



RTU Course "The Aircraft Navigation and Pilotage Complex"

15E02 Avionikas katedra

General data

Code	TAA419
Course title	The Aircraft Navigation and Pilotage Complex
Course status in the programme	Compulsory/Courses of Limited Choice
Course level	Undergraduate Studies
Course type	Professional
Field of study	Transport
Responsible instructor	Trifonovs-Bogdanovs Pjotrs
Academic staff	Trifonova-Bogdanova Tatjana
Volume of the course: parts and credits points	1 part, 3.0 Credit Points, 4.5 ECTS credits
Language of instruction	LV, RU, DE
Possibility of distance learning	Not planned
Abstract	Aviation facilities in complex composition. On board complex functional scheme. Operating modes. Complex system of organization charts. Operating principles and characteristics.
Goals and objectives of the course in terms of competences and skills	To learn aerobatics and navigation of complex design and operating principles. Acquire theoretical knowledge of the aviation complex classification and operating. Acquire the skills to analyze the complex aviation operations in different circumstances.
Structure and tasks of independent studies	Independently prepare reports on the topic - different aircraft aerobatics and navigation complex structure scheme. Operating modes. Structural blocks of the design. Error analysis. Working with the professional literature. Lesson in the Aviation Institute's specialized lecture hall.
Recommended literature	1. Moir I., Seabridge A. Civil Avionics Systems. Wiley-Blackwell. 2006. 396 lpp. 2. О.Бабич. Обработка информации в навигационных комплексах. Москва. Машиностроение. 1992 г. 512 стр. 3. P. Trifonov-Bogdanovs. Žiroskopiskās pilotāžas ierīces. RTU. Rīga, 2002 g. 64 lpp. 4. П. Трифонов-Богданов. Инерциальные навигационные системы полуавтоматического типа. РАУ. 1998 г. 107 стр.
Course prerequisites	Physics, Mathematics.

Course outline

Theme	Hours
Structure and functioning of the flight complex.	6
Speed and altitude control.	4
Heading system as a part of the complex.	5
Inertial navigation systems. Operational algorithms.	6
Structure scheme of the inertial navigation system.	4
Basic elements of inertial navigation systems.	6
Automatic control system as a part of the complex.	5
Instrument warning system.	5
Architecture and functioning of the navigation complex.	7

Learning outcomes and assessment

Learning outcomes	Assessment methods
The student understands the aerobatics and navigation package design principles.	Lab. works: Aircraft, aerobatics and navigation structure of the complex scheme. Exam.
The student knows the aerobatics and navigation tasks in the complex components, characteristics and errors.	Lab. works: Aircraft, aerobatics and navigation of the complex activity. Exam.
The student is able to analyze aerobatics and the navigation function of the complex under different conditions.	Individual work, seminars. Exam.
The student is able to analyze aerobatics and navigation errors of the complex.	Individual work, seminars. Exam.

Study subject structure

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