



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Diploma Seminar

### Course

Field of study

Aerospace Engineering

Area of study (specialization)

-

Level of study

Second-cycle studies

Form of study

full-time

Year/Semester

2/3

Profile of study

general academic

Course offered in

polish

Requirements

compulsory

### Number of hours

Lecture

0

Laboratory classes

0

Other (e.g. online)

0

Tutorials

0

Projects/seminars

15

### Number of credit points

20

### Lecturers

Responsible for the course/lecturer:

Prof. dr hab. inż. Jerzy Merkisz

Responsible for the course/lecturer:

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Wydział Inżynierii Lądowej i Transportu

ul. Piotrowo 3, 60-965 Poznań

### Prerequisites

Knowledge: Has the knowledge necessary to understand the profile subjects and specialist knowledge about the construction, methods of construction, manufacturing, operation, air traffic management, safety systems, impact on the economy, society and the environment in the field of aviation and aerospace for selected specialties: Civil Aviation

Skills: has the ability to self-educate using modern teaching tools, such as remote lectures, websites and databases, teaching programs, e-books is able to obtain information from literature, the Internet, databases and other sources. Can integrate the obtained information, interpret and draw conclusions from it, as well as create and justify opinions



Social competences: understands the need for lifelong learning; can inspire and organize the learning process of other people

### Course objective

Theoretical and practical preparation for writing a master's thesis with each graduate. Discussing the rules of writing a thesis, setting the aim and scope of the master's thesis. Training of self-presentation and preparation and conducting of a scientific presentation

### Course-related learning outcomes

#### Knowledge

1. Has broadened knowledge, necessary for understanding of profile subjects and specialist knowledge about construction, methods of construction, manufacturing, operation, air traffic management, security systems, impact on the economy, society and the aviation and aerospace environment for selected specialties: 1. Aviation Engineering, 2. Space Engineering, 3. Civil Aviation, 4. Virtual Engineering in Aeronautics [P7S\_WG, P7S\_WK],[K2A\_W01]

#### Skills

1. Is able to communicate using various techniques in the professional environment and other environments using the formal record of construction, technical drawing, concepts and the definition of the scope of the studied field of study [P7S\_UK K2A\_U02]

2. Has the ability to self-study using modern teaching tools, such as remote lectures, websites and databases, teaching programs, e-books [P7S\_UW, P7S\_UU K2A\_U03]

3. Is able to obtain information from literature, the Internet, databases and other sources. Is able to integrate the obtained information, interpret and draw conclusions, and create and justify opinions [P7S\_UW, P7S\_UU K2A\_U04]

4. Is able to prepare and present a short verbal and multimedia presentation devoted to the results of the engineering task [P7S\_UK, P7S\_UW K2A\_U08]

#### Social competences

1. Understands the need to learn throughout life; can inspire and organize the learning process of other people [P7S\_UU K2A\_K01]

2. Is ready to critically evaluate the knowledge and content received, recognize the importance of knowledge in solving cognitive and practical problems and to consult experts in the event of difficulties in solving the problem by themselves [P7S\_KK K2A\_K02]

3. Is able to properly define the priorities for the implementation of tasks specified by himself or others [P7S\_UO K2A\_K05]

4. Correctly identifies and resolves dilemmas related to the profession [P7S\_KR K2A\_K06]

5. Is aware of the social role of a technical university graduate, and especially understands the need to formulate and communicate to the public, in particular through mass media, information and opinions



on the achievements of technology and other aspects of engineering activities; makes efforts to provide such information and opinions in a widely understood way [P7S\_KO K2A\_K08]

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Discussion during the course, using individual analyzes and studies of the student in the matter of the issue taken in the field of air transport. Presentations of the students' achievements so far as part of the master's thesis. Final work. Presentation of progress in the form of a multimedia presentation of a scientific nature.

### Programme content

The structure of the master's thesis: the way of analyzing the literature to determine the state of knowledge in the issue covered by the topic of the thesis, the formulation of the research problem (fundamental thesis thesis), the method of presenting the research methodology (analytical, experimental) and their results, formulating observations and conclusions. Rules for citing foreign studies. Discussing (in succession) the diploma theses: the referrer should demonstrate knowledge of the latest developments in a given field of science and technology (domestic and foreign publications). General discussion on the subject of the presented work and the way of its implementation. General characteristics of the diploma thesis. Formal and editorial requirements for the diploma thesis. Structure and types of theses. Selection of literature. Development of source materials and links. Preparation of a work plan. Subject, goal, implementation schedule. Development of a research program. Research model. Experimental research. Simulation tests. Optimization and verification of test results. Initial reporting of work. Discussing current work results. Formulation of applications. The second report of work. Subject, final goal, scope of work. Discussion of students. Editorial comments. The final presentation of the work. Preparation and development of guidelines for defense of thesis. Passing the diploma seminar.

### Teaching methods

Project method (individual or team implementation of a large, multi-stage cognitive or practical task, the effect of which is the creation of a work)

### Bibliography

Basic

1. Wiśłocki K.: Metodologia i redakcja prac naukowych. Wyd. Politechniki Poznańskiej, Poznań 2013
2. B. Branowski - Metody twórczego rozwiązywania problemów inżynierskich, Wielkopolska Korporacja Techniczna NOT, Poznań 1999
3. Zb. Kłós (red.) - Rozprawy naukowe. Wydawnictwo Politechniki Poznańskiej, Poznań 2011

Additional

1. Lewitowicz J. (red) - Problemy badań i eksploatacji techniki lotniczej. Wydawnictwo ITWL, Warszawa 2006



### Breakdown of average student's workload

	Hours	ECTS
Total workload	565	20,0
Classes requiring direct contact with the teacher	65	3,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	400	15,0

<sup>1</sup> delete or add other activities as appropriate