COURSE DESCRIPTION CARD - SYLLABUS

Course name
Preparation of the Master's Thesis [S2AiR2-SIiB>PPM]

Course

Field of study
Automatic Control and Robotics

Year/Semester
2/3

Area of study (specialization)
Intelligent and Unmanned Systems

Profile of study
general academic

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
0

Tutorials
0

Projects/seminars
30

Number of credit points

20,00

Coordinators

dr hab. inż. Tomasz Pajchrowski prof. PP
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Lecturers

Prerequisites

Passed semester II

Course objective

The aim of the course is to guide the student to develop and write a thesis. The topics of the course are adequate to the topics of diploma theses. Course contents: description of the current state of knowledge related to the topic of the thesis, searching for information in the literature, also in foreign languages, continuation of research and scientific work, presentation of research results in a self-written thesis.

Course-related learning outcomes

Knowledge:
K2_W10 has a structured and in-depth knowledge within selected areas of automation and robotics;
K2_W12 has knowledge of development trends and the most significant new developments in the field of automation and robotics and related scientific disciplines
K2_W13 has basic knowledge of the life cycle of automation and robotics systems and control and measurement systems;
K2_W15 has knowledge of business management, engineering project management and quality

management;
K2_W16 knows and understands basic concepts and principles of intellectual property protection and copyright; is able to use patent information resources;

Skills:
K2_U1 is able to critically use literature information, databases and other sources in Polish and foreign language;
K2_U2 is able to analyse and interpret design technical documentation and use scientific literature related to a given problem;
K2_U4 is able to prepare a scientific paper in his/her mother tongue and a short scientific report in English, presenting the results of his/her own research;
K2_U6 is capable of self-education in order to improve and update his/her professional competences;
K2_U9 is able to simulate and analyse the operation of complex automation and robotics systems and plan and carry out experimental verification;
K2_U15 is able to formulate and verify (by simulation or experiment) hypotheses related to engineering tasks and simple research problems in the field of automation and robotics;
K2_U16 is able to evaluate the usefulness and applicability of new developments (including techniques and technologies) in the field of automation and robotics;
K2_U20 is able to design improvements (enhancements) to existing design solutions of automation and robotics components and systems;

Social competences:
K2_K1 understands the need for and knows the opportunities of continuous education - improving professional, personal and social competences, is able to inspire and organise the learning process of others;
K2_K2 is aware of the importance of and understands non-technical aspects and effects of engineering activity, including its impact on the environment and the related responsibility for making decisions; is willing to develop his/her professional output;
K2_K4 is aware of the necessity to approach technical issues in a professional manner, to be scrupulously acquainted with documentation and environmental conditions in which equipment and its components may function;
K2_K6 is aware of the social role of a graduate of a technical university and understands the need to formulate and communicate 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; he/she makes efforts to communicate such information and opinions in a commonly understood manner with justification of different points of view;

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

The evaluation shall take into account the student's activity and progress in preparing the thesis and the quality of the research and scientific results obtained by the student.

Programme content

The thesis is carried out under the guidance of a supervisor, with whom the scope, mode and timetable of the thesis must be agreed. The content depends on the topic of the thesis.

Course topics

none

Teaching methods

Laboratory work: design of experiments, execution of experiments using a variety of laboratory techniques and equipment appropriate to the chosen laboratory and research topic, analysis and elaboration of the results obtained, work with scientific literature, discussion.
In the case of the preparation of a theoretical paper: literature search in the topic of the issue, setting a schedule for the preparation of individual chapters, preparation of the paper, discussion.

Bibliography

Basic:
1. Szmigielska T. U., Niezbędnik młodego naukowca: poradnik dla piszącego pracę dyplomową, wyd. 3 zm. i uzup., Warszawa 2007.
2. Wójcik K., Piszę akademicką pracę promocyjną - licencjacką, magisterską, doktorską, Warszawa 2005
3. Urban S., Ładoński W, Jak napisać dobrą pracę magisterską, WYD UE WROCŁAW , rok wydania 2010, wydanie I.
Adequate for master's thesis topics.

Additional:
1. Pieter J., 1995, Zarys metodologii pracy naukowej, Ossolineum, Warszawa

Breakdown of average student's workload

	Hours	ECTS
Total workload	500	20,00
Classes requiring direct contact with the teacher	30	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	470	19,00