**Electric Machinery (ECTS 6)**

Language: the course is offered in English, Serbian and Hungarian.

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**Course description:**

The course includes a description of electrical machines. It describes the application of magnetic laws for the conversion of electrical energy into mechanical energy and back. The basic types of machines as well as transformers are cons*i*dered. The course includes theoretical analysis and practical testing of electro-mechanical energy converters.

This course would cover the following topics, both as lectures and exercises:

1. Introduction to magnetic field, basic concepts
2. Introduction to electric transformers, the working principle
3. Analysis of electric transformers
4. Testing electric transformers
5. Introduction to synchronous machine, the working principle
6. Analysis of synchronous machine
7. Testing synchronous machine
8. First exam
9. Introduction to induction machine, the working principle
10. Analysis of induction machine
11. Testing induction machine
12. Introduction to direct current machine
13. Analysis of direct current machine
14. Testing direct current machine
15. Second exam

**Aims:**

The goals are the following:

Understanding the principles of operation of electrical machines. Electrical machine testing skills. Ability to select appropriate electrical machines in an industrial environment.