COURSE DESCRIPTION CARD - SYLLABUS

Course name
Information Engineering [N1Eltech1>Inf1]

Course

Field of study
Electrical Engineering

Year/Semester
1/1

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
Polish

Form of study
part-time

Requirements
compulsory

Number of hours

Lecture
20

Laboratory classes
0

Other (e.g. online)
0

Tutorials
0

Projects/seminars
0

Number of credit points

2,00

Coordinators

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Lecturers

dr hab. inż. Wiesław Łyskawiński
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Prerequisites

Basic knowledge concerning computer science, mathematics, computer hardware, handling of computer, Windows operating system, and basic application software.

Course objective

Learning of basic knowledge concerning computer science as well as construction and operating principles of microcomputers; learning how to devise simple algorithms; learning the basics of structural and object programming in the C++ programming language.

Course-related learning outcomes

Knowledge:
Fields and application areas of computer science, the structure of a microcomputer system, basic tasks of an operating system, basics means of information encoding, the method of devising iterative and recursive algorithms. exemplify simple algorithms of solvable analytically problems from mathematics and physics, illustrate sorting algorithms, characterize the method of creating computer programs in the C++ programming language.

Skills:
Formulate simple algorithms and elaborate respective computer programs in the C++ programming language.

Social competences:
Ability to think and act responsibly and individually in the area connected with usage of computer software to increase work efficiency of an electrical engineer and improve enterprise economical significance. Ability to learn, ability to manage confidently different situations concerning exploitation of computer hardware and software.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:
Lectures: written test verifying both theoretical knowledge and practical skills (formulation of simple algorithms and writing computer programms in the C++ programming language).
Additional points for activity during lectures, in particular for: preparing answers for questions provided by the lecturer; preparing solutions for problems provided by the lecturer, careful elaboration of tasks within self-study, efficient and brilliant solving of current problems.

Programme content

History of computer science, its application areas and research directions; computer networks; algorithms and data structures. Programming languages; basics of structural programming.

Course topics

History of computer science, its application areas and research directions. Operating systems, computer networks. Internet, intranet. Algorithms and data structures. Chosen algorithms of analytically solvable mathematical and physical problems and sorting"s algorithms. Programming languages. C++ programming language. Basics of structural programming in the C++ programming language. Programming in the C++ Builder/Visual C++ environment.

Teaching methods

a) Lecture with multimedia presentation (including: drawings, photographs, animations, sound, films) supplemented by examples given on the board,
b) Interactive lecture with questions to students or specific students,
c) Student activity is taken into account during the course of the assessment,
d) The theory presented in close connection with practice and current knowledge of students.

Bibliography

Basic
1. Cormen T., Leiserson C., Rivest R., Wprowadzenie do algorytmów, WNT, Warszawa, 2007.
2. Grębosz J., Symfonia C++ standard: programowanie w języku C++ orientowane obiektowo. T. 1/2, Instytut Fizyki Jądrowej im. H. Niewodniczańskiego, Polska Akademia Nauk, Kraków, 2006.
3. Metzger P., Anatomia PC, Helion, 2007.
4. Matulewski J., Visual Studio 2013, Helion 2013.
Additional
1. Wróblewski P., Algorytmy, struktury danych i techniki programowania, Helion 2015.
2. Stasiewicz A., Ćwiczenia C++11 Nowy standard, Helion, 2012.
3.Wojtuszkiewicz K., Urządzenia techniki komputerowej. Cz.1. Jak działa komputer, PWN, 2011.

Breakdown of average student's workload

	Hours	ECTS
Total workload	42	2,00
Classes requiring direct contact with the teacher	24	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	18	1,00