



## RTU Course "Radio Electronic Equipment of Aircraft"

15E02 Avionikas katedra

### General data

Code	TAA310
Course title	Radio Electronic Equipment of Aircraft
Course status in the programme	Compulsory/Courses of Limited Choice
Course level	Undergraduate Studies
Course type	Professional
Field of study	Transport
Responsible instructor	Smirnovs Igors
Volume of the course: parts and credits points	1 part, 2.0 Credit Points, 3.0 ECTS credits
Language of instruction	LV, EN, RU
Possibility of distance learning	Not planned
Abstract	The title, content and structure of the course meet the requirements of module 13.4 of PART 66 document (Aircraft maintenance, category B2). The course covers such issues as principles of radio equipment, aircraft communication, radio navigation and radio location equipment.
Goals and objectives of the course in terms of competences and skills	Gaining knowledge on theoretical principles of radio and aircraft radio electronic equipment. To obtain practical skills in controlling workability of radio electronic equipment. To be able to use knowledge in technical maintenance of the aircraft equipment.
Structure and tasks of independent studies	Independent work with literature and technical documentation.
Recommended literature	1. Module 13. Licence By Post. EASA 66. Books 14-23. HP20 1QA UK. 2008. 2. Aviation Electronics. By Keith W. Bose, Jeppesen. Sanderson Training products, 2006, 384 p. 3. Wasson J.W. Avionic Systems. Operation & Maintenance. Colorado: Jeppesen Sanderson, Inc. 2004, 318 p. 4. Civil Avionics Systems. I. Moir, A. Seabridge, 2002, 416 p.
Course prerequisites	Physics, electrical engineering, electronics.

### Course outline

Theme	Hours
Propagation of radio waves, antennas.	1
Principles of communication, transmission lines.	1
Radio transmitters and radio receivers.	2
VHF communication systems.	2
HF communication systems.	2
Audio systems.	1
Cockpit voice recorder and emergency location transmitters.	1
VHF Omni Range system.	2
Automatic direction finder.	1
Instrumental landing system.	2
Microwave landing system.	2
Distance measurement equipment.	2
Very low frequency hyperbolic navigation (VLF/Omega).	1
Doppler navigation.	1
Zonal navigation, RNAV systems.	1
Global navigation satellite systems.	2
Transponders.	2
Traffic collision avoidance system.	2
Weather radar.	2
Radio altimeter.	2

### Learning outcomes and assessment

Learning outcomes	Assessment methods
A student knows the fundamentals of radio equipment and is able to use this knowledge in studying radio electronic equipment.	Final exam question.
A student knows the task, construction and main technical parameters of aircraft communication, radio navigation and radio location systems, is able to use this knowledge in aircraft technical maintenance.	Laboratory work presentation question and Final exam question.
A student is able to control the workability of the radio electrical equipment.	Laboratory work presentation question and Final exam question.

A student is able to use aircraft inner communication equipment during the process of technical maintenance.

Laboratory work presentation question and Final exam question.

***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		*	