



RTU Course "Bachelor Thesis Including Project"

15E03 Lidaparātu teorijas un konstrukcijas katedra

General data

Code	TAS012
Course title	Bachelor Thesis Including Project
Course status in the programme	Graduation Test
Course level	Undergraduate Studies
Course type	Professional
Responsible instructor	Pavelko Vitālijs
Volume of the course: parts and credits points	1 part, 12.0 Credit Points, 18.0 ECTS credits
Language of instruction	LV, EN, RU
Possibility of distance learning	Not planned
Abstract	A theme must be selected from the list. A theme should be connected with aerodynamics of aircraft, strength, non-destructive methods, and other scientific and technological problems. Pilot project research, literature review of the problem. Development of technical requirements. Selection and optimization of general parameters of an object. Component design and calculations. Aerodynamics, strength and fatigue lifetime calculations. Constructing works, CAD simulation and drawing. Safety, operation, and working safety.
Goals and objectives of the course in terms of competences and skills	During Diploma Project implementation knowledge and practical skills on the following matters should be obtained: 1. Formulation of technical and technological problems. 2. Mechanics, aerodynamics, structural strength analyses. 3. CAD. 4. Computer simulation of an object of engineering . 5. Presentation preparation.
Recommended literature	Literatūras pamatsaraksts (papildliteratūra tiek rekomendēta darba uzdevumos atkarībā no projekta temata): 1) Airplane Design. 9 Volumes. DAR Corporation, 2003-2007. 2) Airframe and Powerplant Mechanics. Airframe Handbook. US Department of Transportation. Federal Aviation Administration. New Delhi: Himalayan Books. 1994. 630p. 3) Maltbaek J.C. Essential Engineering Dynamics. Crosby Lockwood Staples. London.1998. 4) J. Rudņevs. Mašīnu un mehānismu teorija. Zobratu un izciļņu mehānismi. –Rīga, RTU, 1994. - 75 lpp. 5) J. Rudņevs, E. Balcers, J. Mazais, G. Tribis. Mašīnu un mehānismu teorija. Darbmašīnas ģeometrisko, kinemātisko un dinamisko parametru aprēķina piemēri. –Rīga, RTU, 1994. -55 lpp. 6) V.Pavelko. Aviācijas konstrukciju mehānika // Lekciju konspekts. - Rīga, RTU, 2003.- 69 lpp. 7) Foundations of Aerodynamics: Basis of Aerodynamic Design, 5/e Arnold M. Kuethe and Chung-Yen Chow John Wiley & Sons, Inc., 1997 ISBN 1-12919-4, 572 pages 8) Aerodynamics, Aeronautics, and Flight Mechanics, 2/e Barnes W. McCormick// John Wiley & Sons, Inc., 1995 ISBN 0-471-57506-2 672 pages 9) Pavelko V. Materiālu pretestība: 1.un 2.daļa. Rīga: RAU, 1999. 10) Pavelko V. Gaisakuģu aerodināmika. RTU, 2009.-255 lpp.

Learning outcomes and assessment

Learning outcomes	Assessment methods
Be able to analyze technical problem and formulate its solution task.	Review and evaluation of the project.
Be able to reasonably choose parameters of the mechanical device.	Project referring and estimation by commission
Be able to perform designing works and prepare technical documentation	Project referring and estimation by commission

Study subject structure

Part	CP	ECTS	Hours per Week			Tests		
			Lectures	Practical	Lab.	Test	Exam	Work
1.	12.0	18.0	0.0	0.0	0.0			*