



RTU Course "Aircraft and Powerplant Maintenance (Study Project)"

15E01 Aeronautikas tehnoloģiju katedra

General data

Code	TAE443
Course title	Aircraft and Powerplant Maintenance (Study Project)
Course status in the programme	Compulsory/Courses of Limited Choice
Course level	Undergraduate Studies
Course type	Professional
Field of study	Transport
Responsible instructor	Kleinhofs Mārtiņš
Academic staff	Ozoliņš Ilmārs
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 study project task and themes are focused on aircraft flight operation, maintenance and safety. Planning of fleet maintenance. Aircraft flight operation and flying calculations. The analysis of reliability of the airframe and systems of an aircraft. The analysis of erroneous actions of aircrafts systems. Development of methods of definition of refusals for concrete units and systems. Aircraft and engine diagnostician methods. Analysis of aviation engine main parameters and its influence on engine working. Engine structure and failure analysis. Management of maintenance of aircraft in the aviation company will be covered: organization of work, rules, standards and procedures, program of maintenance and modifications.
Goals and objectives of the course in terms of competences and skills	The goals of the study course is the planning of fleet maintenance, aircraft flying calculations. Be able to analyse a technical problem and to formulate decision. To get skill to prepare reliability calculation of aircraft or engine and their systems. Be able to perform system modification and prepare technical documentation for planning.
Structure and tasks of independent studies	Study project calculations and technical drawings are developed individually by students.
Recommended literature	<ol style="list-style-type: none"> 1. A&P Technician Powerplant Textbook. Colorado: Jeppesen Sanderson, Inc. 1994. 550p. 2. A&P Technician Airframe Textbook. Colorado: Jeppesen Sanderson, Inc. 2002. 650p. 3. Yu. Paramonov, A. Kuznetsov, M. Kleinhofs Reliability of Fatigue-Prone Airframe and Composite Material. Riga: Aviation institute of Riga Technical University, 2011. – 127 pp. 4. Aircraft construction and durability. 2009.g. 302 lpp 5. Advisory Circular. - Jeppesen Publish. 1998.- 750 pp. 6. Aircraft Systems & Components: Topical Maintenance Books. - Jeppesen Publish. 2000.- 215 pp. 7. Gaisa kuģu rokasgrāmata - konstrukcijas, remonta tehnoloģiju, vadu un sistēmu shēmas (Boeing - 737, A-320. SAAB-340, TU-154, IL-96, Fokker-50, An-24). 8. V.Vorobjov, V.Ziļ, S.Kuznecov. Osnovi teorii tehničeskoj ekspluatacii pilotažno-navigacionnogo oborudovanija. Moskva. Transport. 1999g. 9. V.Vorobjev, V.Konstantinov. Tehničeskoe obsluživanije i remont aviacionnih elektrosistem i pilotažno-navigacionnih kompleksov. Moskva. Universitetskaja kniga. 2007g.
Course prerequisites	Good knowledge of aircraft and engine maintenance, flight operation;

Course outline

Theme	Hours
Study project tasks, structure	2
Planning of fleet maintenance	4
Aircraft flight operation and flying calculations	4
Aircraft body, engine or systems working analysis (structural analysis, strength analysis)	6
Aircraft fixing elements design modification development, reliability calculations and to provide with technology	4
Drawings.	6
Preparation of technical documentation	6

Learning outcomes and assessment

Learning outcomes	Assessment methods
The student is able to plan fleet maintenance	Regular assessment of project progress
The student is able to do flying calculations	Regular assessment of project progress
The student is able to do reliability calculations of maintenance, systems or aggregate and its modification	Regular assessment of project progress
The student is able to explain the maintenance of airplane or engine and their system and its specific features.	A positive assessment of final examination commission.

Study subject structure

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