

SYLLABUS OF A MODULE

Polish name of a module	Zaawansowane Programowanie Internetowe
English name of a module	Advanced Internet Programming
ISCED classification - Code	<i>0613</i>
ISCED classification - Field of study	<i>Software analysis and development</i>
Languages of instruction	<i>English</i>
Level of qualification:	<i>1</i>
Number of ECTS credit points	<i>6</i>
Examination:	<i>EW</i>
Available in semester:	<i>Y - both</i>

Number of hours per semester:

Lecture	Tutorials	Laboratory	Seminar	E-learning	Project
30		30			

MODULE DESCRIPTION

MODULE OBJECTIVES

- O1. Introduction students with advanced methods and techniques for developing web applications.
- O2. Students will obtain the practical skills in designing and developing web applications.

PRELIMINARY REQUIREMENTS FOR KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Object-oriented programming.
2. Web pages programming.

LEARNING OUTCOMES

- LO 1 – The student has knowledge in developing advanced web applications.
- LO 2 – The student has skills in developing advanced web applications.
- LO 3 – The student has competences in developing advanced web applications.

MODULE CONTENT

Type of classes – lecture	Number of hours
Lec 1 - Introduction to web design and web development.	2
Lec 2 - HTML5, CSS3 Javascript, jQuery, Bootstrap.	2
Lec 3 - Introduction to ASP.NET MVC Core.	2
Lec 4 - Database and data access layer (MS SQL Server, Entity Framework).	2
Lec 5 - Design patterns and best practices: (e.g., Singleton, UnitOfWork, Generic Repository, DI, S.O.L.I.D., K.I.S.S., DRY).	2
Lec 6 – Service Layer Architecture, Service Layer.	2
Lec 7 - Controllers, Views and Partial Views,	2
Lec 8 -9 - ASP.NET Identity Core.	2
Lec 10 - URL binding, Routing.	2
Lec 11 - Application state management (Cookies, Session, TempData).	2
Lec 12 - Asynchronous requests (AJAX).	2
Lec 13 - ASP.NET Core Web Api	2
Lec 14 - Basics of React	2
Lec 15 – Real-Time Applications (SignalR)	2
Sum	30
Type of classes– laboratory.	Number of hours
Lab 1 – Introduction to tools and frameworks.	2
Lab 2-3 – Creating data model.	4
Lab 4-5 – Entity Framework. Creating migrations and data access layer.	4
Lab 6-10 – Designing and creating services. Service Layer. SOA.	8
Lab 10 - Applying ASP.NET Identity to the web app.	2
Lab 11-12 – Creating AJAX requests.	4
Lab 13 – Adding WEB API controllers. REST. Web API.	2
Lab 14 - 15 – Creating Real-Time applications. SignalR.	4
Sum	30

TEACHING TOOLS

1. – Lecture. Multimedia presentations.
2. – Lab instructions.
3. – Code examples.
4. – Developing tools and testing tools.

WAYS OF ASSESSMENT (F – FORMATIVE, S – SUMMATIVE)

F1. - assessment of preparation for laboratory exercises
F2. - assessment of the ability to apply the acquired knowledge while doing the exercises
F3. - assessment of activity during classes
S1. - assessment of the ability to solve the problems posed and the manner of presentation obtained results - pass mark *
S2. - assessment of mastery of the teaching material being the subject of the lecture - exam

*) in order to receive a credit for the module, the student is obliged to attain a passing grade in all laboratory classes as well as in achievement tests.

STUDENT'S WORKLOAD

L.p.	Forms of activity	Average number of hours required for realization of activity
1. Contact hours with teacher		
1.1	Lectures	30
1.2	Tutorials	
1.3	Laboratory	30
1.4	Seminar	
1.5	Project	
1.6	Examination	3
Total number of contact hours with teacher:		63
2. Student's individual work		
2.1	Preparation for tutorials and tests	
2.2	Preparation for laboratory exercises, writing reports on laboratories	33
2.3	Preparation of project	
2.4	Preparation for final lecture assessment	
2.5	Preparation for examination	30
2.6	Individual study of literature	24
Total number of hours of student's individual work:		87
Overall student's workload:		150
Overall number of ECTS credits for the module		6 ECTS
Number of ECTS points that student receives in classes requiring teacher's supervision:		2,52 ECTS
Number of ECTS credits acquired during practical classes including laboratory exercises and projects:		2,52 ECTS

BASIC AND SUPPLEMENTARY RESOURCE MATERIALS

1.	M.Masse „REST API Design Rulebook” O'Reilly
2.	A. Freeman “Expert ASP.NET Web API for MVC Developers” Apress 2014
3.	J. Kurtz, B. Wortman “ASP.NET Web API 2” Apress 2014
4.	M.Masse „REST API Design Rulebook” O'Reilly
5.	A. Freeman “Expert ASP.NET Web API for MVC Developers” Apress 2014
6.	J. Kurtz, B. Wortman “ASP.NET Web API 2” Apress 2014
7.	T. Ater “Building Progressive Web Apps. Bringing the Power of Native to the Browser” O'Reilly 2017
8.	D.A. Hume “Progressive Web Apps”, Manning 2017

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