COURSE DESCRIPTION CARD - SYLLABUS

Course name
Information Technologies [S1DSwB1>TI]

Course

Field of study
Data Science in Business

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
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

dr inż. Hubert Wojciechowski
hubert.wojciechowski@put.poznan.pl

Lecturers

Prerequisites

Students enrolling in the "Information Technologies" course should have a basic understanding of computer operation and the Windows operating system. They should also be able to use a web browser and have fundamental skills in navigating the internet and managing email. It is recommended that students possess elementary knowledge of creating, editing, and saving files in various formats. They should be proficient in using a keyboard and mouse, understand basic operating system functions (such as file and folder organization, copying, and moving data), and have fundamental skills in searching for information online.

Course objective

The objective of the "Information Technologies" course is to equip students with practical skills for effectively using IT tools in academic and professional settings. Students will learn to operate office software and collaboration tools, enabling them to efficiently process data, create documents and presentations, and communicate effectively in a digital environment.

Course-related learning outcomes

Knowledge:

Describes IT tools that support data processing, document creation, presentations, and work organization in a digital environment [DSB1_W05].
Characterizes methods of team collaboration in a digital environment, including cloud-based work, real-time document editing, and sharing [DSB1_W08].
Explains fundamental principles of cybersecurity, including data protection, password management, and the secure use of IT tools [DSB1_W06].

Skills:
Uses spreadsheets for data entry, processing, and analysis, creating charts, and applying formulas and functions [DSB1_U04].
Creates and edits text documents using advanced formatting techniques, content organization, and automation tools [DSB1_U12].
Prepares multimedia presentations and designs graphic content for effective information delivery [DSB1_U10].
Organizes and manages work in a cloud environment, utilizing tools for file storage, sharing, and editing [DSB1_U13].
Applies assistive technologies and artificial intelligence models to automate and optimize office and analytical tasks [DSB1_U09].

Social competences:
Adheres to cybersecurity principles and data protection in a digital environment, ensuring the confidentiality and integrity of information [DSB1_K05].
Effectively collaborates in project teams using communication tools, document management systems, and online work organization platforms [DSB1_K02].
Utilizes information technologies to streamline business processes and enhance data and information management efficiency [DSB1_K04].

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Group project execution and completion of an individual written test.

Programme content

The course covers topics related to the effective use of IT tools that support data processing, document creation, presentations, and work organization in a digital environment. Students will acquire skills in working with spreadsheets, including data entry, processing, and analysis, creating charts, and applying formulas and functions. They will also learn to create and edit text documents, including formatting, content organization, and the use of automation tools.
An essential component of the course is the preparation of multimedia presentations and the design and editing of graphic content, enabling effective information delivery in an engaging format. Students will also explore methods of digital team collaboration, including work organization, communication, and real-time document sharing and editing.
The course will also cover the application of artificial intelligence models and assistive technologies for task automation and optimization. Students will develop skills in working within a cloud environment, including file storage, sharing, and organization. Additionally, they will gain knowledge of fundamental cybersecurity principles, such as data protection, password management, and the secure use of IT tools.

Course topics

• Introduction to the Course and Digital Work Organization
• Overview of course objectives, methods, and assessment criteria.
• File management and cloud system basics.
• Case study: Structuring directories for efficient work organization.
• Spreadsheets - Basics
• Data entry, basic cell operations, formatting.
• Case study: Basic calculations.
• Spreadsheets - Data Analysis and Visualization
• Sorting, filtering, statistical functions, and charts.
• Case study: Sales analysis in a small business.

• Spreadsheets - Automation and Data Processing
• Introduction to pivot tables, Power Query, and basic macros.
• Case study: Large dataset analysis.
• Creating and Editing Text Documents
• Formatting, inserting tables and graphics, content automation tools.
• Case study: Professionally formatted report.
• Text Documents - Automation and Team Collaboration
• Creating tables of contents, tracking changes, mail merge.
• Case study: Collaborative document editing and revision.
• Multimedia Presentations - Designing Effective Slides
• Readability principles, slide layout, multimedia elements.
• Case study: Preparing a presentation on innovative technologies.
• Graphics and Content Visualization
• Creating infographics, designing posters, and marketing graphics.
• Case study: Designing a visual business report.
• Online Collaboration and Cloud-Based Project Management
• Real-time teamwork, document management.
• Case study: Organizing group work within a project.
• Using Artificial Intelligence in Office Work
• Task automation, content generation, and data analysis with AI.
• Case study: Applying AI models for text and data processing.
• Cybersecurity and Data Protection
• Safe use of IT tools, password management.
• Case study: Analyzing phishing attacks and data breaches.
• Online Forms and Data Collection
• Creating and analyzing forms, automating data collection.
• Case study: Market research survey.
• Integration of Digital Tools and Process Automation
• Combining data from multiple sources.
• Case study: Automating business reporting.
• Finalization of the Semester Project
• Consultations and project refinements, preparation for presentations.
• Case study: Strengths and weaknesses analysis of student projects.
• Final Test and Project Presentations
• Assessment of acquired knowledge through a written test.
• Student project presentations.

Teaching methods

The applied teaching methods will include:
• Problem-based methods - Case studies enabling practical application of knowledge.
• Project-based methods - Gradual skill development through the execution of a group project.

Bibliography

Basic:
Zielińska, A. (2022). Edytor tekstów Word od podstaw. Wydawnictwo iTStart.
Wrotek, W. (2022). Excel 2021 PL. Wydawnictwo Helion.
Tomaszewska, A. (2015). ABC PowerPoint 2016 PL. Ćwiczenia. Wydawnictwo Helion.

Additional:
Wojciechowski, A. (2007). Usługi w sieciach informatycznych. Wydawnictwo PWN.

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