GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

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| Subject name and code | Programming of Internet Applications, PG_00067284 | | | | | | |
| Field of study | Informatics | | | | | | |
| Date of commencement of studies | October 2025 | | Academic year of realisation of subject | 2028/2029 | | | |
| Education level | first-cycle studies | | Subject group | Optional subject group<br>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 | 4 | | Language of instruction | Polish | | | |
| Semester of study | 7 | | ECTS credits | 2.0 | | | |
| Learning profile | general academic profile | | Assessment form | exam | | | |
| Conducting unit | Department of Algorithms and Systems Modelling -> Faculty of Electronics Telecommunications and Informatics -> Faculties of Gdańsk University of Technology | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr inż. Krzysztof Manuszewski | | | | | |
| | Teachers | dr inż. Krzysztof Manuszewski | | | | | |
| Lesson types | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 15.0 | 0.0 | 15.0 | 0.0 | 0.0 | 30 |
| | 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 | 30 | | 3.0 | 17.0 | 50 | |
| Subject objectives | The major goal is to prepare students to design and implement modern, responsive and scalable WWW and mobile applications. | | | | | | |

## Learning outcomes

| Course outcome | Subject outcome | Method of verification |
|---|---|---|
| [K6_W44] knows and understands, to an advanced extent, architecture, design principles and methods of hardware and software support for local and distributed information systems, including computing systems, databases, computer networks and information applications, as well as the principles of human-computer interaction, the operation and evaluation criteria of data processing, storage and transfer methods, including computational algorithms, artificial intelligence and data mining as well as standards and methods of IT systems administration, monitoring of processes and robustness to undesirable phenomena and activities | Understands the principles and conditions related to typical web application architectures | [SW1] Assessment of factual knowledge |
| [K6_U03] can design, according to required specifications, and make a simple device, facility, system or carry out a process, specific to the field of study, using suitable methods, techniques, tools and materials, following engineering standards and norms, applying technologies specific to the field of study and experience gained in the professional engineering environment | Is able to design and implement both server and client side of system | [SU1] Assessment of task fulfilment |
| [K6_W04] knows and understands, to an advanced extent, the principles, methods and techniques of programming and the principles of computer software development or programming devices or controllers using microprocessors or programmable elements or systems specific to the field of study, and organisation of systems using computers or such devices | Is able to assessment and modify the efficiency of WWW system. Is able to use modern tools and patterns for purpose of development of WWW and mobile solutions | [SW1] Assessment of factual knowledge |
| [K6_W03] knows and understands, to an advanced extent, the construction and operating principles of components and systems related to the field of study, including theories, methods and complex relationships between them and selected specific issues - appropriate for the curriculum | Understands the concepts behind the modularization of web solutions and is able to apply them in practice for both client-side and server-side components. | [SW1] Assessment of factual knowledge |

## Subject contents

Course content – lecture
JavaScript - native mechanism vs. object oriented mechanisms, emulation of other known mechanisms.
Modern approach to client side code in JS, Unit tests, Libraries and frameworks (JQuery/ExtJS).
Possible alternatives for Javascript Tools and solutions, E.g.Typescript, CoffeeScrit.
Implementation of server side logic. MVC pattern. (ASP.Net MVC).
Javascript on the server side: NodeJS.
Hosted applications.

Course content – laboratory
JavaScript - native mechanism vs. object oriented mechanisms, emulation of other known mechanisms.
Modern approach to client side code in JS, Unit tests, Libraries and frameworks (JQuery/ExtJS).
Possible alternatives for Javascript Tools and solutions, E.g.Typescript, CoffeeScrit.
Implementation of server side logic. MVC pattern. (ASP.Net MVC).
Javascript on the server side: NodeJS.

## Prerequisites and co-requisites

C#, knowledge in area of HTML, HTTP

## Assessment methods and criteria

| Subject passing criteria | Passing threshold | Percentage of the final grade |
|---|---|---|
| | 60.0% | 60.0% |
| | 40.0% | 40.0% |

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| Recommended reading | Basic literature | JavaScript: The Good Parts, D. Crockford<br>*Pro ASP.NET MVC Framework*, A. Freeman, S. Sanderson |
| | Supplementary literature | MSDN |
| | eResources addresses | |
| Example issues/ example questions/ tasks being completed | Implementation of a web application using Razor Pages<br>Implementation of a web application using Vue.js<br>Automation of web application testing | |
| Practical activites within the subject | Not applicable | |

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