



CS 431

USER INTERFACE DESIGN

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ANNOTATION

The discipline is a basic course for the specialties in fields 4.6 and 5.3.

The course introduces students to the principles of application development using Microsoft technologies: the .NET platform and the C# programming language. The object-oriented programming paradigm and the Visual Studio Integrated Development Environment put a powerful visual programming toolkit in the hands of the student. The knowledge acquired during training is a necessary prerequisite for solving real practical tasks using modern .NET technologies.

MAIN OBJECTIVES

The main goal of the course is to introduce students to the principles of application development using Microsoft technologies: the .NET platform and the C# programming language. Passing the training course, the student will:

- know the platform .NET ;
- know the C# programming language;
- use an object-oriented programming approach;
- develop software products using Microsoft technologies.

PREREQUISITES

The discipline requires prior training in "Programming" and "Object-Oriented Programming".

STATUS AND STRUCTURE

Specialty	Status	Credits	Full-time study				Part-time study			
			L	S	P	Total	L	S	P	Total
Software Engineering	Mandatory	4	20	20	-	40	10	10	-	20
Computer Systems and Technologies	Selectable	6	30	30	-	60	15	15	-	30

COURSE CONTENT

Topic 1. Platform architecture. Integrated development environment.

Topic 2. Punctuation. Variables and data. Identifiers. Expressions, operators, and operands.

Topic 3. Controlling the program flow. Conditional operator. Cycles.

Topic 4. Methods. Parameters. Returned values. References.

Topic 5. Symbols. Strings. Arrays.

Topic 6. Exceptions and errors. Catching exceptions. Throwing an exception.

Topic 7. Entry and exit. Streams, readers and writers. Files and directories.

Topic 8. Object-oriented programming. Classes, data and methods, visibility.

Topic 9. Creating and using objects. Constructors. Inheritance. Hierarchies.

Topic 10. Forms, dialogues and controls. Catching events.

Topic 11. Desktop, mobile and universal applications.

SEMINAR EXERCISES

Topic 1. Console Applications.

Topic 2. Program Flow Management.

Topic 3. Working with input and output.

Topic 4. Exception Handling.

Topic 5. Writing Classes.

Topic 6. Desktop Applications.

Topic 7. Exchange of information in applications.

Topic 8. Mobile Applications.

Topic 9. Parsing information from the Internet.

Topic 10. Universal Applications.

Topic 11. Consuming Web Services.

PLANNED LEARNING ACTIVITIES AND TEACHING METHODS

1. At the lectures, students get theoretical knowledge of application programming using Microsoft technologies: the .NET platform and the C# language.
2. At the seminar exercises, students acquire practical skills for application development using Microsoft technologies: the .NET platform and the C# language.
3. The course project requires work during the semester and personal contact with the teacher.
4. Electronic materials support the learning process of students and expand the possibilities of the teacher in the implementation of ongoing control.

COURSE PROJECT

The course project is an individual topic for each student, set in advance by the teacher of the discipline, aimed at creating an application using technology . NET and C#. The project is presented and defended on the day of the exam. The defense of the project consists of briefly explaining and demonstrating the functionality of the application to the teacher of the discipline, thus the student demonstrates the level of the material he has mastered.

EVALUATION METHOD

To form the grade, the student collects points, the maximum value of which is 100.

The distribution of points for the evaluated activities is as follows:

1.	Exercises	50 points
2.	Project	50 points

The overall grade is determined by the sum of the points collected from the exercises and project. The scheme for obtaining final grade according to the point system is as follows: from 36 to 50 points - assessment Average (3); from 51 to 65 points – grade Good (4); from 66 to 80 points – rating Very Good (5); over 81 points – grade Excellent (6).

RECOMMENDED LITERATURE

1. TABINA HENDRICK. UX/UI DESIGN COMPLETE GUIDE 2022: Complete Beginner to Expert Guide That Teaches Everything You Need to Know About UX/UI Design Including Tips & ... Become a Great Designer in Less Than 7 Days. ISBN 979-8418174895. 2022.
2. Минчев Д., Developing Cross-Platform Apps, БСУ, Бургас, 2018, ISBN: 978-619-7126-66-2 (PDF), 978-619-7126-67-9 (MOBI), 978-619-7126-68-6 (EPUB), <https://dimitarminchev.gitbooks.io/developing-cross-platform-apps>
3. Наков С. Принципи на програмирането със C#. Фабер, Велико Търново, 2018, ISBN 978-619-00-0778-4. <https://www.introprogramming.info/intro-csharp-book/>
4. Наков С. Основи на програмирането със C#, Faber Publishing, София, 2017, ISBN 978-619-00-0635-0 <https://csharp-book.softuni.bg/>
5. Минчев Д., Жълта книга по C#, Божич, Бургас, 2013, ISBN: 978-954-9925-84-5.
6. Rob Miles, C# Yellow Book 2014, Edition 5.0, Department of Computer Science in the University of Hull, January 2014.
7. Rob Miles, C# Yellow Book 2012, Edition 4.0, Department of Computer Science in the University of Hull, August 2012.
8. Наков С. и колектив, Въведение в програмирането със C#, Фабер, Велико Търново, 2011, ISBN: 978-954-400-527-6.
9. Наков С. и колектив, Програмиране за .NET Framework (Том 1), Барс, София, 2005, ISBN: 954-775-505-6.
10. Наков С. и колектив, Програмиране за .NET Framework (Том 2), Барс, София, 2006, ISBN: 954-775-672-9, ISBN: 978-954-775-672-4.
11. Наков П., Добриков П., Програмиране ++= Алгоритми;, TopTeam Co., София, 2002, ISBN: 954-8905-06-X.
12. <http://www.robmiles.com/c-yellow-book/>

13. <http://www.introprogramming.info/intro-csharp-book/>
14. <http://www.devbg.org/dotnetbook/>
15. <http://www.programirane.org/>
16. <http://www.microsoft.com/net/>
17. XAML Developer Reference., Microsoft Press, 2011, ISBN 978-0-7356-5896-7.
18. XAML in a Nutshell., O'Reilly Press, 2006, ISBN 978-0-5965-2673-3
19. XAML Overview, <http://msdn.microsoft.com/en-us/library/ms752059.aspx>
20. Blend for Visual Studio 2012 (*Windows Store apps*), <http://msdn.microsoft.com/en-us/library/windows/apps/jj129478.aspx>
21. Available now: Blend for Visual Studio 2012, <http://blendinsider.com/technical/available-now-blend-for-visual-studio-2012-2012-08-15/#more-1166>
22. Getting started: XAML authoring with Microsoft Blend for Visual Studio 2012, <http://blendinsider.com/technical/getting-started-xaml-authoring-with-blend-for-vs-2012-2012-08-30/>
23. Elena Kosinska, Chris Leeds, Microsoft Expression Blend 4 Step by Step., Microsoft Press, 2011, ISBN 9780735639010.
24. Gurdy Leete, Mary Leete, Microsoft Expression Blend Bible., 2007, ISBN 978-0-4700-5503-8.

Additional study materials on the discipline are available in the e-learning platform of Burgas Free University, available on the Internet at: <https://e-learn.bfu.bg>