DOT NET FRAMEWORK FOR APPLICATION DEVELOPMENT
[As per Choice Based Credit System (CBCS) scheme]
(Effective from the academic year 2016 -2017)
SEMESTER – V

Subject Code	15CS564	IA Marks	20
Number of Lecture Hours/Week	3	Exam Marks	80
Total Number of Lecture Hours	40	Exam Hours	03

CREDITS – 03

Course objectives: This course will enable students to

- Inspect Visual Studio programming environment and toolset designed to build applications for Microsoft Windows
- Understand Object Oriented Programming concepts in C# programming language.
- Interpret Interfaces and define custom interfaces for application.
- Build custom collections and generics in C#
- Construct events and query data using query expressions

Module – 1	**Teaching Hours**
Introducing Microsoft Visual C# and Microsoft Visual Studio 2015: 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 **T1: Chapter 1 – Chapter 6**	**8 Hours**
Module – 2	
Understanding the C# object model: Creating and Managing classes and objects, Understanding values and references, Creating value types with enumerations and structures, Using arrays **Textbook 1: Ch 7 to 10**	**8 Hours**
Module – 3	
Understanding parameter arrays, Working with inheritance, Creating interfaces and defining abstract classes, Using garbage collection and resource management **Textbook 1: Ch 11 to 14**	**8 Hours**
Module – 4	
Defining Extensible Types with C#: Implementing properties to access fields, Using indexers, Introducing generics, Using collections **Textbook 1: Ch 15 to 18**	**8 Hours**
Module – 5	
Enumerating Collections, Decoupling application logic and handling events, Querying in-memory data by using query expressions, Operator overloading **Textbook 1: Ch 19 to 22**	**8 Hours**

Course outcomes: The students should be able to:

- Build applications on Visual Studio .NET platform by understanding the syntax and semantics of C#
- Demonstrate Object Oriented Programming concepts in C# programming language
- Design custom interfaces for applications and leverage the available built-in interfaces in building complex applications.
- Illustrate the use of generics and collections in C#
- Compose queries to query in-memory data and define own operator behaviour

Question paper pattern:

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, 8th 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.