



RTU Course "Analysis and Synthesis of Aviation Electrical Machines"

15E02 Avionikas katedra

General data

Code	TAA526
Course title	Analysis and Synthesis of Aviation Electrical Machines
Course status in the programme	Compulsory/Courses of Limited Choice
Course level	Post-graduate Studies
Course type	Professional
Field of study	Transport
Responsible instructor	Trifonovs-Bogdanovs Pjotrs
Academic staff	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	Power supply systems of different aircraft structures, schemes and characteristics. Power supply system circuit structure analysis and synthesis.
Goals and objectives of the course in terms of competences and skills	To develop skills to analyze power system under different conditions. To acquire aircraft power systems structure scheme variant of the optimal synthesis.
Structure and tasks of independent studies	To independently prepare reports on various aircraft electrical systems structural scheme and elements. Work with professional literature. Classes in Aviation institute's specialized room.
Recommended literature	1. Tooley M., Wyatt D. Aircraft Electrical and electronic Systems. Butterworth-HEINMANN Ltd, 2008g. 424lpp. 2. J. Dirba, K. Ketnetrs un citi. Transporta elektriskās mašīnas. Rīga. RTU, 2001. 328 lpp. 3. Electrical Systema. Colorado: Jeppesen Sanderson, Inc. 1992. 269 p.
Course prerequisites	Avionics systems, electrical systems.

Course outline

Theme	Hours
Aircraft DC power sources. Design. Parameters.	2
DC power system control blocks. Different mode analysis.	4
Civil passenger aircraft DC power supply circuit structure.	6
Aircraft AC power sources. Design. Parameters.	2
AC power supply system control blocks. Different mode analysis.	4
Civil passenger aircraft AC system chart.	6
Passenger aircraft power system structure schemes optimization.	4
Power supply system functionality control.	4

Learning outcomes and assessment

Learning outcomes	Assessment methods
The student knows different power system components.	Pract. works: aviation power supply systems, exam.
The student understands aircraft electrical system structure scheme functioning under different conditions.	Pract. works: aviation power supply systems, exam.
The student is able to synthesize aircraft electrical system elements.	Individual work, seminars, exam.
The student is able to synthesize different aircraft power system structure scheme.	Individual work, seminars, exam.

Study subject structure

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