

Subject card

Subject name and code	Web Applications 2, PG_00207601						
Field of study	Informatics						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2027/2028		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish		
Semester of study	4		ECTS credits		5.0		
Learning profile	academic		Assessment form		credit		
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		mgr Mateusz Miotk				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	30.0	0.0	0.0	60
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	60		0.0		65.0	125
Subject objectives	The aim of the course is to familiarize students with modern technologies, techniques and tools intended for creating the client part of a web application, built in the Single Page Application (SPA) model and based on the JavaScript language.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[INFOL3_W08] knows and understands advanced concepts in the field of network technologies, including communication protocols, security and construction of network applications		The student knows and understands the architecture of a web application built in the Single Page Application (SPA) model based on JavaScript — including client-side rendering, decomposition of the application into components, and the lifecycle of the client part.		[SW4] test/exam - oral or written [SW2] presentation/project/paper/report		
	[INFOL3_U06] is able to select and apply appropriate IT methods and tools to solve complex problems, is able to use acquired knowledge by appropriately selecting sources and information derived from them, and perform evaluation, critical analysis, and synthesis of this information		The student is able to select and apply appropriate JavaScript tools and libraries to build a working web application in the SPA model, using technical documentation and other sources.		[SU2] presentation/project/paper/report [SU4] test/exam - oral or written		

Subject contents	1. The Single Page Application (SPA) web application model — comparison with the multi-page model, client-side rendering. 2. Component-based architecture of the client part — splitting the interface into components, composition, lifecycle. 3. Data flow in a single-page application — passing data between components, one-way communication. 4. Handling events and user interaction, input validation. 5. Application state management — local and shared state, centralised state management, state update patterns. 6. Communication with the backend (API) — asynchronous requests, data exchange formats, handling responses and errors, loading states. 7. Client-side routing — navigation without page reload. 8. Client application performance — render optimisation, reducing unnecessary recomputation, lazy loading, performance measurement. 9. Security topics and good practices for building the client part of a web application.		
Prerequisites and co-requisites	Passed course aplikacje webowe 1		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		51.0%	40.0%
		51.0%	60.0%
Recommended reading	Basic literature	Technical documentation of the React framework: https://react.dev/	
	Supplementary literature	• S. Stefanov, <i>React in Action</i>, 2nd ed. (Polish: <i>React w działaniu</i>, Helion, ISBN 9788383220406). • M. Haverbeke, <i>Eloquent JavaScript: A Modern Introduction to Programming</i>, current ed.	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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