



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Systems of surveillance [S2LiK2P>SD]

Course

Field of study

Aerospace Engineering

Year/Semester

1/1

Area of study (specialization)

–

Profile of study

practical

Level of study

second-cycle

Course offered in

Polish

Form of study

full-time

Requirements

compulsory

Number of hours

Lecture

15

Laboratory classes

15

Other

0

Tutorials

0

Projects/seminars

0

Number of credit points

2,00

Coordinators

mgr inż. Paula Kurzawska-Pietrowicz

paula.kurzawska-pietrowicz@put.poznan.pl

Lecturers

Prerequisites

Knowledge: Basics of computer science, communication systems, flight parameters recording and remote sensing systems Skills: is able to communicate using various techniques in the professional environment and other environments, using the formal notation of construction, technical drawing, concepts and definitions of the scope of the studied field of study, has the ability to self-study with the use of modern teaching tools, such as remote lectures, websites and databases, teaching programs, e-books, can obtain information from literature, the Internet, databases and other sources. Can integrate the obtained information, interpret and draw conclusions from it, and create and justify opinions Social competences: Knows the limitations of own knowledge and skills; can work in a group

Course objective

To acquaint the student with basic information about air navigation and modern communication systems and their practical use in flight simulation conditions

Course-related learning outcomes

Knowledge:

1. Has extended knowledge necessary to understand the profile subjects and specialist knowledge about

air traffic management, safety systems, impact on the economy, society and the environment in the field of aviation

2. Has basic knowledge of aircraft movement in the air and air traffic services

Skills:

1. Has the ability to self-educate with the use of modern teaching tools, such as remote lectures, websites and databases, teaching programs, e-books
2. Understands the need for lifelong learning, can inspire and organize the learning process of other people

Social competences:

1. Is ready to critically evaluate the knowledge and content received, recognize the importance of knowledge in solving cognitive and practical problems, and consult experts in case of difficulties in solving the problem on its own

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

LECTURE: written exam in the scope of content conducted as part of the lecture

Laboratory: final grade based on the grades for the reports

Programme content

The topics covered include air navigation, basic navigation concepts and calculations, meteorology in aviation, radio navigation devices, the ILS system, aircraft positioning errors and the principles of determining the optimal flight route, as well as on-board and ground radars.

Course topics

1. The origins of air navigation
2. Basic concepts and navigational calculations
3. GNSS Navigation (Global Navigation Satellite System)
4. Meteorology in aviation
5. Radio navigation devices
6. Precision approach systems
7. Errors in the positioning of aircraft
8. Rules for determining the optimal route of passage
9. On-board and terrestrial radars: use and determination of their range and accuracy

Teaching methods

Informative (conventional) lecture

Laboratory method - students independently conduct experiments

Bibliography

Basic:

1. Masalski.M., Urządzenia radiowe i radionawigacyjne, Aeroklub Warszawski, Warszawa, 2009.
2. Stateczny A., Nawigacja radarowa: praca zbiorowa, Gdańskie Towarzystwo Naukowe, Gdańsk, 2011.
3. Fiedczyn S., Nawigacja lotnicza, Wydawnictwa Komunikacji i Łączności, Warszawa, 1974.
4. Kekusz G., Vademecum nawigatora lotniczego, Wydawnictwa Komunikacyjne, Warszawa, 1956.

Additional:

1. Polak Z., Rypulak A., Bilski J., Awionika, przyrządy i systemy pokładowe, WSOSP, Dęblin, 1999.
2. Wolper James S., Understanding mathematics for aircraft navigation, McGraw-Hill Companies Inc, 2001.
3. Narkiewicz J., Globalny system pozycyjny, WKiŁ, 2003.

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,00
Classes requiring direct contact with the teacher	30	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	20	1,00