



## Subject card

|   |  |  |  |                                     |   |            |     |
|---|--|--|--|-------------------------------------|---|------------|-----|
| Subject name and code                       | Techniques for creating web pages, PG_00051070   |  |  |                                     |   |            |     |
| Field of study                              | Technical Physics  |  |  |                                     |   |            |     |
| Date of commencement of studies             | October 2020   |  | Academic year of realisation of subject  |                                     | 2022/2023   |            |     |
| 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                               | 3  |  | Language of instruction  |                                     | Polish  |            |     |
| Semester of study                           | 5  |  | ECTS credits   |                                     | 3.0   |            |     |
| Learning profile                            | general academic profile   |  | Assessment form  |                                     | assessment  |            |     |
| Conducting unit                             | Zakład Fizyki Teoretycznej i Informatyki Kwantowej -> Instytut Fizyki i Informatyki Stosowanej -> Faculty of Applied Physics and Mathematics |  |  |                                     |   |            |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor   |  | dr inż. Paweł Syty   |                                     |   |            |     |
|   | Teachers   |  | dr inż. Paweł Syty   |                                     |   |            |     |
| Lesson types and methods of instruction     | Lesson type  | Lecture  | Tutorial   | Laboratory                          | Project   | Seminar    | SUM |
|   | Number of study hours  | 15.0   | 0.0  | 0.0                                 | 30.0  | 0.0        | 45  |
|   | 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  | 45   |  | 5.0                                 |   | 25.0       | 75  |
| Subject objectives                          | To acquaint students with the basic methods of creating websites.  |  |  |                                     |   |            |     |
| Learning outcomes                           | Course outcome   |  | Subject outcome  |                                     | Method of verification  |            |     |
|   | K6_K01   |  | The student is aware of changes in technology and the need for training.   |                                     | [SK5] Assessment of ability to solve problems that arise in practice  |            |     |
|   | K6_U03   |  | The student is able to independently prepare a website on a selected topic, using selected technologies and tools. |                                     | [SU4] Assessment of ability to use methods and tools<br>[SU3] Assessment of ability to use knowledge gained from the subject<br>[SU1] Assessment of task fulfilment |            |     |
|   | K6_U02   |  | The student is able to analyze the problem to be solved and solve it.  |                                     | [SU1] Assessment of task fulfilment<br>[SU2] Assessment of ability to analyse information   |            |     |

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|--|---|---|-------------------------------|
| Subject contents   | <p>LECTURE</p> <p>Web standards, website availability (WCAG, ATAG)</p> <p>HTML 5 (with particular emphasis on what's new in relation to older versions)</p> <p>CSS - Cascading Style Sheets</p> <p>Introduction to the PHP language, with particular emphasis on objectivity from version 5.x and the new possibilities of version 7.x</p> <p>HTTP protocol, Internet architecture</p> <p>MVC pattern, example in PHP, layered structure of web applications</p> <p>Template systems on the example of a selected PHP and JavaScript template</p> <p>Website security, including data security</p> <p>Supporting languages / technologies: XML, XSL, XPath, XSLT</p> <p>Document Object Model (DOM)</p> <p>JavaScript language, JSON format, jQuery library, templates (Handlebars / pug)</p> <p>Server-side JavaScript: Node.js environment, React vs AngularJS vs Angular library, Electron platform</p> <p>AJAX technology (including AJAX Push / Comet), providing indexing / positioning of pages</p> <p>Basic Apache configuration (.ht * files, mod_rewrite)</p> <p>Using frameworks, e.g. Django (Python language), Ruby on Rails (Ruby language), ASP.NET (.NET languages), Bootstrap</p> <p>Using ready-made CMS systems, eg Wordpress, creating your own themes</p> <p>Internet of Things (IoT) - intelligent buildings, RFID / NFC, communicating embedded systems based on microcontrollers</p> <p>PROJECT</p> <p>Students create a website that uses the technologies learned at the lecture.</p> <p>1. Choosing a topic, a sketch of the layout of the pages of the website.</p> <p>2. Creating a page layout (HTML + CSS).</p> <p>3. Creating an administration panel in PHP.</p> <p>4. JavaScript elements on the page.</p> <p>5. XML handling elements.</p> <p>6. Applications of AJAX technology.</p> <p>7. Implementation of the website based on the selected framework.</p> |   |                               |
| Prerequisites and co-requisites                                |   |   |                               |
| Assessment methods and criteria                                | Subject passing criteria  | Passing threshold   | Percentage of the final grade |
|  | Lecture exam  | 50.0%   | 30.0%                         |
|  | Project   | 50.0%   | 70.0%                         |
| Recommended reading  | Basic literature  | Jon Duckett, HTML and CSS: Design and Build Websites, John Wiley & Sons 2017<br>David Flanagan, JavaScript: The Definitive Guide: Master the World's Most-Used Programming Language, O'Reilly 2021<br>Matt Zandstra, PHP Objects, Patterns, and Practice, Apress 2017 |                               |
|  | Supplementary literature  | Brian Messenlehner, Jason Coleman, Building Web Apps with WordPress: WordPress as an Application Framework, O'Reilly 2021<br>Ethan Brown, Web Development with Node and Express: Leveraging the JavaScript Stack, O'Reilly 2020                                       |                               |
|  | eResources addresses  | Adresy na platformie eNauczanie:<br>Technologie tworzenia stron internetowych (2022/2023) - Moodle ID: 26710<br><a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=26710">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=26710</a>               |                               |
| Example issues/<br>example questions/<br>tasks being completed | Preparation of a website on a selected topic, using selected technologies.  |   |                               |
| Work placement   | Not applicable  |   |                               |