

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Use of airships		Code 1010601131010633505
Field of study Mechanical Engineering	Profile of study (general academic, practical) (brak)	Year /Semester 2 / 3
Elective path/specialty Aircraft Engines	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: Second-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 1 Classes: - Laboratory: 1 Project/seminars: -		No. of credits 2
Status of the course in the study program (Basic, major, other) (brak)		(university-wide, from another field) (brak)
Education areas and fields of science and art technical sciences		ECTS distribution (number and %) 2 100%
Responsible for subject / lecturer: dr inż. Mateusz Grzelczak email: mateusz.grzelczak@put.poznan.pl tel. (061) 665 2344 Faculty of Working Machines and Transportation ul. Piotrowo 3; 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Basic knowledge of mechanics, construction drives air, metrology, strength of materials, thermodynamics engines.
2	Skills	Able to apply the scientific method to solve problems, implement experiments and reasoning
3	Social competencies	He knows the limitations of their knowledge and skills, is able to accurately formulate questions, understands the need for further education
Assumptions and objectives of the course: - Familiarize students with the operation of aircraft (airframe and powerplants). Knowledge of currently used operating systems and diagnose enhancing operational safety of aircraft.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. Has an extended knowledge of the life cycle of machines, operating principles of working machines and destructive processes taking place during the operation, such as tribological wear, corrosion, fatigue and surface aging. - [K2A_W13]		
2. Has an in-depth knowledge of the design and principles of operation and grading machines from the equipment of the chosen group. - [K2A_W18]		
Skills:		
1. Is able to freely use an international language in contacts with professionals from the same field of study. - [K2A_U01]		
2. Is able to develop an operation technology of a selected, complex machine. - [K2A_U11]		
Social competencies:		
1. Is able to think and act in an entrepreneurial manner. - [K2A_K05]		
2. Is aware of and understands the importance and impact of non-technical aspects of mechanical engineering activities and its impact on the environment, is aware of responsibility for decisions. - [K2A_K02]		
3. Is able to set priorities for realization of undertaken tasks. - [K2A_K04]		
Assessment methods of study outcomes		
- The written test		
Course description		

- Concepts associated with probability and reliability. The probability of working in the state of airworthiness. The operation of the aircraft. Aircraft maintenance in practice. The influence of various factors on the consumption of the drive unit. Problems of evaluation of technical reliability and service life of the aircraft. Technical service and repair manual drive units. Operational factors flight safety. Safety of aircraft on the background of aviation law and regulatory requirements.

Basic bibliography:

1. Kamiński J., Eksploatacja samolotów i śmigłowców. Cz. II., Wyd. WAT. Warszawa 1997r.
2. Balicki W., Szczeciński S., Diagnostowanie lotniczych silników lotniczych, Wyd. Biblioteka Naukowa Instytut Lotnictwa, Warszawa 2001r.
3. Boliński B., Stelmazczyk Z., Eksploatacja silników turbinowych, Wyd. Komunikacji i Łączności, Warszawa 1981r.
4. Lewitowicz J., Podstawy eksploatacji statków powietrznych, Wyd. ITWL, Warszawa 2006r.

Additional bibliography:

Result of average student's workload

Activity	Time (working hours)	
1. Preparing to pass	7	
2. Participation in completing	3	
3. Preparation for laboratory exercises	8	
4. Preparing to pass laboratory	4	
5. Participation in completing laboratory exercises	1	
6. Participation in lectures	15	
7. Laboratory classes	15	
8. Consultation	1	
9. Fixation content of the exercises	8	
Student's workload		
Source of workload	hours	ECTS
Total workload	62	2
Contact hours	35	1
Practical activities	37	1