



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Diploma seminar [S1Lot2-SLiPL>SD]

### Course

Field of study

Aviation

Year/Semester

4/7

Area of study (specialization)

Aircraft Engines and Airframes

Profile of study

general academic

Level of study

first-cycle

Course offered in

Polish

Form of study

full-time

Requirements

elective

### Number of hours

Lecture

0

Laboratory classes

0

Other

0

Tutorials

0

Projects/seminars

0

### Number of credit points

2,00

### Coordinators

### Lecturers

### Prerequisites

Student has knowledge of issues related to the realized diploma topic, is able to apply the scientific method in solving problems, carrying out experiments and inference, knows the limitations of their own knowledge, skills and is able to formulate questions precisely, and understands the need for further education.

### Course objective

To familiarize the student with the stages of writing an engineering diploma thesis and its correct development editorial.

### Course-related learning outcomes

Knowledge:

1. has structured, theoretically based general knowledge in the field of technology and various means of air transport, about the life cycle of means of transport, both hardware and software, and in particular about the key processes occurring in them

2. has structured and theoretically based general knowledge in the field of key issues of technology and detailed knowledge in the field of selected issues related to air transport, knows the basic techniques, methods

and tools used in the process of solving tasks related to air transport, mainly of an engineering nature thermodynamics, fluid mechanics, in particular aerodynamics

4. has structured, theoretically based knowledge in the field of engineering graphics and machine design: technical drawing, object projection, basic principles of engineering graphics, application of CAD (Computer Aided Design) computer graphic programs in machine design
5. has detailed knowledge related to selected issues in the field of construction manned and unmanned aircraft, in the scope of on-board equipment, control systems, communication and recording systems, automation of individual systems, has basic knowledge of flight simulation training devices and simulation methods used to solve air transport issues
6. has extended knowledge of the strength of materials, including the theory of elasticity and plasticity, stress hypotheses, methods of calculating beams, membranes, shafts, connections and other structural elements, as well as methods of testing the strength of materials and the state of deformation and stress in structures and also has basic knowledge of the main branches of technical mechanics: statics, kinematics and dynamics of a material point and a rigid body
7. has basic knowledge of metallic, non-metallic and composite materials used in machine construction, in particular their structure, properties, methods of production, heat and thermochemical treatment and the influence of plastic processing on their strength, as well as fuels, lubricants, technical gases, factors refrigeration, etc.
8. has the ability to self-educate using modern teaching tools, such as remote lectures, Internet sites and databases, teaching programs, e-books

#### Skills:

1. is able to obtain information from various sources, including literature and databases, both in Polish and English, integrate it properly, interpret and critically evaluate it, draw conclusions, and comprehensively justify the opinions formulated by him/her
2. is able to appropriately use information and communication techniques, which are applied at various stages of the implementation of aviation projects
3. is able to appropriately select materials for simple aviation structures, indicate differences between fuels used in aviation
4. is able to communicate using various techniques in the professional environment and other environments using a formal record of the structure, technical drawing, concepts and definitions of the scope of the studied field of study
5. is able to solve tasks using basic knowledge of aerodynamics, flight mechanics and flow around bodies
6. is able to design means of transport with appropriate requirements external (e.g. concerning environmental protection)
7. is able to analyze technical objects and solutions, is able to search in catalogs and on manufacturers' websites for ready-made components of machines and devices, including means and devices, assess their suitability for use in their own technical and organizational projects
8. is able to use the language of mathematics (differential and integral calculus) to describe simple engineering issues.
10. 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 specified by himself or others
11. is able to plan and implement the process of his own permanent learning and knows the possibilities of further education (2nd and 3rd degree studies, postgraduate studies, courses and exams conducted by universities, companies and professional organizations)

#### Social competences:

1. understands that in technology knowledge and skills very quickly become outdated
2. is aware of the importance of knowledge in solving engineering problems and knows examples and understands the causes of malfunctioning engineering projects that led to serious financial, social losses or

serious loss of health or even life

3. is aware of the social role of a graduate of a technical university, in particular understands the need to formulate and communicate to the public, in an appropriate form, information and opinions concerning the activities of engineering

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Evaluation of the delivered presentation to the group

### Programme content

The process of writing scientific papers (genesis of thesis topic, preparatory activities, source materials). Preparation of the diploma thesis (general requirements, editorial preparation, ethical problems). The role of the promoter in the process of creating work.

### Course topics

- 1) discussion of the structure of the thesis
- 2) formatting of the thesis
- 3) selection of bibliography
- 4) AI tools in the preparation of the thesis
- 5) good practices in the process of preparing the presentation of research results
- 6) Scientific article as a form of presentation of the thesis results

### Teaching methods

Discussion, combined with an assessment of the progress of the thesis based on the presentation

### Bibliography

Basic:

1. Szkutnik Z., Methodology of writing a diploma thesis. Ed. Poznań, 2005

Supplementary

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Additional:

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### Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,00
Classes requiring direct contact with the teacher	15	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	35	1,00