



RTU Course "Airfield Power Supply Devices and Systems"

15E02 Avionikas katedra

General data

Code	TAA254
Course title	Airfield Power Supply Devices and 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
Academic staff	Podgornovs Andrejs
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	Aerodrome electrical systems. Units. Parameter adjustment and control. The aircraft ground power system structure and units.
Goals and objectives of the course in terms of competences and skills	Acquire ground power systems structure scheme and unit functioning. Develop skills to analyze the power system under different conditions.
Structure and tasks of independent studies	Independently prepare reports on the topic - multi-ground power systems, their units' design and operation in various modes. Performance analysis. Calculation methods. Working with the special literature. Lesson in the Aviation Institute specialized lecture hall.
Recommended literature	<ol style="list-style-type: none"> 1. Introduction to Electrical Power Systems. Mohamed E. El-Hawary. Wiley-Blackwell. 2008. 394 p. 2. Aircraft Systems: Mechanical, Electrical and Avionics Subsystems Integration. Ian Moir, Allan Seabridge. Wiley-Blackwell. 2008. 546 p. 3. В. Жуков, В. Вольперт, В. Воеводинский. Электрическое и световое оборудование аэропортов. Москва. Транспорт. 1998г. 280 стр. 4. A. Vanags, Z. Križāns. Elektriskie tīkli un sistēmas. II daļa. Rīga. RTU izdevniecība. 2005g. 342 lpp. 5. A. Baltiņš, A. Kanbergs, S. Miesniece. Zemsprieguma elektriskie aparāti. Rīga. Jumava. 2007.g. 345 lpp.
Course prerequisites	Electrical engineering, aviation electrical machinery and apparatus.

Course outline

Theme	Hours
Aerodrome energy sources and their characteristics.	4
Aerodrome electrical system structure.	2
AC power system circuit and functional units.	4
Mains parameter adjustment and control. Protection hardware.	6
DC power system circuit and functional units.	4
DC network regulation parameters and control. Protection hardware.	6
Aircraft ground DC power system structure and aggregates.	4
Aircraft ground DC power system parameters regulation and control.	6
Aircraft ground AC power supply system structure and units.	4
Aircraft ground AC power system parameters regulation and control.	8

Learning outcomes and assessment

Learning outcomes	Assessment methods
The student knows the aerodrome power supply system circuit structure.	Lab. work: Power system structure scheme functioning. Exam.
The student knows the power systems unit design and operation.	Lab. work: Aerodrome power systems unit. Exam.
The student understands the structure scheme functioning of various aerodrome power systems in different modes.	Independent work, seminars. Exam.
The student is able to analyze the power systems unit activity 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	2.5	0.0	0.5		*	