Course Unit Descriptor

Study Programme: Power, Electronic and Telecommunication Engineering (Communications Technologies and Signal Processing)	
Course Unit Title: Introduction to Information Theory	
Course Unit Code: EK310	
Name of Lecturer(s): Vojin Šenk	
Type and Level of Studies:Bachelor level	
Course Status (compulsory/elective): compulsory	
Semester (winter/summer): winter	
Language of instruction:english	
Mode of course unit delivery (face-to-face/distance learning): face-to-face	
Number of ECTS Allocated:5	
Prerequisites:none	

Course Aims:

Introduction to the basics of the information theory and an overview of algorithms used in information processing

Learning Outcomes:

The knowledge of basic postulates of the information theory

Syllabus:

- Introduction to information theory; - Source coding (statistical coding), block code for data compression, optimal prefix code (Huffman code), Arithmetic coding, Universal codes, Lempel-Ziv algorithms; - Protective coding (Model of the communication channel, Trans information, Equivocation, Irrelevance, Channel capacity and the methods of calculation, Optimal decoding. MAP criterion, The properties of binary symmetric channel, Convolutional codes and algorithms for their decoding)

Required Reading: Relevant literature in English

Weekly Contact Hours:3	**Lectures:2**	**Practical work:1**

Teaching Methods:

Lectures and Practice.

Knowledge Assessment (maximum of 100 points):100

Pre-exam obligations	points	**Final exam**	points
Exercise attendance	5	Oral part of the exam	50
Laboratory exercise attendance	5	Practical part of the exam	20
Lecture attendance	5		
Homework	5		
Test	10		

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.