

MODULE DESCRIPTION CARD – SYLLABUS

This module is a part of the Intensive International Education Programs in the field of the ICT organised at Poznań University of Technology as part of the „IMPACT – Innowacyjne Międzynarodowe Programy w AI, Cyberbezpieczeństwie i Teleinformatyce” project implemented SPINAKE Program of the National Agency for Academic Exchange, financed by the European Social Development Fund 2021–2027 (ESDF).

Module name:

Web Applications

Number of hours:

10

Lecturers:

Maciej Zakrzewicz

Marek Wojciechowski

Module Descriptions:

This course introduces students to the fundamental concepts, architectures, and technologies involved in building web applications. It covers standards such as HTTP, HTML, CSS, and JavaScript, and presents examples of web applications demonstrating both thin-client and thick-client architectures (JavaScript frontend combined with RESTful web services backend).

Purpose of the support under Module:

The overall objective of the Innovative International Education Program in ICT within the IMPACT project is to raise the competencies of international students in key digital technologies and to support personalized, flexible, and modern education aligned with current global needs in the area of ICT.

The specific objective of the module is to provide competencies and promote activities carried out at the Poznań University of Technology in the area of web application design and development.

Method of support under Module:

Support within the module is provided with the participation of the instructor and divided into the following elements:

- 6-week self-study program using teaching materials provided by the instructor on the e-learning platform;
- 6 weeks of support from the instructor in the form of online consultations using tools that enable meetings to be held;
- a test to verify the acquisition of competences.

Module-related learning outcomes:

Descriptions of the new competences:

Description of acquired competences



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Knowledge:

1. The student understands the network architecture of web applications, including the roles of the frontend, backend, and communication protocols.
2. The student knows fundamental presentation technologies, such as HTML and CSS.
3. The student knows the fundamentals of JavaScript and understands procedural, object-oriented, and functional programming paradigms.
4. The student can explain the functioning of web applications and RESTful web services.
5. The student understands and can describe key HTTP protocol mechanisms, including cookies, headers, sessions, status codes, and security features.
6. The student knows the architecture of Single-Page Applications (SPA).
7. The student understands the core concepts behind the React library and its basic features.

Skills:

1. The student can apply presentation technologies such as HTML and CSS.
2. The student can write JavaScript code using procedural, object-oriented, and functional constructs.
3. The student can implement simple server-side web applications.
4. The student can implement RESTful backends.
5. The student can develop basic SPAs using the React library..

Social competences:

1. The student demonstrates communication skills to clearly present technical solutions.
2. The student is able to work effectively in a team to develop IT solutions.

Criteria for verifying learning outcomes

Method of verification/validation of learning outcomes

Workload

25 h (including work with teaching materials provided by the lecturer, consultation, and the student's own work) – 1 ECTS point

Level of the European Qualifications Framework



POZNAN UNIVERSITY OF TECHNOLOGY
