



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Master degree thesis [S2LiK2P>PDM]

Course

Field of study

Aerospace Engineering

Year/Semester

2/3

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

0

Laboratory classes

0

Other (e.g. online)

0

Tutorials

0

Projects/seminars

10

Number of credit points

12,00

Coordinators

prof. dr hab. inż. Tomasz Łodygowski
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Lecturers

Prerequisites

Knowledge: Has the knowledge necessary to understand profile subjects and specialist knowledge about the structure, methods of construction, production, operation, air traffic management, safety systems, impact on the economy, society and the environment in the field of aviation and space 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, electronic books can obtain information from literature, the Internet, databases and other sources. Is able to integrate the information obtained, interpret and draw conclusions from it, and 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 diploma student. Discussing the principles of editing the work, determining the purpose and scope of the master's thesis. Self-presentation training and preparing and conducting scientific presentations.

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 aviation organizations and the applicable Polish and European aviation law
3. Has a basic knowledge of aviation vocabulary used in English. Has knowledge of formulating a text in English explaining/describing a selected specialist issue
4. Knows the basic concepts of economics, relating in particular to air transport, has basic knowledge of management and running a business, and knows the general principles of creating and developing forms of individual entrepreneurship, especially in the aspect of airline companies
5. Has knowledge of how to develop research methodology
6. Knows the general principles of creating and developing forms of individual entrepreneurship, also taking into account time management, as well as the skills of proper self-presentation, using knowledge in the field of science and scientific disciplines relevant to aviation

Skills:

1. Is able to use the following languages: native and international to a degree enabling the understanding of technical texts in the field of aviation (knowledge of technical terminology)
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. Is able to communicate using various techniques in the professional environment and other environments using the formal notation of concepts and definitions of the scope of the study field
4. Is able to prepare and present a short verbal and multimedia presentation devoted to the results of an engineering task
5. Is able to properly define priorities for the implementation of a task set by himself or others
6. 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
2. Is aware of the importance and understands the non-technical aspects and effects of engineering activities, including its impact on the environment, and the related responsibility for decisions made
3. Correctly identifies and resolves dilemmas related to the profession
4. Can think and act in an entrepreneurial manner
5. Has the competencies necessary to interact with other industry employees (including in English)
6. Is aware of the social role of a technical university graduate, and especially understands the need to formulate and convey to the society, in particular through the mass media, information and opinions on technological achievements and other aspects of engineering activities; makes efforts to provide such information and opinions in a generally comprehensible manner

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Discussion during classes, using individual analyzes and studies of the student regarding the issue in the field of air transport. Presentations of students' achievements to date as part of the preparation of their master's thesis. Final work. Presentation of progress in the form of a scientific multimedia presentation.

Programme content

Structure of the master's thesis: method of literature analysis to determine the state of knowledge in the issue covered by the topic of the thesis, formulation of the research problem (basic theses of the thesis), method of presenting the research methodology (analytical, experimental) and their results, formulating observations and conclusions. Rules for citing foreign studies. Discussion (in turn) of completed diploma theses: the presenter should demonstrate knowledge of the latest achievements in a given field of science and technology (domestic and foreign publications). General discussion on the topic of the presented work and the method of its implementation. General characteristics of the diploma thesis. Formal and editorial requirements for a diploma thesis. Structure and types of diploma theses. Selection of literature. Development of source materials and cross-references. Development of a work plan. Topic, goal, implementation schedule. Development of a research program. Research model.

Experimental research. Simulation studies. Optimization and verification of research results. Preliminary report of the work. Discussion of the work results so far. Formulating conclusions. Second report of the work. Topic, ultimate goal, scope of work. Student discussion. Editorial notes. Final presentation of the work. Preparation and development of guidelines for the defense of a diploma thesis. Passing the diploma seminar.

Course topics

none

Teaching methods

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

Bibliography

Basic:

1. Wiślocki 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

Additional:

3. Zb. Kłós (red.) - Rozprawy naukowe. Wydawnictwo Politechniki Poznańskiej, Poznań 2011

Breakdown of average student's workload

	Hours	ECTS
Total workload	375	12,00
Classes requiring direct contact with the teacher	125	5,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	250	7,00