



RTU Course "Aircraft Electrical Systems"

15E02 Avionikas katedra

General data

Code	TAA211
Course title	Aircraft Electrical Systems
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
Volume of the course: parts and credits points	1 part, 3.0 Credit Points, 4.5 ECTS credits
Language of instruction	LV, EN, RU, DE
Possibility of distance learning	Not planned
Abstract	Tasks of electrified systems, structural schemes and properties. Operating principles, constructional and electrical schemes of aggregates of electrified systems.
Goals and objectives of the course in terms of competences and skills	Acquire skills to analyze functioning of electrified systems in different modes and conditions.
Structure and tasks of independent studies	Independently prepare presentations on the topics of multi-aircraft electrified system, design of aggregates and their operation in various modes. Working with professional literature. Lesson in the Aviation Institute's specialized lecture hall.
Recommended literature	1. Moir I., Seabridge A. Civil Avionics Systems. Wiley-Blackwell. 2006. 396 lpp. 2. Dirba J., Ketnetrs K. un citi. Transporta elektriskās māšīnas. – Rīga: RTU, 2001. 328 lpp. 3. Electrical Systema. Colorado: Jeppesen Sanderson, Inc. 1992. 269 lpp. 4. Решетов С.А. и др. Электрооборудование воздушных судов. М.: транспорт, 1990. 320 стр.
Course prerequisites	Physics, Mathematics.

Course outline

Theme	Hours
Tasks and placement of aircraft electrified systems.	4
Main control devices of electrified systems.	8
Lift control device electrified elements.	7
Trimmer control device electrified elements.	4
Automatic control system electrified devices.	6
Gyroscope. Main features. Operating principle. Construction.	6
Aviation engine operation electrified systems.	7
Aviation lights.	6

Learning outcomes and assessment

Learning outcomes	Assessment methods
The student understands physical processes in typical electrified systems devices.	Lab. works: construction of aviation electrified system devices and electrical schemes. Exam.
The student understands new aviation electrified structures and devices.	Work: structure scheme of new aircraft electrified devices. Exam.
The student is able to analyze the electrified system and to analyze the unit activity under different conditions.	Independent work, seminars. Exam.
The student is able to analyze the electrified system and to analyze circuitry operation in different modes.	Independent work, seminars. Exam.

Study subject structure

Part	CP	ECTS	Hours per Week			Tests		
			Lectures	Practical	Lab.	Test	Exam	Work
1.	3.0	4.5	1.5	0.5	1.0		*	