

<b>DOT NET FRAMEWORK FOR APPLICATION DEVELOPMENT</b> <b>[As per Choice Based Credit System (CBCS) scheme]</b> <b>(Effective from the academic year 2016 -2017)</b> <b>SEMESTER – V</b>			
Subject Code	15CS564	IA Marks	20
Number of Lecture Hours/Week	3	Exam Marks	80
Total Number of Lecture Hours	40	Exam Hours	03
<b>CREDITS – 03</b>			
<b>Course objectives:</b> This course will enable students to <ul style="list-style-type: none"> <li>Inspect Visual Studio programming environment and toolset designed to build applications for Microsoft Windows</li> <li>Understand Object Oriented Programming concepts in C# programming language.</li> <li>Interpret Interfaces and define custom interfaces for application.</li> <li>Build custom collections and generics in C#</li> <li>Construct events and query data using query expressions</li> </ul>			
<b>Module – 1</b>			<b>Teaching Hours</b>
<b>Introducing Microsoft Visual C# and Microsoft Visual Studio 2015:</b> Welcome to C#, Working with variables, operators and expressions, Writing methods and applying scope, Using decision statements, Using compound assignment and iteration statements, Managing errors and exceptions <b>T1: Chapter 1 – Chapter 6</b>			<b>8 Hours</b>
<b>Module – 2</b>			
<b>Understanding the C# object model:</b> Creating and Managing classes and objects, Understanding values and references, Creating value types with enumerations and structures, Using arrays <b>Textbook 1: Ch 7 to 10</b>			<b>8 Hours</b>
<b>Module – 3</b>			
Understanding parameter arrays, Working with inheritance, Creating interfaces and defining abstract classes, Using garbage collection and resource management <b>Textbook 1: Ch 11 to 14</b>			<b>8 Hours</b>
<b>Module – 4</b>			
<b>Defining Extensible Types with C#:</b> Implementing properties to access fields, Using indexers, Introducing generics, Using collections <b>Textbook 1: Ch 15 to 18</b>			<b>8 Hours</b>
<b>Module – 5</b>			
Enumerating Collections, Decoupling application logic and handling events, Querying in-memory data by using query expressions, Operator overloading <b>Textbook 1: Ch 19 to 22</b>			<b>8 Hours</b>
<b>Course outcomes:</b> The students should be able to: <ul style="list-style-type: none"> <li>Build applications on Visual Studio .NET platform by understanding the syntax and semantics of C#</li> <li>Demonstrate Object Oriented Programming concepts in C# programming language</li> <li>Design custom interfaces for applications and leverage the available built-in interfaces in building complex applications.</li> <li>Illustrate the use of generics and collections in C#</li> <li>Compose queries to query in-memory data and define own operator behaviour</li> </ul>			
<b>Question paper pattern:</b>			

The question paper will have TEN questions.  
There will be TWO questions from each module.  
Each question will have questions covering all the topics under a module.  
The students will have to answer FIVE full questions, selecting ONE full question from each module.

**Text Books:**

1. John Sharp, Microsoft Visual C# Step by Step, 8<sup>th</sup> Edition, PHI Learning Pvt. Ltd. 2016

**Reference Books:**

1. Christian Nagel, "C# 6 and .NET Core 1.0", 1st Edition, Wiley India Pvt Ltd, 2016.  
Andrew Stellman and Jennifer Greene, "Head First C#", 3rd Edition, O'Reilly Publications, 2013.
2. Mark Michaelis, "Essential C# 6.0", 5th Edition, Pearson Education India, 2016.
3. Andrew Troelsen, "Prof C# 5.0 and the .NET 4.5 Framework", 6th Edition, Apress and Dreamtech Press, 2012.