COURSE DESCRIPTION CARD - SYLLABUS

Course name
Diploma seminar [N2AiR1-SW>SD]

Course

Field of study
Automatic Control and Robotics

Year/Semester
2/4

Area of study (specialization)
Vision Systems

Profile of study
general academic

Level of study
second-cycle

Course offered in
Polish

Form of study
part-time

Requirements
compulsory

Number of hours

Lecture
0

Laboratory classes
0

Other
0

Tutorials
0

Projects/seminars
20

Number of credit points

2,00

Coordinators

prof. dr hab. inż. Adam Dąbrowski
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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 in solving tasks in this field. Social competences: The student must present attitudes such as honesty, responsibility, perseverance, cognitive curiosity, creativity, personal culture, respect for other people. Skills: The student should have the ability to solve basic problems in the selected field and integrate knowledge from various areas of computer science and the ability to obtain information from the indicated sources. He should also understand the need to expand his competences.

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 the knowledge of methods, techniques and tools related to conducting research in a specific field.

Course-related learning outcomes

Knowledge
A student:
1. has an extended knowledge of selected areas of automation and robotics [K2_W10].
2. 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. has a basic knowledge of the life cycle of automation and robotics systems as well as control and measurement systems [K2_W13]
4. knows and understands the basic concepts and principles of the protection of intellectual property and copyright. Can use the resources of patent information [K2_W16]
Skills
A student:
1. is able to critically use literature information, research data and other sources in Polish and a foreign language [K_U1].
2. is able to analyze and interpret technical design documentation and use the scientific literature related to a given problem [K_U2]
3. can communicate using various techniques in the professional environment and in other environments, also in a foreign language [K_U3]
4. can prepare a scientific study in the mother tongue and a short scientific report in English, presenting the results of own research [K_U4]
5. can prepare and present in Polish and a foreign language an oral presentation on specific issues in the field of automation and robotics [K_U5]
6. has self-education skills in order to raise and update professional competences [K_U6]
7. can use information and communication techniques [K_U8]
Social competences
A student:
1. understands the need and knows the possibilities of continuous training, improving professional, personal and social skills, can inspire and organize the learning process of other people [K_K1].
2. is aware of the need for a professional approach to technical issues, meticulous reading of the documentation and environmental conditions in which the devices and their components can function [K_K4]
3. 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 works and other aspects of engineering activities [K_K6]
4. makes efforts to provide such information and opinions in a commonly understandable manner with justification of various points of view [K_K6].

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

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Formative assessment:
i. on the basis of 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 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 presentation of other people.
iii. promoting 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

During 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 aimed at developing the ability to formulate, convey and popularize information and opinions on technical achievements and other aspects of engineering activities to wider social groups.
The first presentation aims to present:
1. the selected topic of work, its purpose and scope
2. justification for the choice of a given topic and the 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 the field
6. the value that the work will bring.

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

Third presentation:
1. is presented when the student is about to finish or has already finished preparing 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 the art in the field
ii: problem solved and work motivation

iii. selected (and possibly rejected with reasons for rejection) tools and techniques

iv. achieved results, possible failures and their causes, conclusions, limitations, possibilities for further development.
During individual presentations, the 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 deepening the topic
4. participate in the discussion planned after each presentation

Course topics

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. In the form of a discussion panel, the problems of dilemmas related to the profession of automation and robotics and the social role of a technical university graduate are also analyzed.
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Teaching methods

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

Bibliography

Basic
1.Professional multimedia presentation. How to avoid the 27 most common mistakes, Lenar P., Helion, Gliwice, 2010
Additional
1. A presentation that makes an impression. Projects with class, Williams R., Helion, Gliwice 2011
2. Microsof PowerPoint 2010 PL, Practical approach, Muir N., Helion, Gliwice, 2011

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,00
Classes requiring direct contact with the teacher	20	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	30	1,00