



## Subject card

|   |   |  |                                     |            |  |         |     |
|---|---|--|-------------------------------------|------------|--|---------|-----|
| Subject name and code                       | Programming of Internet Applications, PG_00046079   |  |                                     |            |  |         |     |
| Field of study                              | Electrical Engineering  |  |                                     |            |  |         |     |
| Date of commencement of studies             | October 2024  | Academic year of realisation of subject                          |                                     |            | 2024/2025  |         |     |
| Education level                             | second-cycle studies  | Subject group  |                                     |            |  |         |     |
| Mode of study                               | Part-time studies   | Mode of delivery   |                                     |            | at the university  |         |     |
| Year of study                               | 1   | Language of instruction  |                                     |            | Polish   |         |     |
| Semester of study                           | 2   | ECTS credits   |                                     |            | 2.0  |         |     |
| Learning profile                            | general academic profile  | Assessment form  |                                     |            | assessment   |         |     |
| Conducting unit                             | Department of Electrified Transportation -> Faculty of Electrical and Control Engineering   |  |                                     |            |  |         |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor  | dr hab. inż. Andrzej Wilk  |                                     |            |  |         |     |
|   | Teachers  | dr hab. inż. Andrzej Wilk  |                                     |            |  |         |     |
| Lesson types and methods of instruction     | Lesson type   | Lecture  | Tutorial                            | Laboratory | Project  | Seminar | SUM |
|   | Number of study hours   | 10.0   | 0.0                                 | 10.0       | 0.0  | 0.0     | 20  |
|   | E-learning hours included: 0.0  |  |                                     |            |  |         |     |
|   | Address on the e-learning platform: <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=21035">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=21035</a>   |  |                                     |            |  |         |     |
| 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   | 20   | 5.0                                 |            | 25.0   |         | 50  |
| Subject objectives                          | The course objective is to create ASP.NET Core MVC web applications in Microsoft Visual Studio. The course covers: Using C# to program controllers, action methods, data models, and data analysis. Using HTML and Razor tags to create view files. Using Cascading Style Sheet Language - CSS to define "frontend" styles.             |  |                                     |            |  |         |     |
| Learning outcomes                           | Course outcome  | Subject outcome  |                                     |            | Method of verification   |         |     |
|   | [K7_U02] is able to prepare and deliver a short oral presentation on a selected technical topic   | Develops a data model in an ASP.NET Core MVC application         |                                     |            | [SU1] Assessment of task fulfilment                                  |         |     |
|   | [K7_W06] has in-depth knowledge of industrial electronics, microprocessor control systems, programmable logic systems and printed circuit design and prototyping computer-aided prototyping   | Not applicable   |                                     |            | [SW3] Assessment of knowledge contained in written work and projects |         |     |
|   | [K7_U03] is able to obtain information from literature, databases and other sources, also in English, draw conclusions, formulate and fully justify opinions. substantiate opinions; is able to identify directions for further learning and implement the process of self-education  | Analyzes the communication model between MVC application classes |                                     |            | [SU3] Assessment of ability to use knowledge gained from the subject |         |     |
|   | [K7_W02] has an in-depth and structured knowledge of electrical measurements electrical measurements, the methods and equipment used for electrical measurements of non-electrical quantities, he/she knows the principles of testing operation tests of electrical equipment, has a structured knowledge of electricity quality issues | Implements the electrical circuit concept in a web application   |                                     |            | [SW3] Assessment of knowledge contained in written work and projects |         |     |

| Subject contents   | <p>Lecture: C# programming language - basics. Object-oriented programming basics. Classes, interfaces, objects, encapsulation, inheritance, polymorphism. Delegates, anonymous methods, lambda expressions. Collection classes. Core MVC application structure. Defining controllers, data models and views. Communication between MVC application classes. Action methods in HttpsGET and HttpsPOST mode. Developing view files - HTML and Razor. Defining cascading style sheets - CSS.</p> <p>Laboratory: Developing an ASP.NET Core MVC application implementing a passive RLC filter.</p> |  |                   |                               |                             |       |        |  |  |
|--|--|--|-------------------|-------------------------------|-----------------------------|-------|--------|--|--|
| Prerequisites and co-requisites                                |  |  |                   |                               |                             |       |        |  |  |
| Assessment methods and criteria                                | <table border="1"> <thead> <tr> <th data-bbox="454 553 788 584">Subject passing criteria</th> <th data-bbox="799 553 1139 584">Passing threshold</th> <th data-bbox="1144 553 1473 584">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="454 591 788 622">30% lecture, 70% laboratory</td> <td data-bbox="799 591 1139 622">60.0%</td> <td data-bbox="1144 591 1473 622">100.0%</td> </tr> </tbody> </table>  | Subject passing criteria   | Passing threshold | Percentage of the final grade | 30% lecture, 70% laboratory | 60.0% | 100.0% |  |  |
| Subject passing criteria                                       | Passing threshold  | Percentage of the final grade  |                   |                               |                             |       |        |  |  |
| 30% lecture, 70% laboratory                                    | 60.0%  | 100.0%   |                   |                               |                             |       |        |  |  |
| Recommended reading  | Basic literature   | <p>1. John Sharp: Microsoft Visual C# 2013. Microsoft Press.</p> <p><a href="#">2. Mugilan T. S. Ragupathi, Anuraj Parameswaran</a>: Learning ASP.NET Core MVC, Packed Publishing, 2016</p>                        |                   |                               |                             |       |        |  |  |
|  | Supplementary literature   | <p><a href="#">Mark J. Price</a>: C# 11 i .NET 7 dla programistów aplikacji wieloplatformowych. Twórz aplikacje, witryny WWW oraz serwisy sieciowe za pomocą ASP.NET Core 7, Blazor i EF Core 7, Helion, 2022.</p> |                   |                               |                             |       |        |  |  |
|  | eResources addresses   | Adresy na platformie eNauczanie:   |                   |                               |                             |       |        |  |  |
| Example issues/<br>example questions/<br>tasks being completed | <p>1. What is the purpose of a controller in an MVC application?<br/>2. The mechanism for transferring data between a controller and a view file.</p>  |  |                   |                               |                             |       |        |  |  |
| Work placement   | Not applicable   |  |                   |                               |                             |       |        |  |  |

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