



RTU Course "Fundamentals of Electronic Engineering"

15E02 Avionikas katedra

General data

Code	TAA206
Course title	Fundamentals of Electronic Engineering
Course status in the programme	Compulsory/Courses of Limited Choice
Course level	Undergraduate Studies
Course type	Professional
Field of study	Transport
Responsible instructor	Trifonovs-Bogdanovs Pjotrs
Academic staff	Šļenska Nina
Volume of the course: parts and credits points	1 part, 2.0 Credit Points, 3.0 ECTS credits
Language of instruction	LV, RU
Possibility of distance learning	Not planned
Abstract	Subject includes learning of operation principles of radio components and their application in different devices, analysis and understanding of electronic diagrams and systems, the basis of maintenance and diagnostic of multifunction of various aircraft radio-electronic systems.
Goals and objectives of the course in terms of competences and skills	To acquire fundamentals of electronics elements, to analyze the simple electronics circuitry. To acquire fundamental of electronics theory and to use this knowledge for analysis of practical problem in aviation.
Structure and tasks of independent studies	Work with directories and catalogues, search of elements in parameters. Work with characteristics of semi-conductor devices: a working point, a mode. Designation of electronic elements, practical reading of schemes (the block scheme, circuit diagrams).
Recommended literature	1. Greivulis J., Raņķis I. Modernas elektronikas pamati. - Rīga: Avots, 1992. 2. К. Петров, Радиоматериалы, радиокомпоненты и электроника, Москва, «Питер», 2003г. 3. U.Zītars, Elektronikas pamati. – Rīga, 2002.g.
Course prerequisites	Knowledge obtained in Physics, Mathematics, Electrical Engineering.

Course outline

Theme	Hours
Semiconductor materials, electric properties.	2
Semiconductor diodes, characteristics, features and function principles. Special diodes.	6
Transistor, characteristics, features and function principles, characteristics.	4
Transistors using: amplifier, A,B,C regime. Simple circuit boards.	8
Integrated circuits: logic circuits and linear circuits.	2
Operation amplifiers, circuits and using.	4
Laminate plastic.	2
Servomechanisms and servomechanism components. The purpose, main elements and faults types of aviation servomechanisms.	4

Learning outcomes and assessment

Learning outcomes	Assessment methods
Student knows operation principles of electronic elements.	Subject control - examination.
Student is able to analyze the electronic diagrams.	The test.
Student can design and calculate diagrams.	Subject control – examination.

Study subject structure

Part	CP	ECTS	Hours per Week			Tests		
			Lectures	Practical	Lab.	Test	Exam	Work
1.	2.0	3.0	1.5	0.0	0.5		*	