



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Systems of surveillance

Course

Field of study

Aviation and cosmonautics

Area of study (specialization)

Civil aviation

Level of study

Second-cycle studies

Form of study

full-time

Year/Semester

1/1

Profile of study

practical

Course offered in

polish

Requirements

compulsory

Number of hours

Lecture

15

Laboratory classes

15

Other (e.g. online)

0

Tutorials

0

Projects/seminars

0

Number of credit points

2

Lecturers

Responsible for the course/lecturer:

dr inż. Remigiusz Jasiński

Responsible for the course/lecturer:

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Wydział Inżynierii Lądowej i Transportu

ul. Piotrowo 3 60-965 Poznań Responsible

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 the construction, methods of construction, production, operation, air traffic management, safety systems, impact on the economy, society and the environment in the field of aviation and cosmonautics
2. has ordered, theoretically founded specialist knowledge in the field of on-board equipment: as well as on-board and terrestrial electronic communication systems, remote sensing systems, observation systems, satellite navigation systems
3. has basic knowledge of law, in particular civil aviation law, copyright and industrial property law and its influence on the development of technology, can use patent information resources

Skills

1. 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 study field
2. has the ability to self-educate with the use of modern teaching tools, such as remote lectures, websites and databases, teaching programs, e-books
3. 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

1. understands the need for lifelong learning; can inspire and organize the learning process of other people
2. 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

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 (providing information in a structured way) - may be of a course (introductory) or monographic (specialist) character

Laboratory (experiment) 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	2,0
Classes requiring direct contact with the teacher	35	1,5
Student's own work (literature studies, preparation for laboratory classes, preparation for test) ¹	15	0,5

¹ delete or add other activities as appropriate