



## RĪGAS TEHNISKĀ UNIVERSITĀTE

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### Study programme "Aviation Transport"

#### Main attributes

Title	Aviation Transport
Identification code	MGA0
Education classification code	47525
Level and type	Professional Master (Second Cycle) Studies
Higher education study field	Mechanics and Metal Processing, Heat Power Engineering, Heat Technology, and Mechanical Engineering
Head of the study field	Marina Čerpinska
Department responsible	Faculty of Mechanical Engineering, Transport and Aeronautics
Head of the study programme	Ilmārs Blumbergs
Professional classification code	2144-44; 2152-08
The type of study programme	Full time
Language	Latvian, English
Accreditation	29.05.2013 - 01.07.2023; Accreditation certificate No 2020/43
Variant 1	
Volume (credit points)	80.0
Duration of studies (years)	Full time studies - 2,0
Degree or/and qualification to be obtained	Professional Master Degree in Aviation Transport
Qualification level to be obtained	The 7th level of European Qualifications Framework (EQF) and Latvian Qualifications Framework (LQF)
Programme prerequisites	Professional Bachelor Degree in Aviation Transport and /or 5th Level Professional Qualification in Aviation Transport
Variant 2	
Volume (credit points)	121.0
Duration of studies (years)	Full time studies - 3,0
Degree or/and qualification to be obtained	Professional Master Degree in Aviation Transport and Qualification of Mechanical Engineer in Transport Aircraft Technical Maintenance or Avionics Engineer in Transport Aircraft Technical Maintenance
Qualification level to be obtained	The 7th level of European Qualifications Framework (EQF) and Latvian Qualifications Framework (LQF); the 7th level of professional qualification
Programme prerequisites	Bachelor Degree of Engineering Science in Mechanical Engineering (for studies majoring in Aviation Transport) or Electrical Engineering (for studies majoring in Avionics)

#### Description

Abstract	Professional Master study programme "Air Transport" provides the level of knowledge that complies with the requirements related to performing certain responsibilities defined by the professional standard, International Civil Aviation Organization (ICAO) and European Commission Regulation No 2042/2003. The scope and content of the study programme complies with the requirements defined by the European Aviation Safety Agency (EASA), Civil Aviation Agency (CAA) of the Republic of Latvia, Ministry of Education and Science of the Republic of Latvia and with the professional standard: Aircraft Maintenance Mechanical Engineer (code of profession – PS0364) or Aircraft Maintenance Avionics Engineer (code of profession – PS0365).
Aim	The goal of the study program is to provide the education required for the specialists of the air transport field, who would promote the renovation and maintenance of air transport field infrastructure, execution of works related to the maintenance of aircraft mechanisms and avionic systems, analysis and design of systems operation. Having completed the studies students will have acquired knowledge, skills and competence necessary to an air transport systems engineer to adapt to the labour market and continue studies for a Doctoral Degree.
Tasks	The study programme comprises lectures on fundamental subjects, field theoretical and specialized subjects; practical classes on the operating principles, design and maintenance of aeronautical equipment. The acquired knowledge has to be applied during practical placement (outside the educational institution) for solving practical problems. Students' practical and theoretical knowledge and research skills acquired through the study program are used when writing a Master Paper with a Design project.

Learning outcomes	<p>Knowledge (knowledge and understanding)  Students can demonstrate in-depth, extended knowledge and understanding in the field of air transport. Students acquire information on the latest discoveries in aviation science. The knowledge acquired through the study program "Air Transport" provides the basis for creative thinking and involvement in scientific research activity.</p> <p>Skills (ability to use knowledge, communication, general skills)  Students can independently use theory methods and problem solving skills to carry out scientific research in the field of air transport and perform highly skilled, professional functions.  Students can reasonably explain and discuss complex or systematic, scientific or professional aspects of aircraft maintenance both with professionals and non-professionals.  Students can independently direct the development and specialization of their competences and assume responsibility for the results and analysis of personnel's team work.  Students can conduct business activity, introduce innovations in the field of air transport systems, conduct a study or learn in difficult and unpredictable conditions and, if necessary, change these conditions by applying new approaches.</p> <p>Competence (analysis, synthesis and evaluation)  Students can independently:  -formulate and critically analyse complex scientific and professional problems related to the branch of air transport.  -substantiate decisions and, if necessary, carry out additional analysis.  Students can integrate knowledge from different fields and make contribution to the creation of new knowledge.  They can promote the development of scientific research methods in the field of air transport systems, demonstrate understanding of and responsibility for the possible effect of scientific results or professional activity on the environment and society.</p>
Final/state examination procedure, assessment	<p>After successful completion of the Master's study program a student develops a Master Paper which has to be defended at the meeting of the State Examination Board; as a result a student is awarded a professional Master Degree in air transport or a professional Master Degree in air transport and a qualification of an aircraft maintenance mechanical engineer or avionics engineer.</p>
Description of the future employment	<p>Aviation specialists have a wide range of labour market opportunities: aircraft maintenance engineers at airports, design engineers in companies that manufacture aircraft and aviation systems, engineers in aviation repair companies, researchers in research centres, specialists in air transport logistics in logistic companies, etc.  They can also carry out analytical and managing work in companies as well as scientific research activity.</p>
Special enrollment requirements	<p>Second level higher professional education or a Bachelor degree and/or fifth level qualification in aviation transport or an equivalent degree and/or qualification, or a Bachelor degree of engineering science (for the speciality in air transport mechanical engineer) or electrosience (for the speciality of air transport avionics engineer) or equivalent degrees are required.</p>
Opportunity to continue studies	<p>It is possible to continue education to obtain a degree of Doctor Engineering Science.</p>

