SYLLABUS

1. Course title:

Analog Integrated Electronics

2. Code:

TK202

3. Cycle of study:

1

4. ECTS credits:

6

5. Type of course:

(•) Mandatory ( ) Elective

6. Prerequisites:

[ESKE001] Fundamentals of Electrical Engineering I, [TK102] Introduction to Electronics

7. Class restrictions:

Students of Faculty of Electrical Engineering, Study program "Electrical Engineering and Computer Science" with fille

8. Duration / semester:

1 4

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. Aljo Mujčić, Full professor

13. Lecturer's e-mail:

aljo.mujcic@untz.ba

14. Web site:

(max. 50 characters)

15. Course aims:

Gain knowledge in the field of analysis of electronic circuits with linear integrated circuits and solving analog integrated circuits and systems using mathematical concepts and simulation tools.

16. Learning outcomes:

Analysis of electrical circuits including ideal and real models of operational amplifiers.
Design of linear and nonlinear systems with analog integrated circuits.
Analysis and design of waveform generators with operational amplifiers and discrete semiconductor components.
Design of the active filters, voltage regulators , and the analog/digital convertors with operational amplifiers.

17. Course content:

Classification of electronic circuit. Operational amplifiers. Implementation of linear characteristics with operational amplifier. Implementation of nonlinear characteristics with operational amplifier. Waveform generators. Active filters. Current and voltage sources. Analog /Digital Interface

18. Learning methods:

Lecturing with projected presentations and necessary derivations on blackboard, with active student participation. Seminars include problem solving and use cases based on electronic circuits with operational amplifiers, other discrete components and integrated circuits. Laboratory experiments cover these topics and verify lecture theory. Laboratory is based on experimental sessions including circuits with analog integrated operational amplifiers and numerical simulations of electronic circuits with analog integrated circuits.

19. Assessment methods:

Continuous assessment during the semester including the two tests during the semester, and the final exam. From two tests during the course students can collect a maximum of 50 points (25 points for each test). The first test is done in the 8th week of the semester and includes the material presented in the first 7 weeks of the semester. The second test is done in the last week of the semester and includes the material presented in the second part of the semester. Final examinations are taken in writing. On the final exam student can achieve a maximum of 50 points.

20. Assessment components:

Final grade is based on the total number of points earned by completing tests during semester and a final exam. The student can achieve a maximum of 100 points according to the following scale:
The first test 25
The second test 25
Total points during semester 50
The final exam counts for 50 points
Total 100

21. Required reading list:

1. Aljo Mujčić, Nermin Suljanović , Matej Zajc, Sklopovi sa linearnim integrisanim kolima, Izdavačka kuća Hamidović, Tuzla, 2015.
2. T. E. Price, Analog Electronics, Prentice Hall, 1997.
3. T. Brodić, Analogna integrisana elektronika, Svjetlost

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