



RTU Course "Heat Technics and Thermodynamics"

15E01 Aeronautikas tehnoloģiju katedra

General data

Code	TAD325
Course title	Heat Technics and Thermodynamics
Course status in the programme	Compulsory/Courses of Limited Choice
Course level	Undergraduate Studies
Course type	Professional
Field of study	Transport
Responsible instructor	Ozoliņš Ilmārs
Volume of the course: parts and credits points	1 part, 2.0 Credit Points, 3.0 ECTS credits
Language of instruction	LV, RU
Possibility of distance learning	Not planned
Abstract	Regularities of changes of gas stream parameters. Different aspects of influences on a gas stream. Fundamentals of the heat transfer theory.
Goals and objectives of the course in terms of competences and skills	To learn regularities of the air/gas parameters, the gas flow parameters determination for the gas turbine engine at various sections, heat transfer regularities.
Structure and tasks of independent studies	Work with literature and internet. Air/gas parameters determination for gas turbine engine at various sections. Performance and registration of homeworks.
Recommended literature	1. J.Lemba. Tehniskā termodinamika. Rīga, 1995. 2. М. Будинаускас. Основы термодинамики и теплопередачи авиационных двигателей. -М., Машиностроение, 1987.
Course prerequisites	In physics, mathematics.

Course outline

Theme	Hours
Exposition of a gas stream by the equation set.	6
Measurement of the gas stream parameters. The principle of action reversion.	6
Flows in the convergent and divergent channels.	6
Modern software use in thermotechnics and thermodynamics problems.	6
Heat conduction.	4
Convection.	2
Radiation.	2

Learning outcomes and assessment

Learning outcomes	Assessment methods
A student knows gas flow parameters and is capable to calculate them.	Home work, test, exam.
A student knows gas flow features in convergent and divergent channels.	Test, exam.
A student is able of calculating gas flow parameters in the convergent and divergent channels.	Test, exam.
A student is capable of analysing heat transfer regularities.	Test, exam.
A student is capable of using modern software to solve gas flow parameters and heat transfer problems.	Home work, exam.

Study subject structure

Part	CP	ECTS	Hours per Week			Tests		
			Lectures	Practical	Lab.	Test	Exam	Work
1.	2.0	3.0	1.0	0.5	0.5		*	