SYLLABUS

1. Course title:

Planning and development of energy systems

2. Code:

(max. 20 characters)

3. Cycle of study:

1

4. ECTS credits:

3

5. Type of course:

○ Mandatory ◉ Elective

6. Prerequisites:

No

7. Class restrictions:

No

8. Duration / semester:

1 8

9. Weekly contact hours:

9.1. Lectures: 2

9.2. Seminars: 1

9.3. Laboratory/Practice classes: 0

10. Faculty:

Faculty of Mechanical Engineering

11. Department/study program:

Energy Engineering

12. Lecturer:

Dr.sc.Izudin Delić, assistant profesor

13. Lecturer's e-mail:

izudin.delic@untz.ba

14. Web site:

www.mf.untz.ba

15. Course aims:

Enable students to plan energy systems, based on modeling demand and energy supply, and for strategic energy thinking, taking into account available resources and technologies, as well as economic, environmental and social factors.

16. Learning outcomes:

After completing the course, students will be able to:
- identify basic concepts of energy planning
- identify basic concepts of power system planning

17. Course content:

Introduction to the course. Need for planning energy systems. The state of technology in energy and the possibilities of use. The vision of the future in energy. Energy Saving Modes. National Energy Programs, Energy Market. Planning methods in energy at regional, local and urban level. Overview of methodology, techno-economic criteria and tools for planning the development and construction of the energy system. Prediction of load increase, technology development, environmental impact and price movements. The interdependence of energy systems - examples from practice. European and B&H regulations in the construction of energy facilities.

18. Learning methods:

For the purpose of efficient teaching and achievement of set course objectives and student competencies during the course, the following methods will be used:
• lectures using multimedia resources with active participation and discussion of students,
• preparation and presentation of individual and team / group seminar papers,
• presentation in a real environment.

19. Assessment methods:

After 2/3 of the semester students write a test in a written form that covers the topic of the lecture. Test Consists of a group of questions of multiple choice, a group of questions of simple recollection and a group of questions of the essay type. The total number of students in the first test can reach 30 points. The test puts all students on the subject at the same time, thereby achieving the level of knowledge that is being tested and the conditions in which the student takes the exam. As part of the pre-requisites, students are required to prepare individual or group seminar work that will cover a specific topic from the content of the subject. The seminar paper is submitted to the subject in writing by the teacher for examination and evaluation, and then the oral presentation is presented verbatim with the use of multimedia aids. All group students whose participation is valued individually participate in the creation and presentation of group seminar work. For the seminar work delivered and presented, the student can achieve 0 to 25 points.
The final exam is oral. The right to attend the final exam are students who have achieved at least 50% of the total number of possible examinations on each of the previous test methods.
On an oral exam, the student answers the three questions raised from the curriculum program dealt with in the lectures. An oral exam can be passed if the student answers all three questions. The maximum number of points a student can earn on an oral exam is 40 points.
Checks on all forms of knowledge are recognized as a cumulative test if the result is positive after each individual check and is at least 50% of the total of the predicted or required knowledge and skills.
In order for a student to pass the subject, he must have a minimum of 54 cumulative points of which at least 24 points on the final exam.

20. Assessment components:

The assessment of the exam is based on the total number of points the student has obtained by fulfilling the pre-requisites and passing the exam and contains a maximum of 100 points and according to the following scale
Student Obligations Points
Presentation of lectures 10
Test I 20
Test II 20
Total pre-exam 50
Final Exam 25 - 50

21. Required reading list:

1. Wang X., McDonald J.R.(1994) Modern Power System Planning, McGraw-Hill
2.Ćalović M., Sarić A.(1999) Ekploatacija elektroenergetskih sistema, Belgrad, Beopress
3. Ćalović M., Sarić A.(2000) Planiranje elektroenergetskih sistema, Belgrad, Beopress

22. Web sources:

https://www.iea.org/media/weowebsite/energymodel/WEM_Methodology_WEO2011.pdf
http://hrcak.srce.hr/file/7797
http://powerlab.fsb.hr/enerpedia/

23. Applicable starting from the academic year:

2015/16

24. Adopted in the Faculty/Academy session:

01.06.2016