



## RTU Course "Civil Aviation Aircraft"

15E03 Lidaparātu teorijas un konstrukcijas katedra

### General data

Code	TAK502
Course title	Civil Aviation Aircraft
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	Hauka Māris
Volume of the course: parts and credits points	1 part, 3.0 Credit Points, 4.5 ECTS credits
Language of instruction	LV, EN, RU
Possibility of distance learning	Not planned
Abstract	Overview of airplane designing process. Aircraft modifications. Main flight and technical data. Aircraft structures in details: the fuselage, wing, stabilizer, control surfaces and wing mechanization construction. Take-off and landing equipment. Flight control system. Hydraulic system. Fluid and gas systems in general. Passenger life support and saving systems. Knowledge is given for middle and long range aircrafts in general, but not for specific aircraft.
Goals and objectives of the course in terms of competences and skills	To know civil aircraft main classifications and to be able to recognize and describe them. To gain the ability to analyze the aircraft body, landing gear, control system construction and their operation. To orientate in aircraft systems and to know the basic unit work.
Structure and tasks of independent studies	Research based on available information and literature. Based on research to prepare individual work about chosen aircraft units and learn about unit work. Presentation of individual work. Perform practical tasks about unit function.
Recommended literature	1. A&P Technician Airframe Textbook. Colorado: Jeppesen Sanderson, Inc. 2002. 650p. 2. Airframe and Powerplant Mechanics. Airframe Handbook. US Department of Transportation. Federal Aviation Administration. New Delhi: Himalayan Books.1994, 630p. 3. Lidmašinas SAAB 340 rokasgrāmata, 46 sējumi. Linköping: Saab Aircraft AB. 1984-1999.g 4. Kroes M.I., William A. Watkins, Frank Delp. Aircraft Maintenance. Repair. Sixth Edition, New York, 2002, 650p. GLENCOE Aviation Technology Series 5. Airplane Structure and Strength Analysis. Part 2. RTU, Riga 2002.g. 102p. 6. Chris Brady The Boeing 737 Technical Guide. 2006.-362pp.
Course prerequisites	Aerodynamic; Materials and hardware; Aviation electric and electric equipment; Aircraft and engine theory its strength and design; Elementary computer skills; English language

### Course outline

Theme	Hours
Aircraft classification, basic characteristics	2
Aircraft design and manufacturing process, modification and its significance	2
Aircraft basic design	2
Airframe structures (fuselage, wing, stabilizer)	6
Aircraft control surfaces, lift and drag regulating equipment	2
Take-off and landing equipment	4
Flight control systems	4
Aircraft fluid and gas general description (hydraulic, fuels, pneumatic systems)	4
Aircraft passenger life support systems (oxygen, Air conditioning and cabin pressurisation systems, Equipment and furnishings)	4
Aircraft safety systems (fire safety and de-icing systems, emergency and rescue)	2
Practical work	16

### Learning outcomes and assessment

Learning outcomes	Assessment methods
Student is able to recognize and describe different aircraft types	test
Student know civil aviation aircraft general structure	practical tasks, test
Student knows system basic units and how they operate	practical tasks, test
Student is able to generally orientate in aircraft systems and they basic units	test
Student know system failure results	test
Student knows in details aircraft hull, chassis and control system design and operation	test

### Study subject structure

Part	CP	ECTS	Hours per Week			Tests		
			Lectures	Practical	Lab.	Test	Exam	Work
1.	3.0	4.5	1.0	2.0	0.0	*		