COURSE DESCRIPTION CARD - SYLLABUS

Course name
Human Performance and Limitations 2

Course

Field of study
Aerospace Engineering

Year/Semester
2/3

Area of study (specialization)

Profile of study
general academic

Level of study
First-cycle studies

Course offered in
polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
15

Laboratory classes

Other (e.g. online)

Tutorials
15

Projects/seminars

Number of credit points

1

Lecturers

Responsible for the course/lecturer:
dr n. med. Karol Szymański

Wydział Inżynierii Środowiska i Energetyki

email: rofe@tlen.pl

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Responsible for the course/lecturer:
dr hab. inż. Agnieszka Wróblewska, prof.PP

Wydział Inżynierii Środowiska i Energetyki

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Prerequisites

A student starting this subject should have a basic knowledge of general and aviation psychology, the nature and functioning of human cognitive, emotional and motivational processes. He should also have the ability to apply the scientific method in solving problems and be ready to cooperate within a team.

Course objective

To acquaint the student with the emotional and motivational processes of man functioning in normal, difficult and extreme situations. Basic human cognitive processes - perception and attention and their importance in the process of information management in the human - technical object system. The dynamics of small social groups and its application in the process of constructing effective task teams in aviation. Crew / team resource management (CRM).

Course-related learning outcomes

Knowledge

1. has detailed knowledge related to selected issues in the field of human capabilities and limitations when operating an aircraft in flight, its impact on health and the ability to perform air operations, as well as opportunities to improve physical condition.

2. has basic knowledge of technical vocabulary, in particular specialized terminology used in the fields of science and technology related to aviation engineering.

3. has basic knowledge necessary to understand profile subjects and knowledge in the field of society and the environment in the field of aviation engineering for selected specialties:

1. Piloting of aircraft

2. Aero engines and airframes.

Skills

1. knows how to use a language to a degree enabling understanding of technical texts in the field of aviation (knowledge of technical terminology).

2. is able to communicate using various techniques in a professional environment and other environments using the formal record of construction, technical drawing, concepts and definitions of the scope of the studied field of study.

3. can obtain information from literature, the Internet, databases and other sources. Is able to integrate obtained information, interpret and draw conclusions from them.

Social competences

1. is aware of the importance of maintaining the principles of professional ethics.

2. is aware of the importance and understands the non-technical aspects and effects of engineering activities, including its impact on the environment, and the associated responsibility for the decisions taken.

3. Understands the need for critical assessment of knowledge and continuous learning.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture:

- assessment of knowledge and skills demonstrated on the written test - 1.5 hour exam

Exercises:

- knowledge acquired during the exercises is verified by two 45-minute colloquia carried out during 3 and 7 classes

Programme content

Lecture:

Basics of flight physiology. Respiratory and circulatory system. Hypertension and hypotension. Coronary artery disease. Hypoxia. Hyperventilation. Decompression sickness/illness. High-altitude environment. People and the environment: the sensory system. Problem areas for pilots.

Exercises:

Radiation. Humidity. The different senses. Central, peripheral and autonomic nervous system. Vision. Hearing. Equilibrium. Health and hygiene.

Teaching methods

1. Lecture: multimedia presentation, illustrated with examples given on the board.

2. Exercises: examples given on the board and performance of tasks given by the teacher - practical exercises.

Bibliography

Basic

1. Szajnar S.: „Czynnik ludzki w obsłudze urządzeń technicznych”, Skrypt WAT, Warszawa 2010.

2. Janowska Z.: „Zarządzanie zasobami ludzkimi”, Polskie Wydawnictwo Ekonomiczne, 2010

3. Scott W. E., Cummings L. L.: “Zachowanie człowieka w organizacji”, Państwowe Wydawnictwo Naukowe, 1983

4. www.faa.gov

5. www.easa.europa.eu

Additional

Breakdown of average student's workload

	Hours	ECTS
Total workload	30	1,0
Classes requiring direct contact with the teacher	30	1,0
Student's own work (literature studies, preparation for written tests)[1]		

[1] delete or add other activities as appropriate