Course title: Optical Communications
Course code: 41077
ECTS credits: 6
Requirements: None
Basic information
Level of studies: Undergraduate applied studies
Year of study: 2
Trimester: 5
Goal: Providing system knowledge in the field of information transmission in the form of light signals via optical fibers and wireless optical transmission. Pointing out the differences in the integration of optical transmission elements into the subsystems used in optical telecommunications.
Outcome: The student who masters the course program should be able to identify the basic elements of optical signal transmission that are necessary in engineering practice; to participate in the implementation of new architectures of optical telecommunications systems and networks; to participate in assessing the development of optical communications in general.
Contents of the course
Theoretical instruction
Light signal guidance mechanisms. Boundary conditions of geometric optics. The evolution of optical telecommunications. Electromagnetic optical spectrum. Optical windows. Optical signal transmission media. Optical fiber. Fiber optic separation. Transmission and structural characteristics of optical fibers. Standardization and legislation in optical telecommunications. Sources of optical signals - transmitters. Indirect and direct modulation of the optical signal. Optical signal detectors.-receivers. Perturbation of the optical signal in the transmission medium. Optical signal regeneration mechanisms. Optical signal multiplexing.
Practical instruction (Problem solving sessions/Lab work/Practical training)
1. Analysis of analog and digital light signal transmission parameters in laboratory conditions;
2. Measurement of NA openings and attenuation of SM and MM optical fibers; Measuring the characteristics of light sources.
Textbooks and References
P. Kaminov, T. Li, Optical Fiber Telecommunications, Academic Press, San Diego, 2003.

J.Hecht, "Understanding Fiber Optics", 5th ed. Prentice Hall, London,UK, 2001
Number of active classes (weekly)
Lectures: 4
Practical classes: 2
Other types of classes:
Grading (maximum number of points: 100)
Pre-exam obligations: Points
Activities during lectures: 5
Activities on practical exercises: 10
Seminary work:
Colloquium: 40
Final exam: 45 Points
Written exam: 45
Oral exam:
Lecturer
Nikola Slavković, PhD