

Curriculum fall 2016

Primary

- Freeman, Adam: *Pro ASP.NET MVC 5*. Apress 2014. Chapter 1, 2 (pp. 11- 36), 14, 15, 16 (pp. 415-29), 20 (pp. 568-585), 21, 22, 24, 25, 27.
- *Object-oriented programming in C#*. An adopted version of *C# Tutorial* at <http://zetcode.com/lang/csharp> by Jes Arbov
- Dykstra, Tom and Rick Anderson: *Getting Started with Entity Framework 6 Code First using MVC 5*, pp. 1-74, 92-103, 124-191. Pdf-file (April, 2014):
<http://download.microsoft.com/download/0/F/B/0FBFAA46-2BFD-478F-8E56-7BF3C672DF9D/Getting%20Started%20with%20Entity%20Framework%206%20Code%20First%20using%20MVC%205.pdf>.

Website (last updated October 22, 2015):

<https://www.asp.net/mvc/overview/getting-started/getting-started-with-ef-using-mvc/creating-an-entity-framework-data-model-for-an-asp-net-mvc-application>.

Supplementary

- Pluralsight videos

Exam

- 30 min. preparation.
 - All study aids are allowed (not mobile)
 - To the examination room you are allowed to carry an outline made in the preparation room (it might a PowerPoint), plus examples from your exercises and assignments (located on your laptop).
- 30 min. of examination incl. deliberation
 - 5-10 min. presentation
Then dialogue with questions and answers about the topic
- Rating: 7-point scale.
- Attendance at each exam requires that the student has handed in the module's compulsory tasks and that these have been approved
- An exam may be retaken if it is not passed.

Backend Programming: Main topics and keywords

ASP.NET MVC, Visual Studio, and C# Language (foundation)

[Freeman] chap 1, 2 (pp. 11- 36), 14

[PowerPoint] Lesson 1, *ASP.NET MVC*

Keywords: *ASP.NET MVC, Visual Studio, variables, data types, assignment, type conversion, DateTime and TimeSpan, namespace, if-statement, for-loops, foreach.*

Types, Objects

[Object-oriented programming in C#]

[PowerPoint] Lesson 2-3, *Object oriented programming 1-2*

Keywords: *class, class declaration, object, fields, properties, methods, parameters, method overloading, constructor, static members, inheritance, casting objects.*

HTML Helpers in Views

[Freeman] chap. 21-22

[PowerPoint] Lesson 5, *HTML Helpers in Views*

Keywords: *Form Helper Methods, Input HTML Helpers, Strongly Typed Input HTML Helpers, SelectListItem and Lists for dropdown lists, Templated Helper Methods, Model Metadata*

URL Routing

[Freeman] chap. 15, 16 (pp. 415-29), 24

[PowerPoint] Lesson 6, *URL Routing, Outgoing URLs in Views, and Model binding*

Keywords: *User-friendly URLs, ASP.NET Routing, URL segments, Route Configuration, Route Constraints, Static URL Segment, Routes order in configuration file, Attribute Routing, Outgoing URLs in Views.*

Model Binding

[Freeman] chap. 15, 16 (pp. 415-29), 24

[PowerPoint] Lesson 6, *URL Routing, Outgoing URLs in Views, and Model binding*

Keywords: *Model Binding, The Binding Process, Binding to complex and simple types.*

Composing User Interfaces with ASP.NET MVC

[Freeman] pp. 20 (pp. 568-585)

[PowerPoint] Lesson 7, *Views*

Keywords: *Views, Strongly Typed Views, Layout files, Sections, Partial Views, Child Actions, Child Action Methods, Areas.*

Entity Framework

[Dykstra and Anderson] pp. 1-74, 92-103, 124-191

[PowerPoint] Lesson 9-10, *Entity Framework*

Keywords: *Entity Framework, Entity Framework Workflows, DbContext class, POCO data classes, Installing Entity Framework, connectionString in web.config file, Code First Migrations, Seed method, Fluent API, Inspecting SQL.*

Model Validation

[Freeman] chap. 25

[PowerPoint] Lesson 11, *Model Validation Techniques*

Keywords: *Manual Validation, Property Validation Attributes, Displaying Validation Messages, Regular Expressions, Custom Property Validation Attributes, Model Validation Attributes, Self-Validating Models, Client-Side Validation and Unobtrusive JavaScript validation, Remote Validation.*

REST and ASP.NET Web API

[Rodriguez]

[Freeman] chap. 27

[PowerPoint] Lesson 13, *Web API*

Keywords: *REST, ASP.NET Web API, Web API Routing, CRUD operations with Web API, HTTP Methods Naming Convention, Content negotiation, Override HTTP Methods Naming Convention, Data Transfer Objects (DTOs), Differences between ASP.NET MVC and Web API.*

Sample Exam Questions

Classes and objects

You may

- present at least one pre-defined class in ASP.NET Framework
- show one of your own user-defined classes
- explain the different elements in a class: fields, properties, methods, accessibility (visibility), constructors
- explain encapsulation
- demonstrate the use of one of your own classes in projects or exercises
- discuss the organization of classes in an ASP.NET MVC project

Model Validation

You may

- introduce model validation in ASP.NET MVC
- present property validation attributes and explain how to use them
- demonstrate how to create a custom property validation attribute
- present different options for displaying validation error messages
- show how to add client side validation to a HTML form and explain the concept of unobtrusive JavaScript
- discuss the importance of client side and server side validation