



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Fundamentals of web application design [S1Cybez1>PPAI]

Course

Field of study
Cybersecurity

Year/Semester
2/4

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
16

Laboratory classes
16

Other
0

Tutorials
0

Projects/seminars
16

Number of credit points

3,00

Coordinators

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Lecturers

Prerequisites

A student beginning this course should have knowledge of structured and object-oriented programming, basic knowledge of Internet technologies and basic knowledge of database design and use. He or she should have the ability to solve basic problems related to the process of designing information systems and the ability to obtain information from the indicated sources. In addition, in terms of social competence, the student must present such attitudes as honesty, responsibility, perseverance, cognitive curiosity, creativity, personal culture, respect for other people.

Course objective

To introduce students to the types, definitions and architecture of web applications. Students will learn to design and implement simple web applications using basic technologies and tools, such as HTML5, CSS3, JS and PHP, and learn about popular frameworks and open-source solutions.

Course-related learning outcomes

Knowledge:

- knows the basic technologies and tools used to develop web applications, [K1_W06]
- understands the principle of web applications and the process of their creation [K1_W09]

Skills:

- can design and implement a simple web application, [K1_U02]
- can implement a web application on a server, [K1_U06]

Social competences:

- is able to work in a project team in the implementation of web applications.[K1_K05]
- is aware of the dynamic nature of the development of information technology, especially in the field of Internet technology, and understands the need for continuous improvement of his skills. [K1_01]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

- lecture - the knowledge gained in lectures is verified by an exam, written form. The correctness of the answer and the degree of understanding of the problem by the student is evaluated.
 - laboratory/project - on the basis of the evaluation of the current progress of the tasks.
- In each form of the course assessment, the grade depends on the number of points the student earns relative to the maximum number of required points. Earning at least 50% of the possible points is a prerequisite for passing. The relationship between the grade and the number of points is defined by the Study Regulations. Additionally, the course completion rules and the exact passing thresholds will be communicated to students at the beginning of the semester through the university's electronic systems and during the first class meeting (in each form of classes).

Programme content

The module program covers key aspects of the web application lifecycle, from project requirements analysis, user interface design, implementation using front-end and back-end technologies, to deployment and application nurturing and development.

Course topics

The lectures are theoretical in nature and include discussion of key issues related to web application design, including basic front-end (HTML, CSS, JavaScript) and back-end (PHP, NodeJS, REST) technologies. Principles of user interface design, responsiveness and good practices in application development are also covered. Lectures are supplemented with practical examples and an overview of the latest trends and technologies in the web development industry.

Laboratory classes consist of students performing practical exercises in accordance with prepared instructions that cover specific aspects of web application design and implementation.

Design classes are carried out individually or in teams and cover various stages of web application development, such as requirements analysis, interface design, implementation and testing. Their goal is to practically apply the acquired knowledge and skills in a complex design task.

Teaching methods

Lecture: multimedia presentation supplemented by examples and additional explanations on the blackboard. Lectures are conducted according to the rules of traditional lecture, in justified cases in the form of a conversational lecture.

Laboratories/project: multimedia presentation, presentation illustrated with examples.

Bibliography

Basic:

1. Shklar L., Rosen R., "Web Application Architecture: Principles, Protocols and Practices", Wiley, 2021
2. Frain B., "Responsive Web Design with HTML5 and CSS3", Packt Publishing, 2020

Additional:

1. Brenda Jin, "Designing Web APIs", O'Reilly Media, 2018

Breakdown of average student's workload

	Hours	ECTS
Total workload	90	3,00
Classes requiring direct contact with the teacher	48	1,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	42	1,50