**Courses**

No	Code	Name	C.p. [1]	C.p. [2]
<b>A</b>		<b>Compulsory Study Courses</b>	<b>10.0</b>	<b>17.0</b>
1	<a href="#">TAE501</a>	Standardization, Certification and Licensing in Air Transport	2.0	2.0
2	<a href="#">TAA404</a>	Aviation Devices and Systems	2.0	2.0
3	<a href="#">TAL442</a>	Dynamics of Flight	3.0	3.0
4	<a href="#">TAK515</a>	Analysis of Aviation Transport Reliability	3.0	3.0
5	<a href="#">AVI700</a>	Digital Techniques Electronic Instrument Systems		3.0
6	<a href="#">TAA531</a>	Global Satellite Navigation Systems		2.0
7	<a href="#">TAE550</a>	Aircraft and Electronic Equipments Maintenance (Study Project)		2.0
<b>B</b>		<b>Compulsory Elective Study Courses</b>	<b>36.0</b>	<b>44.0</b>
<b>B1</b>		<b>Field-Specific Study Courses</b>	<b>34.0</b>	<b>42.0</b>
		<i>Aviation transport</i>	<i>34.0</i>	<i>42.0</i>
1	<a href="#">TAS508</a>	Experimental Methods in Mechanics	2.0	2.0
2	<a href="#">TAK511</a>	Computer Methods for Test Planning and Data Processing	2.0	2.0
3	<a href="#">TAS503</a>	Theory of Elasticity	2.0	2.0
4	<a href="#">TAD545</a>	Finite Element Method and its Applications	2.0	2.0
5	<a href="#">TAK512</a>	Mechanics and Strength of Composite Materials	2.0	2.0
6	<a href="#">TAS505</a>	Structures Dynamics	2.0	2.0
7	<a href="#">TRR520</a>	Laser Technology in Production and Repair of Vehicles	2.0	2.0
8	<a href="#">TAE503</a>	Theoretical Fundamentals of Flight Safety	2.0	2.0
9	<a href="#">TAS515</a>	Applied Continuum Theory	3.0	3.0
10	<a href="#">TAK513</a>	Markov Processes and Preventive Maintenance Models	2.0	2.0
11	<a href="#">TAS502</a>	Design Automation of Machines	2.0	2.0
12	<a href="#">TAS511</a>	Parametric Modelling of Mechanical Objects	2.0	2.0
13	<a href="#">TAK526</a>	Structure Peculiarities of Modern Aircraft	2.0	2.0
14	<a href="#">TAS504</a>	Fracture Mechanics	2.0	2.0
15	<a href="#">TAS507</a>	Calculation Methods in Mechanics	2.0	2.0
16	<a href="#">TAE505</a>	Transport logistics	2.0	2.0
17	<a href="#">TAE544</a>	Aircraft and Systems Reliability Strategy	2.0	2.0
18	<a href="#">TAD544</a>	Mathematical Simulation of the Heat Engine Characteristics	2.0	2.0
19	<a href="#">TAE509</a>	Aircraft Maintenance and its Technical Management	3.0	3.0
20	<a href="#">TAS517</a>	The Nondestructive Methods of Monitoring of Aviation Construction	3.0	3.0
21	<a href="#">TAS514</a>	CALS Technologies in Vehicle Engineering	2.0	2.0
22	<a href="#">TAE700</a>	Air Accident Investigation	2.0	2.0
23	<a href="#">TAE529</a>	Transport Ecology	3.0	3.0
24	<a href="#">TAE507</a>	Aviation Legislation and International Rules of Flights		2.0
25	<a href="#">TAE515</a>	Engineering diagnostics of an aircraft		3.0
26	<a href="#">TAK230</a>	Aviation Technical English		2.0
27	<a href="#">TAE221</a>	Economics of Aviation Transport		2.0
28	<a href="#">TAE315</a>	Human Factor		2.0
29	<a href="#">TAD521</a>	Civil Aviation Engines		3.0
30	<a href="#">TAK502</a>	Civil Aviation Aircraft		3.0
31	<a href="#">TAE513</a>	Ergonomics and labour protection at the aviation transport		2.0
32	<a href="#">TAE314</a>	Safety of Aircraft Flights		2.0
33	<a href="#">TAA515</a>	Aircraft Aviation and Radioelectronic Equipment		3.0
34	<a href="#">TAE203</a>	Organization and Ensuring of Aircraft Operation		2.0
35	<a href="#">TAE431</a>	Technical Operation of Aircraft and Engines	3.0	3.0
36	<a href="#">TAA311</a>	Microprocessor Aviation Technologies	2.0	2.0
37	<a href="#">TAE209</a>	Propeller	2.0	2.0
		<i>Avionics</i>	<i>34.0</i>	
1	<a href="#">TAA527</a>	Special Electrical Machines of Aviation Automatics	2.0	2.0
2	<a href="#">TAA526</a>	Analysis and Synthesis of Aviation Electrical Machines	2.0	2.0
3	<a href="#">TAA528</a>	Dynamics and Errors of an Aviation Electric Drive	2.0	2.0
4	<a href="#">TAA532</a>	Communication Infrastructure of Aviation	2.0	2.0
5	<a href="#">TAA533</a>	Avionic Systems	3.0	3.0
6	<a href="#">TAA534</a>	Methods and Means of Diagnostics of Aircraft Electrical Systems	3.0	3.0
7	<a href="#">TAA529</a>	Analysis and Synthesis of Aircraft Power Supply System	2.0	2.0
8	<a href="#">TAA406</a>	Automatic Control Systems of Aircraft	2.0	2.0
9	<a href="#">TAA523</a>	Structure Optimization of Aircraft Navigation Complexes	3.0	3.0

