



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Diploma seminar [S2AiR1E-ISLiSA>SD]

### Course

Field of study

Automatic Control and Robotics

Year/Semester

2/3

Area of study (specialization)

Smart Aerospace and Autonomous Systems

Profile of study

general academic

Level of study

second-cycle

Course offered in

english

Form of study

full-time

Requirements

compulsory

### Number of hours

Lecture

0

Laboratory classes

0

Other (e.g. online)

0

Tutorials

0

Projects/seminars

30

### Number of credit points

4,00

### Coordinators

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### Lecturers

### Prerequisites

Knowledge: The student starting this subject should have basic knowledge related to the selected topic of the master's thesis in the field of automation and robotics and know the basic methods, techniques and tools used to solve tasks in this field. Skills: The student should have the ability to solve basic problems in the selected field and integrate knowledge from various areas of computer science, as well as the ability to obtain information from the indicated sources. He should also understand the need to expand his competences. Social competencies: In addition, in terms of social competences, the student must present attitudes such as honesty, responsibility, perseverance, cognitive curiosity, creativity, personal culture, respect for other people.

### Course objective

1. Provide students with basic knowledge of the methodology of preparing and presenting scientific studies, including diploma theses in the field of automation and robotics. 2. Developing students' skills in solving problems related to acquiring knowledge from selected sources, integrating and interpreting the obtained information and presenting the results of scientific research. Expanding knowledge about the methods, techniques and tools related to conducting research in a specific field.

### Course-related learning outcomes

## Knowledge:

1. student has extended knowledge within selected areas of robotics - [K2\_W10]
2. student has knowledge of development trends and the most important new achievements in the field of automation and robotics and related scientific disciplines - [K2\_W12]
3. student has a basic knowledge of the life cycle of automation and robotics systems as well as control and measurement systems - [K2\_W13]
4. student knows and understands the basic concepts and principles of intellectual property and copyright protection. Is able to use the resources of patent information - [K2\_W16]

## Skills:

1. student is able to critically use literature information, databases and other sources in Polish and in a foreign language - [K2\_U1]
2. student is able to analyze and interpret technical design documentation and use scientific literature related to a given problem - [K2\_U2]
3. student is able to communicate using various techniques in the professional environment and in other environments, also in a foreign language - [K2\_U3]
4. student is able to prepare a scientific study in the native language and a short scientific report in English, presenting the results of own scientific research - [K2\_U4]
5. student can prepare and present an oral presentation in Polish and in a foreign language on specific issues in the field of automation and robotics - [K2\_U5]
6. student has self-education skills in order to raise and update professional competences - [K2\_U6]
7. can use information and communication techniques - [K2\_U8]

## Social competences:

1. student understands the need and knows the possibilities of continuous training? improving professional, personal and social competences, is able to inspire and organize the learning process of other people - [K2\_K1]
2. student is aware of the need for a professional approach to technical issues, scrupulous reading of documentation and environmental conditions in which the devices and their components can function - [K2\_K4]
3. student is aware of the social role of a technical university graduate and understands the need to formulate and transmit to the society (in particular through the mass media) information and opinions on the achievements of automation and robotics in the field of research and application and other aspects of engineering activities - [K2\_K6]
4. student endeavors to provide such information and opinions in a commonly understandable manner with justification from different points of view - [K2\_K6]

## Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

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Forming Assessment:

- i. based on the completeness and correctness of the prepared presentation,
- ii. on the basis of active presence at presentations prepared by other students,
- iii. on the basis of the assessment of the current progress in the implementation of tasks in accordance with the assumed schedule

Summative assessment:

- i. assessment of the student's preparation for individual presentations and their compliance with the assumed plan,
- ii. continuous assessment during each class (oral answers)? on the basis of substantive activity in the presentations of other people,
- iii. rewarding the increase in the ability to use the learned rules and methods,
- iv. based on the timeliness of the work,
- v. discussion of additional aspects of the issue,
- vi. the effectiveness of applying the acquired knowledge when solving problems.

## Programme content

Seminar classes are conducted in the form of six 2-hour meetings. The seminar leader presents the rules for the preparation of professional multimedia presentations as well as the rules for the construction,

preparation and editing of scientific work, including the graduate thesis. The problems of dilemmas related to the profession of automation and robotics and the social role of a technical university graduate are also analyzed in the form of a discussion panel. As part of the seminar classes, students are expected to prepare and present three presentations in Polish or English on the subject of their master's thesis at about monthly intervals. These presentations, in addition to the main objectives listed below, are also intended to develop the ability to formulate and communicate to the public, information and opinions on technological achievements and other aspects of engineering activities.

The first presentation aims to present:

1. the selected topic of the work, its purpose and scope,
2. justification of the choice of a given topic and purposefulness of its implementation,
3. the expected division of work into stages and the schedule for the implementation of individual stages,
4. pre-selected tools and methods of task implementation,
5. the current state of knowledge in a given field,
6. the value that the completed work will bring.

The second presentation includes the presentation of:

1. current progress in the implementation of work,
2. compliance with the planned schedule,
3. a detailed plan for further work and possible modifications to the previous assumptions,
4. possible topicality and changes in the state of domain knowledge.

Third presentation:

1. it is presented when the student is about to finish or has already completed the preparation of the diploma thesis,
2. should be as close as possible to the final version prepared for the defense of the thesis,
3. shall submit within the stipulated time:
  - i. the state of knowledge in the field,
  - ii. problem solved and work motivation,
  - iii. selected (and possibly rejected together with the reasons for rejection) tools and techniques,
  - iv. achieved results, possible failures and their causes, conclusions, limitations, possibilities for further development.

During individual presentations, other students are to:

1. actively participate in classes,
2. indicate doubts / ambiguities regarding the presented material and solutions,
3. make suggestions for possible improvements and deepen the topic,
4. participate in the discussion planned after each presentation.

## Teaching methods

1. multimedia presentation, presentation illustrated with examples given on the board, multimedia show,
2. presentation of the obtained results, demonstration of the developed or extended software, questions and discussion.

## Bibliography

Basic

1. Profesjonalna prezentacja multimedialna. Jak uniknąć 27 najczęściej popełnianych błędów, Lenar P., Helion, Gliwice, 2010
2. Sekrety skutecznych prezentacji multimedialnych. Wydanie II rozszerzone, Lenar P., Helion, Gliwice, 2011.
3. Profesjonalna prezentacja multimedialna. Jak uniknąć 27 najczęściej popełnianych błędów, Lenar P., Helion, Gliwice, 2010
4. Sekrety skutecznych prezentacji multimedialnych. Wydanie II rozszerzone, Lenar P., Helion, Gliwice, 2011.

Additional

1. Prezentacja, która robi wrażenie. Projekty z klasą, Williams R., Helion, Gliwice, 2011.
2. Microsoft PowerPoint 2010 PL. Praktyczne podejście, Muir N., Helion, Gliwice, 2011.

3. Prezentacja, która robi wrażenie. Projekty z klasą, Williams R., Helion, Gliwice, 2011.  
4. Microsoft PowerPoint 2010 PL. Praktyczne podejście, Muir N., Helion, Gliwice, 2011.

### Breakdown of average student's workload

	Hours	ECTS
Total workload	97	4,00
Classes requiring direct contact with the teacher	47	2,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	50	2,00