

SYLLABUS

1. Course title:

Radio Telecommunication Systems

2. Code:

TK206

3. Cycle of study:

1

4. ECTS credits:

6

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

[TK101] Signals and Systems, [TK102] Fundamentals of Electronics

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

1

6

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:

PhD Suad Kasapovic, Associate Prof.

13. Lecturer's e-mail:

suad.kasapovic@untz.ba

14. Web site:

www.fe.untz.ba

15. Course aims:

The course aims to familiarize students with the characteristics and modeling propagation medium, modes of organization of radio telecommunication systems, basic design of modern radio telecommunication system.

16. Learning outcomes:

- Demonstrate knowledge of the propagation and communication systems for RF and microwave applications.
- Specify and design requirements of mobile radio microwave link systems.
- To understand the basic components of the electromagnetic radiation, the antenna of analysis parameters of the antenna.
- Know the impact of noise and interference to radio systems.
- Formulate solutions to common engineering applications at transmission lines and antennas.
- He knows the characteristics of the radar system.

17. Course content:

Characteristics of radio communication. International regulations and management of frequencies. General models of radio communication systems. Radio channel. Overview of model radio channels. Attenuation. Fading. Interference. Refraction. Diffraction. Polarization. Propagation models. Radio noise. Interference characteristics of the environment. Covering a territory of radio services. Diversity techniques. Combining techniques. Features and representation of microwave networks. The functional blocks of radio transmitter and receiver. Radio link systems: point to point, point to multipoint, the multipoint-to-multipoint. Radar systems.

18. Learning methods:

- Lectures using multimedia resources, and the active participation of students.
- Creating a tasks and work on the realization of individual and group project assignments.
- Preparation and presentation of individual and group seminar papers.

19. Assessment methods:**I Continuous Assessment (60 %)**

- The test on the midterm (40%)
- Project, assignments, seminar (20%)

II Final exam (40%)

Students in writing correspond to the theoretical questions and solve problems from the processed content of the course.

20. Assessment components:

54-63: mark 6 (six)
64-73: mark 7 (seven)
74-83: mark 8 (eight)
84-93: mark 9 (nine)
94-100: mark 10 (ten)

21. Required reading list:

- Mohammadi, F.M. Ghannouchi, RF Transceiver Design for MIMO Wireless Communications, Springer, 2012.
- David Tse, Pramod Viswanath, Fundamentals of wireless communications, Cambridge University Press, 2005.

22. Web sources:

www.fe.untz.ba

23. Applicable starting from the academic year:

2016/2017.

24. Adopted in the Faculty/Academy session:

04.04.2016