COURSE DESCRIPTION CARD - SYLLABUS

Course name

Information systems

Course

Field of study

Education in Technology and Informatics

Year/Semester

2/3

Area of study (specialization)

Profile of study

general academic

Level of study

First-cycle studies

Course offered in

polish

Form of study

full-time

Requirements

compulsory

Number of hours

Lecture

15

Laboratory classes

30

Other (e.g. online)

Tutorials

Projects/seminars

Number of credit points

3

Lecturers

Responsible for the course/lecturer:

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ul. Piotrowo 3, 60-965 Poznań

Responsible for the course/lecturer:

Prerequisites

A student is required to have basic knowledge of computer science. The ability to program fluently in C / C ++, algorithmization of tasks as well as logical and abstract thinking. Understanding the need to create IT systems in order to increase work efficiency, calculations, visualization of results and presentation of information collected in databases.

Course objective

The main aim of the course is to provide knowledge on advanced elements of the C / C ++ language, the knowledge of which enables the creation of proprietary, complex information systems.

Course-related learning outcomes

Knowledge

W02 knows and understands advanced elements of the C / C ++ language used to create IT applications, including object-oriented programming, operator overloading, exception handling, dynamic data structures, namespaces. K1_W08

W03 has the necessary knowledge to create window applications running on Windows. K1_W08

Skills

U02 has the ability to create computer programs using advanced elements of the C / C ++ programming language. K1_U02, K1_U04, K1_U11

U03 has the ability to obtain information from literature, databases and other available sources of knowledge. K1_U02, K1_U04, K1_U11

Social competences

K01 is able to share the acquired IT knowledge with others in an understandable way. K1_K01, K1_K03, K1_K05

K02 sees the importance of computerization of various areas of life in relation to man and society. K1_K01, K1_K03, K1_K05

K03 understands the need for continuous training in order to improve professional competences, acquire current knowledge in the field of generally understood computer science and programming languages (e.g. by reading IT magazines, participating in courses and postgraduate studies). K1_K01, K1_K03, K1_K05

K04 demonstrate responsibility for the tasks entrusted to him, e.g. an independent programming project. K1_K01, K1_K03, K1_K05

K05 is able to work on a designated task independently and in a team taking various roles in it. K1_K01, K1_K03, K1_K05

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

W01 Written tests with points, including the analysis of complex parts of programs. The final grade depends on the percentage of points.

3 50.1% -70.0%

4 70.1% -90.0%

5 from 90.1%

U01 Individual work assessed at the end of laboratory classes. Design tasks in the form of programs.

3 50.1% -70.0%

4 70.1% -90.0%

5 from 90.1%

Programme content

Advanced C ++ language elements used to create functions:

- static and dynamic arrays, one- and two-dimensional as arguments of a function,

- recursion,

- const modifier,

- pointers and references as a function result,

- function overload,

- function templates.

Object oriented programming:

- classes, class objects,

- operator overloading,

- exception handling,

- Inheritance,

- polymorphism.

Elements of programming for the Windows environment with the use of MFC classes.

Teaching methods

Lecture: multimedia presentation, solving example tasks on the blackboard,

Laboratory exercises: practical exercises, performing experiments, discussion, team work.

Bibliography

Basic

1. H. M. Deitel, P. J. Deitel, Arkana C++ Programowanie, Wydawnictwo RM, Warszawa 1998.

2. S. Prata, Szkoła Programowania. Język C++, Wydawnictwo Helion, Gliwice 2006.

3. A. Zalewski, Programowanie w językach C i C++ z wykorzystaniem pakietu Borland C++, Wydawnictwo Nakom, Poznań 1996.

4. J. Grębosz, Symfonia C++. Programowanie w języku C++ orientowane obiektowo, Tom 1,2,3, Oficyna Kallimach, Kraków 1999.

Additional

1. D. E. Knuth, Sztuka programowania,tom1. Algorytmy podstawowe, Wydawnictwa Naukowo-Techniczne, Warszawa 2002.

2. N. Wirth, Algorytmy + struktury danych = programy, Wydawnictwa Naukowo-Techniczne,Warszawa 2004.

Breakdown of average student's workload

	Hours	ECTS
Total workload	80	3,0
Classes requiring direct contact with the teacher	50	2,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) [1]	30	1,0

[1] delete or add other activities as appropriate