

SYLLABUS

1. Course title:

Power Systems

2. Code:

ESKE202

3. Cycle of study:

1

4. ECTS credits:

6

5. Type of course: Mandatory Elective**6. Prerequisites:**

Fundamentals of Electrical Engineering II, Electrical Measurements, Theory of Electrical Circuits

7. Class restrictions:**8. Duration / semester:**

1

5

9. Weekly contact hours:

9.1. Lectures:

3

9.2. Seminars:

1

9.3. Laboratory/Practice classes:

1

10. Faculty:

Faculty of Electrical Engineering

11. Department/study program:

Electrical Engineering and Computer Science

12. Lecturer:

Ph.D. Majda Tešanović, assistant professor

13. Lecturer's e-mail:

majda.tesanovic@untz.ba

14. Web site:

www.fet.ba

15. Course aims:

Objective of the course is introduction of matrix based techniques and methods in modelling, solutions and analyses of stationary and short circuits states in electric power system (EPS). Procedure of analysis of physical processes in real time systems based on the results of simulations are covered in detail.

16. Learning outcomes:

General rules of electrical installation design. Symetric components. Power lines characteristics. Connection to the MV utility distribution network. Connection to the LV utility distribution network. MV + LV architecture selection guide. LV Distribution. Protection against electric shocks. Sizing and protection of conductors. LV switchgear: functions + selection. Protection against voltage surges in LV. Energy Efficiency in electrical distribution. Power factor correction and harmonic filtering. Harmonic management. Characteristics of particular sources and loads. Residential and other special locations. Using tools for designing LV networks. Grounding systems, Transients. System stability. Coordination of insulation power and communication networks..

17. Course content:

1. identify basic components of medium and low voltage installations
2. employ software solutions for modelling power networks and calculation of protective device selectivity
3. choose adequate equipment for specific implementations in power network
4. explain the role of individual components in power distribution systems
5. estimate usefulness of individual protective devices in power networks
6. synthesize theoretical knowledge of designing power networks with software tools
7. analysis of short circuit currents
8. analysis of reliability of power system

18. Learning methods:

Lectures- Involvement in lectures
Exams- Computer aided, written, and oral exams
Laboratory Work- Laboratory work
Consultations- Lecturers consultations
Other -Individual work and learning
E-learning -Homework

19. Assessment methods:

Two midterm written exams (calculations) in VII and XV week
Final exam: written and oral (theoretical issues and solve practical problems)

20. Assessment components:

Continuous Assessment

Homeworks 5 %

I midterm exam 30 %

II midterme exam 30 %

Class participation 5 %

Final Exam (oral or written) 30 %

Maximam: 100 %

21. Required reading list:

M.Ozegovic, K.Ozegovic, "Elektroenergetske mreže", I,II I III Dio

S. Milojković, "Teorija električnih kola",

N . Rajaković, "Analiza elektroenergetskih sistema I",

B.M.Weedy, B. J. Cory, N. Jenkins, J. B. Ekanayake, G. Strbac, Electric Power Systems

22. Web sources:

(max. 687 characters)

23. Applicable starting from the academic year:

2016/2017

24. Adopted in the Faculty/Academy session:

04.04.2016