



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Human - performance and limitations 1 [S1Lot2>CMiO1]

### Course

Field of study

Aviation

Year/Semester

1/2

Area of study (specialization)

–

Profile of study

general academic

Level of study

first-cycle

Course offered in

Polish

Form of study

full-time

Requirements

compulsory

### Number of hours

Lecture

15

Laboratory classes

0

Other

0

Tutorials

0

Projects/seminars

0

### Number of credit points

1,00

### Coordinators

Karol Szymański

### Lecturers

### Prerequisites

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

### Course objective

Familiarizing students with the emotional and motivational processes of a person functioning in normal, difficult and extreme situations. Basic human cognitive processes - perception and attention and their importance in the process of managing information in the human - technical object system. 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 basic knowledge of vocabulary used in English to describe mathematical operations and data presented in a diagram/graph. Has knowledge of formulating a text in English explaining/describing a selected specialist issue,
2. has basic knowledge of vocabulary used in English to describe technological support for aviation

communication, flight control systems, airport safety procedures related to the presence of animals, aircraft control surfaces, aircraft maneuvers.

2. the student has knowledge of aviation safety and management. The student knows the concept of the human factor and methods for assessing human reliability, has detailed knowledge related to selected issues in the field of human capabilities and limitations during aircraft operation in flight, its impact on health and ability to perform flight operations, as well as possibilities of improving physical condition

3. has basic knowledge of mechanisms and laws governing human behavior and psyche

**Skills:**

1. is able to organize, cooperate and work in a group, assuming different roles in it and is able to appropriately define priorities for the implementation of a task defined by himself or others.

**Social competences:**

1. understands that in technology knowledge and skills become obsolete very quickly.

## Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

**Lecture:**

- assessment of knowledge and skills demonstrated in the written test - 1.5 hours

## Programme content

**Lecture:**

Human factors in aviation. Becoming a qualified pilot. Flight safety concepts. Management model (TEM) and SHELL model. Safety culture and safety management. Fundamentals of aviation physiology.

PART-66 (THEORY - 11.25 hrs.)

MODULE 9A. HUMAN FACTORS

9.1 General

Necessity to consider the human factor; Events attributable to human factors/human errors; Murphy's Laws. [2]

9.2 Human capabilities and limitations

Vision; Hearing; Information processing; Attention and perception; Memory; Claustrophobia and physical access. [2]

9.3 Social psychology

Individual and group responsibility; Motivation and demotivation; Peer pressure; "cultural" issues; Teamwork; Management, supervision and leadership. [1]

9.4 Factors influencing performance

Health/fitness; Work and personal stress; Time pressure and deadlines; Workload: excessive and insufficient; Sleep and fatigue, shift work; Alcohol, medication and drug abuse. [2]

9.5 Physical environment

Noise and smoke; Lighting; Movement and vibration; [1]

9.6 Tasks

Physical work; Repetitive tasks; Inspection by inspection; Complex systems. [1]

9.7 Communication

Within and between teams; Work recording; Updating, validity period; Dissemination of information. [2]

9.8 Human error

Error models and theories; Types of error in maintenance tasks; Consequences of errors (e.g. accidents); Avoiding and managing errors. [2]

9.9 Risks in the workplace

Recognizing and avoiding risks; Dealing with emergencies. [2]

## Course topics

Human factors in aviation. Becoming a qualified pilot. Flight safety concepts. Management model (TEM) and SHELL model. Safety culture and safety management. Fundamentals of aviation physiology.

## Teaching methods

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

## 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](http://www.faa.gov)

### Additional:

1. [www.easa.europa.eu](http://www.easa.europa.eu)

## Breakdown of average student's workload

	Hours	ECTS
Total workload	25	1,00
Classes requiring direct contact with the teacher	15	0,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	10	0,50