COURSE DESCRIPTION CARD - SYLLABUS

Course name
Information engineering [S1AiR1E>Inf2]

Course

Field of study
Automatic Control and Robotics

Year/Semester
1/2

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
English

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
0

Laboratory classes
30

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

2,00

Coordinators

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Lecturers

Prerequisites

Basic knowledge from high school program in mathematics , computer science and logic; Programming knowledge from first semester; Ability of obtaining information from the literature, databases and other sources; Skills of self-education in order to improve and update professional skills; English at B2 level that allows communicating , as well as reading cards catalogs, application notes, manuals and descriptions of tools.

Course objective

Learning object-oriented programming, familiarization with basic libraries and tools supporting PC programming.

Course-related learning outcomes

Knowledge:
Has advanced structured knowledge of selected algorithms and data structures as well as procedural and object-oriented programming methodologies and techniques [K1_W8 (P6S_WG)].
Has a structured knowledge of computer architectures, computer systems and networks and operating systems including real-time operating systems [K1_W9 (P6S_WG)].

Has a basic knowledge of the handling and use of IT tools for the design, rapid prototyping, simulation and visualisation of automation and robotics systems and for recording the design of mechanical constructions [K1_W10 (P6S_WG)].
Skills:
Is able to obtain information from literature, databases and other sources also in a chosen foreign language [K1_U1 (P6S_UW)].
Is able to plan, prepare and simulate the operation of simple automation and robotics systems [K1_U10 (P6S_UW)].
Is able to develop a solution to a simple engineering task and implement, test and run it in a selected programming environment on a PC for selected operating systems [K1_U26 (P6S_UW)].
Social competences:
Is aware of the importance and understands the non-technical aspects and consequences of engineering activities, including their impact on the environment and the related responsibility for decisions; is ready to care for the achievements and traditions of the profession [K1_K2 (P6S_KR)].
The graduate is aware of the need for a professional approach to technical issues, meticulous familiarization with the documentation and environmental conditions in which the equipment and its components can operate. The graduate is ready to observe the rules of professional ethics and to demand it from others, to respect the diversity of opinions and cultures [K1_K5 (P6S_KR)].

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:
Learning outcomes are with a single test and individual preparation of application that meets set criteria.

Programme content

1. Programming in a language that supports object-oriented programming. 2. Handling and formatting of input/output. 3. Design and implementation of simple classes. 4. Use of inheritance and polymorphism.
5. Use of external libraries that support programming. 6. Development of GUI applications.

Course topics

Teaching methods

1. Dedicated laboratory instructions with code examples. 2. Instruction analysis with tasks implementation and discussion with a laboratory tutor.

Bibliography

Basic
1. Bjarne Stroustrup, The C++ programming language (4th Edition) 2. Materials shared via ekursy.put.poznan.pl
Additional
Online documentation of libraries used.

Breakdown of average student's workload

	Hours	ECTS
Total workload	90	2,00
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)	60	1,00