10	<a href="#">TAA508</a>	Navigation and Fly Complexes of Aircraft	2.0	2.0
11	<a href="#">TAA537</a>	Aircraft Pilotage Complex and Flight Management Systems	3.0	3.0
12	<a href="#">TAA310</a>	Radio Eelectronic Eequipment of Aircraft	2.0	2.0
13	<a href="#">TAA521</a>	Methods and Systems of Radio Navigation of Aircraft	2.0	2.0
14	<a href="#">TAA535</a>	Modern Technologies of Fiber-Optical Networks in Aviation	2.0	2.0
15	<a href="#">TAA513</a>	Organization, Planning and Management of the Technological Processes	4.0	4.0
16	<a href="#">TAA541</a>	Aircraft Computers and Computer Systems	2.0	2.0
17	<a href="#">TAA540</a>	Analysis of the System Structure of the Avionics Equipment Automatic Flight Control	2.0	2.0
18	<a href="#">TAA542</a>	Digital Signals Processing in Avionics Equipment	3.0	3.0
19	<a href="#">TAA710</a>	Aviation Electronic Device Design and Modelling	2.0	2.0
20	<a href="#">TAA703</a>	Elements and Components of Microwave Technology in Aviation	3.0	3.0
21	<a href="#">TAK222</a>	Aircraft Aerodynamics, Structures and Systems		3.0
22	<a href="#">TAD213</a>	Propulsion		2.0
23	<a href="#">TAA212</a>	Electrical Power Supply Systems of Aircraft		2.0
24	<a href="#">TAA211</a>	Aircraft Electrical Systems		3.0
25	<a href="#">TAA311</a>	Microprocessor Aviation Technologies		2.0
<b>B5</b>		<b>Pedagogical and Psychological Sciences Study Courses</b>	<b>2.0</b>	<b>2.0</b>
1	<a href="#">HSP484</a>	Psychology	2.0	2.0
2	<a href="#">HSP446</a>	Pedagogy	2.0	2.0
<b>C</b>		<b>Free Elective Study Courses</b>	<b>8.0</b>	
<b>D</b>		<b>Practical Placement</b>	<b>6.0</b>	<b>32.0</b>
1	<a href="#">TAE010</a>	Practical Placement	6.0	32.0
2	<a href="#">TAA010</a>	Practical Placement	6.0	32.0
<b>E</b>		<b>Final Examination</b>	<b>20.0</b>	<b>28.0</b>
1	<a href="#">TAE002</a>	Master Thesis	20.0	
2	<a href="#">TAA002</a>	Master Thesis	20.0	
3	<a href="#">TAS002</a>	Master Thesis	20.0	
4	<a href="#">TAE704</a>	Master Thesis Including Project		28.0

*K.p.[\*] kredītpunkti studiju programmas variantā*