Course Name : .NET Technology

Course Code	Course Type	Regular Semester	Lecture (hours/week)	Seminar (hours/week)	Lab. (hours/week)	Credits	ECTS
CMP 313	B	Fall	2.00	0.00	2.00	3.00	6.00

Lecturer	Ervis Trupja, Msc
Assistant	Erjola Osmani, Msc
Course language	Albanian
Course level	Bachelor
Description	The course provides basic knowledge for building web applications based on .Net technologies. At the end of this course, students will be familiar with ASP.NET (C #), SQL Server platforms and will be able to create interactive web applications. Throughout this course, students will build complete working software, which will be enough for students to acquire skills of group development work and to apply the knowledge gained during this course to build their personal or professional applications.
Objectives	During this course, students will learn to build full-stack applications using .NET technologies. HTML, CSS, and JavaScript will be used to build the front-end. C# and Web API will be used to build the back-end. For the part of communication with the database, we will use Entity Framework and SQL.
Core Concepts	HTML CSS JAVASCRIPT C# MODELS WEB API ENTITY FRAMEWORK SQL HTTP REQUESTS & RESPONSES

Course Outline

Week	Topic
1	WEB applications, architecture Web applications are among the most used applications in everyday life, as they have a wider range of access. Architectural WEB applications are as easy as they are complex depending on the complexity of the application
2	Client-side Programming. HTML presentation. Each full-stack application has 3 components. Front-end, Back-end, and database. The front-end is the visual part and will be built with HTML, CSS, and JavaScript.
3	Object document model-DOM DOM is the best way to get and manipulate data at the front-end. DOM manipulation can be done directly with JavaScript or jQuery
4	Layout construction based on tables and CSS Throughout the course, we will build some forms and tables using HTML and CSS. The functionality will be added via JavaScript.
5	Introduction to ASP, architecture ASP.NET is the framework that we will use to build the back-end part. The programming language used will be C # and the framework will be .NET Core 5.0
6	C # presentation, page lifecycle, controllers C # is one of the most widely used programming languages. It is created by Microsoft and throughout the course will be used to build all the main components of the application.
7	Controllers in .NET - continuation To control the flow of an application in .NET applications and beyond we use controllers. In this course, students will learn how to build controllers in C #.
8	Middterm
9	State management Situation management For a better experience in applications, it is very important to understand the concept of state management.
10	Navigation/Page navigation Once an application is built to navigate from one page to another we use a concept called navigation. Navigation helps us to easily switch from one page to another for the display of new data.

11	Input validation checks When we provide new data in a form it is very important that the data we provide is controlled so that the user provides only the necessary data. Input validation is done both at the front-end and at the back-end.
12	ASP connection to SQL An application makes sense when front-end manipulated data is stored somewhere in a database. Throughout this course, we will use a SQL database.
13	Entity Framework To communicate a Web API with the SQL Database in our case we will use a framework called Entity Framework which serves as an intermediary between the models of an API and the tables of a database.
14	Form authentication Authentication is the first step commonly used to secure applications. Through authentication you allow your application to be used only by authorized persons
15	AJAX controls in ASP.NET, JQuery The controllers in AJAX are used to send an HttpRequest in the back-end and to receive a response in the front-end.
16	Final Exam

Prerequisites	The student must attend the course at a minimum rate of 75%.
Literature	• .Web Applications Development with Microsoft® .NET Framework 4 Tony Northrup Mike Snell
References	• Beginning ASP.NET 4.5.1 in C# and VB, Imar Spaanjaars

Course Outcome

1	At the end of the course students will have basic knowledge for building Web applications based on .NET technology
2	Students will be familiar with ASP.NET (C #), SQL Server platforms and will be able to create interactive web applications

Course Evaluation

In-term Studies	Quantity	Percentage
Midterms	1	30
Quizzes	0	0
Projects	0	0
Term Projects	0	0
Laboratory	0	0
Class Participation	1	15
Total in-term evaluation percent		**45**
Final exam percent		**55**
Total		**100**

ECTS Workload (Based on Student Workload)

Activities	Quantity	Duration (hours)	Total (hours)
Course duration (Including the exam week: 16x Total hours of the course)	16	4	64
Study hours outside the classroom (Preparation, Practice, etc.)	14	4	56
Duties	0	0	0
Midterms	1	12	12
Final Exam	1	18	18
Other	0	0	0
Total Work Load			**150**
Total Work Load / 25 (hours)			**6.00**
ECTS			**6.00**