**
- Artificial Intelligence Based Control
- SW technology for embedded systems
- Computer vision applications
- Development of SW applications

**Mechatronics and Systems**
- Optical Networks Architectures
- Optical Networks Laboratory
- Optical Network Elements
- Optical Systems and Applications

**Communication theory**
- Communication theory
- Measurement theory
- Alternating current systems

**Human and economic sciences**
- Electric Power Systems Laboratory
- Electric field & wave propagation
- Measurement theory

**Project laboratory**
- Project Laboratory 1
- Project Laboratory 2
- Diploma Thesis Design 1
- Diploma Thesis Design 2