Estonian Aviation Academy

SYLLABUS

I. GENERAL DATA ON SUBJECT COURSE	
CODE AND NAME OF SUBJECT (in Estonian and English)	ATS.051 ***Basics of Air Traffic Management*** Lennuliikluse korraldamine
ACADEMIC YEAR, TERM, FORM OF STUDIES	2018/2019 autumn and spring term, full-time
CURRICULUM, SPECIALITY AND MODULE WHERE THE SUBJECT BELONGS TO	Erasmus
SCOPE OF SUBJECT (ECTS)	3
FORM OF CONTROL	Non-graded
WORKLOAD AND FORMAT OF STUDIES	78 academic hours, e-learning
LANGUAGE OF INSTRUCTION	English
ADDITIONAL INFORMATION (prerequisite subject courses, restrictions on participating in the course, etc)	-
LECTURER	Kristjan Kõrgesaar

II. THE GOAL, LEARNING OUTCOMES AND DESCRIPTION OF SUBJECT COURSE	
GOAL OF SUBJECT COURSE	After passing this course, the participant understands the principles of ATM
LEARNING OUTCOMES	1. The participant is familiar with the terminology used in aviation; 2. recognizes the structure of aviation; 3. is able to describe different areas of ATM; 4. has an understanding of the different factors affecting ATM.
SUBJECT COURSE DESCRIPTION	This is an e-learning course

III. GRADING SYSTEM AND CRITERIA	
PREREQUISITES TO BE ALLOWED TO TAKE EXAMINATION/PRELIMINARY EXAMINATION	No
FORMATION OF EXAMINATION MARK/OF PRELIMINARY EXAM	Self-study computer tests(4), participation in 1 seminar, essay(1000 words)
OPPORTUNITIES FOR SETTLING ARREARS	No
GRADING SYSTEM	RESPECTIVE MARKING CRITERIA SYSTEMATIC ASSESSMENT DURING THE COURSE, 51% OUT OF 100% IS A PASS
SELF-TESTING	Each test equals 10 % of the final score
SEMINAR	Participation equals 10 % of the final score
ESSAY (evaluated separately, in case of obvious fraud or severe misunderstanding, new essay may be required)	50% of the final score

IV. TIMETABLE AND LIST OF TOPICS

WEEK OF TERM	WORK FORMAT	TOPICS
1,2	e-learning	Global framework
3	e-learning	Aeronautical Information Services
4	e-learning	Meteorology
5	e-learning	Communications
6	e-learning	Search and Rescue
7	e-learning	Air Traffic Control
8	e-learning	Air Traffic Control
9	e-learning	Airports
10	e-learning	Future
11	Seminar	Case study
12,13	Self –study	Essay

V. LEARNING MATERIALS

Compulsory materials:

e-learning course at www.eava.ee/mdle2

Additional materials recommended:

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I. GENERAL DATA ON SUBJECT COURSE	
CODE AND TITLE OF SUBJECT COURSE (in Estonian and English)	Sissejuhtatus mehitamata õhusõidukiga süsteemidesse *(RPAS)* *Introduction to Remotely Piloted Aircraft Systems (RPAS)* TECH.078
ACADEMIC YEAR, TERM, FORM OF STUDIES	2018/2019, spring, full-time
CURRICULUM, SPECIALITY AND MODULE WHERE THE SUBJECT BELONGS TO	Module of Remotely Piloted Aircraft
VOLUME OF SUBJECT (ECTS)	3 ECTS
FORM OF CONTROL	Non-graded assessment
WORKLOAD AND FORMAT OF STUDIES	Contact hours: 39 hrs, independent work: 39 hrs, practical training: 0 hrs
LANGUAGE OF INSTRUCTION	English
ADDITIONAL INFORMATION (prerequisites for admission to course, restrictions on participating in the course, etc)	-
LECTURER	Andres Moks

II. THE GOAL, LEARNING OUTCOMES AND ABSTRACT OF SUBJECT COURSE	
GOAL OF SUBJECT COURSE	To give an overview of the usage of different unmanned aerial vehicles. To introduce generic principles of remotely piloted aircraft and its subsystem design
LEARNING OUTCOMES	Student who has passed the subject knows: 1) Correct terms and vocabulary of RPAS; 2) different unmanned aerial vehicles and configurations; 3) components and systems of RPAS; 4) how to design a basic multicopter; 5) laws and rules with reference to RPAS; 6) how to avoid threats and hazards while operating UAV-s
ABSTRACT OF SUBJECT COURSE	Overview of commonly used unmanned aerial vehicles, systems and components, configurations and constructions, basic design solutions, legislation and safety

