COURSE DESCRIPTION CARD - SYLLABUS

Course name
Information Technology II [S1MNT1>TI2]

Course

Field of study
Mathematics of Modern Technologies

Year/Semester
1/2

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
Polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
0

Laboratory classes
30

Other (e.g. online)
0

Tutorials
0

Projects/seminars
0

Number of credit points

2,00

Coordinators

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Lecturers

Prerequisites

A student starting this subject should have the knowledge and skills of the Information Technology I course. He should know the limits of his own knowledge and understand the need for further education.

Course objective

Obtaining knowledge, skills and competences in the field of information technologies, with particular empha- sis on the requirements of the European Certificate of Computer Skills ECDL Advanced (European Computer Driving License Advanced) in the field of advanced use of databases as well as managerial and presentation graphics.

Course-related learning outcomes

Knowledge:
• knowsandunderstandstheconcepts,theoremsandmethodsformathematicalmodeling[K_W02(P6S_WG)];
• knowsandunderstandstherelationshipbetweenmathematicsandmoderntechnologies[K_W05(P6S_WG)];
• knows and understands issues in computer science, including numerical methods; knows at least one software package, programming language [K_W07(P6S_WG)].

Skills:
• can use mathematical tools to support and develop modern technologies used in engineering and technical sciences [K_U06(P6S_UW)];
• is able to operate devices, tools, etc. in accordance with the general requirements and technical documentation; knows how to apply occupational health and safety rules [K_U11(P6S_UW)];
• is able to use the acquired knowledge as well as appropriate methods and tools to solve typical engineering tasks [K_U12(P6S_UW)];
• is able to develop documentation or prepare a speech with a multimedia presentation related to the implementation of an engineering task using specialized terminology [K_U14(P6S_UK)];
• is able to work individually and in a team and interact with other people; is able to estimate the time needed to complete the assigned task; is able to develop and implement a work schedule ensuring meeting the deadline [K_U16(P6S_UO)].

Social competences:
• is ready to critically assess the level of his/her knowledge in relation to research in exact and natural sciences as well as engineering and technical sciences [K_K02(P6S_KK)];
• is ready to deepen and expand knowledge to solve new technical problems [K_K01(P6S_KK)];
• is ready to think and act in a creative and entrepreneurial way, taking into account safety, ergonomics and economic aspects of work; is aware of the need to initiate activities for the benefit of the public interest and responsibility for the effects of the work of the team and its individual participants [K_K03(P6S_KO)].

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Laboratory classes: control of skills and competences in the form of tests; continuous assessment in each class (rewarding activity and quality of perception); obtaining additional points for activity during classes, in particular for:
- proposing to discuss additional aspects of the issue;
- the effectiveness of applying the acquired knowledge while solving a given problem;
- ability to work within a team;
- comments related to the improvement of didactic materials;
- aesthetic diligence of the developed reports and tasks as part of self-study.

Programme content

Update: 01.06.2023r.
Laboratory classes:
• knowledge of basic concepts related to the design and use of databases;
• create a relational database with advanced table creation and complex table relationships;
• design and use queries to create tables, update tables, delete and append data using wildcards, parameters and calculations;
• use of controls and subforms to improve form functionality;
• use of controls in reports to perform calculations and create subreports to increase the transparency of the presented data;
• improve productivity through the use of macros and data import and integration functions;
• design assumptions;
• slide templates and masters;
• graphic objects;
• graphs and diagrams;
• multimedia;
• boosting performance;
• presentation management.

Course topics

none

Teaching methods

Laboratory classes:

• laboratories supplemented with multimedia presentations
• using tools that enable students to complete tasks at home
• demonstrations
• work in teams

Bibliography

Basic:
• Kincaid D., Cheney W., Analiza numeryczna, WNT, Warszawa 2006;
• Maćkiewicz A., Algorytmy algebry liniowej. Metody bezpośrednie, Wydawnictwo Politechniki Poznańskiej, Poznań 2002.

Additional:
• Kiełbasińsk A., Schwetlick H., Numeryczna algebra liniowa: wprowadzenie do obliczeń zautomatyzowanych, WNT, Warszawa, 1992.

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	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)	20	1,00