COURSE DESCRIPTION CARD - SYLLABUS

Course name
Human Performance and Limitations 3

Course

Field of study
Aviation and astronautics

Year/Semester
2/3-4; 3/5

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
45

Laboratory classes

Other (e.g. online)

Tutorials

Projects/seminars

Number of credit points

3

Lecturers

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

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Responsible for the course/lecturer:

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 restrictions when operating an aircraft in flight, as well as the capabilities and limitations of the air ambulance system

2. has expanded knowledge necessary to understand profile subjects and specialist knowledge about construction, methods of construction, manufacture, operation, air traffic management, security systems, impact on the economy, society and the environment in the field of aviation and space science for selected specialties:

1. Piloting of aircraft

2. Aero engines and airframe components

3. Aviation security and management

4. Air transport

3. has basic knowledge necessary to understand social, economic, legal and other non-technical conditions of engineering activities

Skills

1. knows how to use native and international languages to the extent that it is possible to understand technical texts and to write using technical dictionaries machine descriptions in the field of aviation and astronautics (knowledge of technical terminology)

2. is able to obtain information from literature, the Internet, databases and other sources. Is able to integrate the information obtained, interpret and draw conclusions from them as well as create and justify opinions

Social competences

1. understands the need for lifelong learning; can inspire and organize the learning process of others

2. can interact and work in a group, taking on different roles in it

3. is able to properly set priorities for the implementation of the task specified by him or others

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

Programme content

Lecture:

semester 3:

Human factors in aviation. Flight safety concepts. Threat and error management (TEM) model and SHELL model. Safety culture and safety management. Fatigue and stress management.

semester 4:

Basic aviation psychology. Human information processing. Attention and vigilance. Perception. Memory. Integration of sensory inputs. Body rhythm and sleep. Response selection. Motivation. Individual differences in personality and motivation. Human overload and underload. Arousal.

semester 5:

Human error and reliability. Reliability of human behaviour. Theory and model of human error. Error generation. Decision-making concepts. Avoiding and managing errors: cockpit management. Safety awareness. Coordination (multi-crew concepts). Human behaviour. Advanced cockpit automation.

Teaching methods

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

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	76	3,0
Classes requiring direct contact with the teacher	56	2,2
Student's own work (literature studies, preparation for written tests)[1]	20	0,8

[1] delete or add other activities as appropriate