III. GRADING SYSTEM AND CRITERIA	
PREREQUISITES TO BE ALLOWED TO TAKE EXAMINATION / PRELIMINARY EXAMINATION	75% participation is required

FORMATION OF EXAMINATION / PRELIMINARY EXAM MARK	Final task forms 100%. Final task is to build and test multirotor RPAS which will be assessed
OPPORTUNITIES FOR SETTLING ARREARS	A failed subject must be redone in next academic year

IV. TIMETABLE AND LIST OF TOPICS

HOURS	TOPICS
1. meeting 3 hrs	Introduction to Unmanned Aerial Vehicles; Overview of UAVs, design, constructions, classification, applications.
2. meeting 3 hrs	Law and rules; Legislation of UAVs in Estonia and the EU.
3. meeting 5 hrs	Components; Overview of components which are necessary for RPAS. Components required for the operation of a small and simple multirotor RPAS.
4. meeting 5 hrs	Components (4h); Overview of components which are necessary for RPAS. Components required for the operation of a small and simple multirotor RPAS; Design (1h), Basic design principles for a typical multirotor RPAS.
5. meeting 5 hrs	Design (5h); Basic design principles for a typical multirotor RPAS.
6. meeting 4 hrs	Design (4h); Basic design principles for a typical multirotor RPAS.
7. meeting 5 hrs	Software (5h); Overview and setup of the software used in autopilots and in ground control stations.
8. meeting 5 hrs	Software adjustment (4h); Exercise preparations (1h).
9. meeting 4 hrs	Final exercise.

V. LEARNING MATERIALS

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I. GENERAL DATA ON SUBJECT COURSE	
CODE AND NAME OF SUBJECT (in Estonian and English)	**Remotely Piloted Aircraft (RPA) Operation and Mission Planning**
FORM OF STUDIES	daytime studies
CURRICULUM, SPECIALITY AND MODULE WHERE THE SUBJECT BELONGS TO	Module of Remotely Piloted Aircraft
SCOPE OF SUBJECT	2 ECTS
FORM OF CONTROL	Non - differentiative
WORKLOAD AND FORMAT OF STUDIES	Class studies – 23 hrs, practical training – 3 hrs, independent work - 26 hrs
LANGUAGE OF INSTRUCTION	English
ADDITIONAL INFORMATION (prerequisite subject courses, restrictions on participating in the course, etc)	Limited to 16 students
LECTURER	Tõnis Jürimäe, Andres Moks, Alisa Lepik

II. THE GOAL, LEARNING OUTCOMES AND DESCRIPTION OF SUBJECT COURSE	
GOAL	The objective of the subject is to provide the students with the basic knowledge and practical experience of the remotely piloted aircraft operations in accordance with the rules of modern aviation
LEARNING OUTCOMES	The student having covered the subject course knows and can apply aspects and procedures have to be followed then operating remotely piloted aircraft

III. GRADING SYSTEM AND CRITERIA	
PREREQUISITES TO BE ALLOWED TO TAKE EXAMINATION/PRELIMINARY EXAMINATION	50 % participation is required Passed preliminary test
FORMATION OF EXAMINATION MARK/OF PRELIMINARY EXAM	Practical flight examination

OPPORTUNITIES FOR SETTLING ARREARS	The examination can be retaken with in arrangement with the lecturers

IV. TIMETABLE AND LIST OF TOPICS		
HOURS	**TOPICS**	**LECTURER**
1. meeting 3h	Ethics and Human Factors Air Law and Airspace Management	Tõnis Jürimäe
2. meeting 2h	Aircraft Operations and Emergencies	Tõnis Jürimäe
3. meeting 3h	NOTAM and Aeronautical Information Publication	Tõnis Jürimäe
4. meeting 3h	Principles of Flight	Tõnis Jürimäe
5. meeting 3h	Aircraft Technical Systems	Andres Moks
6. meeting 2h	Aircraft Technical Systems	Andres Moks
7. meeting 2h	Meteorology	Alisa Lepik
8. meeting 3h	Risk Assessment and Mitigation	Tõnis Jürimäe
9. meeting 2h	Workshop	Tõnis Jürimäe
10. meeting 3h	Practical flight aspects	Andres Moks
11. meeting 3h	Practical flight aspects	Andres Moks
12. meeting 3h	Practical flight aspects	Andres Moks

V. LEARNING MATERIALS

Compulsory materials::

1) Lecture handouts

Additional materials recommended:

1) Book by Tõnis Jürimäe
2) EASA unmanned aircraft regulation draft