

1.3. Module/ course form

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| To be completed by Course Team | Module name : Block of elective subjects | | | | Module code: M19 | | |
| | Course name: Internet applications II | | | | Course code: PBD_M4 | | |
| | Faculty: Institute of Applied Informatics | | | | | | |
| | Field of study: Informatics | | | | | | |
| | Mode of study : Full-time | | Learning profile: Practical | | Speciality: | | |
| | Year/ semester: 3/6 | | Module/ course status: mandatory | | Module/ course language: Polish/English | | |
| | Type of classes | lecture | lessons | lab | project | tutorial | other (please specify) |
| | Course load | | | 30 | 15 | | |

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| Module/ course coordinator | Daria Rybarczyk, MSc Eng. |
| Lecturer | Daria Rybarczyk, MSc Eng. |
| Module/ course objectives | The aim of the course is to acquire skills in designing and developing web applications using the ASP.NET technology. Students will learn how to create web applications in the ASP.NET Web Forms model based on server controls and using the MVC design pattern, which forces the application to be divided into three independent layers: data model, graphic interface and operation logic. Knowledge and skills acquired in this subject can be regarded as an introduction to prepare the student for the MS 70-486 exam: Developing ASP.NET MVC Web Applications. |
| Entry requirements | Podstawy programowania w języku C # w środowisku Visual Studio, podstawy baz danych z naciskiem na MS SQL Server, wprowadzenie do aplikacji internetowych. |

| LEARNING OUTCOME | | |
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| Nr | LEARNING OUTCOME DESCRIPTION | Learning outcome reference |
| 1 | Knows the types and use of ASP.NET controls. | K_W15 |
| 2 | He knows the mechanisms for securing websites, in particular methods of authentication, authorization and access control. | K_W17 |
| 3 | Understands the structure of Internet applications made by model, view and controller. | K_W07 K_W13 |

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| 4 | He knows the structure and specificity of the selected template for building web applications implementing the MVC model. | K_W11 K_W13 |
| 5 | Creates web applications in the ASP.NET Web Forms model. | K_U19 K_U16 |
| 6 | Creates web applications in the ASP.NET MVC model. | K_U19 K_U16 |
| 7 | Builds network services and applications using services. | K_U16 |
| 8 | Is able to implement an advanced template and create a website based on it. | K_U19 |
| 9 | He declares the need for continuous training and professional development. | K_U06 |
| 10 | He adheres to the principles of professional ethics, in particular honesty and respect for copyrights. | K_K03 |
| 11 | Describes, positions and diversifies the scope of knowledge and skills they possess. | K_K01 |

CURRICULUM CONTENTS

Lecture

1. Introduction to ASP.NET. ASP.NET Web server controls. Validation of input data on forms.
2. Work with master pages. Site navigation, themes and skins.
3. Types of connections with data sources. Managing data connections.
4. Data management in ADO.NET, LINQ technology and Entity Framework.
5. ASP.NET Ajax, use of JavaScript and JQuery library.
6. User management, permissions and other aspects of ASP.NET website security.
7. Application status information management.
8. Construction of the ASP.NET website in accordance with the MVC template.
9. Construction of the ASP.NET website in accordance with the MVC template - continuation.
10. Publishing ASP.NET web applications.
11. Building and using network services (Web Service, WCF Service).
12. Files and streams.

At the laboratory, students perform tasks prepared by the teacher in the above range.

The tasks are checked in class. Students who do not finish tasks in class or are absent complete the indicated stages at home.

Project

Working individually or in teams of two, students will design and implement a website using independently defined data sources. The website's functionality is approved by the lecturer and is wider in the case of a team task.

As part of the project, students will set up a database on the database server, create its users with the appropriate permissions. They will design database objects and connect them with appropriate compounds maintaining the normalization criteria. They will use the ORM system for the selected project implementation technology.

Students will build an application to support the designed database, enabling login, CRUD operations (downloading data from the database, modifying and saving) and implementing the assumed functionality.

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| Basic literature | 1. Bill Evjen, Scott Hanselman, Devin Rader, Professional ASP.NET 4 in C# and VB eBook, SBN-13: 978-0470502204, ISBN-10: 0470502207, Wrox 2011 |
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| | 2. Lars Powers, Mike Snell, Microsoft Visual Studio 2015 Unleashed, ISBN13 9780672337369, ISBN 0672337363, Sams Publishing 2015 |
| Additional literature | |

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| Teaching methods | 1. Short introductory lecture with multimedia presentation. 2. Exercises in the computer laboratory. 3. A practical project implemented during design exercises and as own work at home - project method. 4. Housework. | |
| | Assessment method | Learning outcome number |
| | During design classes, the student implements the website in accordance with the specification specified by the teacher. | 01, 02, 03, 04, 05, 06, 08, 10 |
| | During laboratory classes the student solves the tasks defined by the teacher. | 01, 02, 03, 04, 05, 06, 07, 09 |
| | During laboratory classes the student performs tasks checking practical skills at the first (mid-term) test. | 01, 02, 05, 11 |
| | During laboratory classes the student performs tasks checking practical skills at the second (final) test. | 03, 04, 06, 11 |
| Form and terms of an exam | Components of the final grade in the subject: 50% - result of passing the laboratory, 50% - grade from the project. | |

| STUDENT WORKLOAD | | |
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| | Number of hours | |
| | In all | including practical |
| Participation in lectures | | |
| Independent study of lecture topics | | |
| Participation in tutorials, labs, projects and seminars | 45 | 45 |
| Independent preparation for tutorials* | 35 | 35 |
| Preparation of projects/essays/etc.* | 45 | 45 |
| Preparation/ independent study for exams | | |
| Participation during consultation hours | 2 | |
| Other | | |
| TOTAL student workload in hours | 127 | 125 |
| Number of ECTS credit per course unit | 5 ECTS | |
| Number of ECTS points assigned to the scientific discipline | Technical informatics and telecommunications 5 ECTS | |
| Number of ECTS credit associated with | 4,9 ECTS | |

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| practical classes | |
| Number of ECTS for classes that require direct participation of professors | 47 1,9 ECTS |