



RTU Course "Construction Units and Details Designing"

15E01 Aeronautikas tehnoloģiju katedra

General data

Code	TAS220
Course title	Construction Units and Details Designing
Course status in the programme	Compulsory/Courses of Limited Choice
Course level	Undergraduate Studies
Course type	Professional
Field of study	Mechanics, Mechanical Engineering, Machine Building
Responsible instructor	Ozoliņš Ēriks
Academic staff	Pavelko Vitālijs Pavelko 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	An aircraft body design elements (a covering, a stringer, a frame, a spar, rivets) three-dimensional computer design using computer programs. Choice of a scale, sizes, a material etc. Drawings creation and registration using the ready design elements of the three-dimensional computer models. The fuselage design unit (a covering, a stringer and a frame rivet-joint place) composition from separate elements. The fuselage design segment with a window computer designing. Computer modelling and composition of aircraft undercarriage design units and aggregates.
Goals and objectives of the course in terms of competences and skills	To master the basic design of aircraft constructive elements using computer programs. To acquire skills of work with design computer programs. To be able to independently carry the aircraft construction designing.
Structure and tasks of independent studies	Work with the literature and internet. Computer program possibilities mastering. Computer designing of aircraft constructive elements.
Recommended literature	<ol style="list-style-type: none"> 1. Autodesk Inventor. -2008. 2. J. Krizbergs. Datorizētā projektēšana (CAM). Mācību grāmata. RTU, Rīga-2006, 271 lpp. 3. J. Krizbergs. Tehnoloģisko procesu datorizētā projektēšana (CAM). 1. darba burtnīca. Mācību līdzeklis. RTU, Rīga-2006, 204 lpp. 4. J. Krizbergs. Tehnoloģisko procesu datorizētā projektēšana (CAM). 2. darba burtnīca. Mācību līdzeklis. RTU, Rīga-2006, 151 lpp. 5. Aljamovski un citi. Datormodelēšana inženieru praksē. Sankt-Pēterburga, 2005.g., 800 lpp. (Krievu valodā). 6. V.Pavelko. Aviācijas konstrukciju aprēķina datormetodes.//Lekciju konspekts.- Rīga, 2001. 7. Stinton D. The design of the aeroplane. Blackwell Science. University Press, Cambridge, 1997, 642 p. 8. COMPUTER-AIDED DESIGN, ENGINEERING, AND MANUFACTURING: Systems Techniques And Applications, 2001 by CRC Press LLC Boca Raton London New York Washington, D.C., -285 pages.
Course prerequisites	Geometry, plotting.

Course outline

Theme	Hours
Coverings, stringers, frames, spars, rivets in the three-dimensional computer designing.	6
Choice of a scale, sizes, a material etc, creation and registration of drawings.	6
The fuselage design unit composition from separate elements.	6
The fuselage design segment with a window computer designing.	8
Computer modelling and composition of aircraft undercarriage design units and aggregates.	6

Learning outcomes and assessment

Learning outcomes	Assessment methods
Is able to design aircraft fuselage constructive elements.	Work on the computer; Examinations.
Is able to design aircraft undercarriage constructive elements.	Work on the computer; Examinations.
Is able to create drawings of a fuselage and the undercarriage on three-dimensional models.	Work on the computer; Examinations.

Study subject structure

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