Module
Presenter's Manual

for

**Application
Programming in C#**

Effective From: April 2017
Ver. 1.0

Amendment Record

Version No.	Effective Date	Change	Replaced Pages
1.0	April 2017	New	-

Table of Contents

1. Introduction

At the end of this course, students will be able to:

 ➢ Understand the architecture of .NET Framework 4.5
 ➢ Work with the Visual Studio 2012 IDE
 ➢ Learn the object-oriented capabilities of C# program
 ➢ Gain the knowledge about the new features of C#.
 ➢ Use statements and expressions in C#
 ➢ Learn the various programming constructs in C#
 ➢ Understand the delegates, events, and iterators
 ➢ Learn the object initializers and collection initializers
 ➢ Understand the namespaces and exception handling in C#
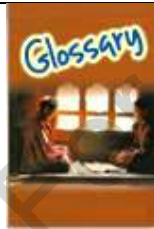
2. Information on Session Allocation

Module	Online Hours
Application Programmming in C#	36

3. Session Deliverables

To aid the teaching process, following are the deliverables

(*Faculties can access eBooks and other components in Onlinevarsity through Aptrack*.)

Resources available on Onlinevarsity:

Icons	Feature - Description / Functionality
Learner's Guide	***Download eBook -*** Student has the option to download the subject related e-book and read offline
Glossary	***Glossary -*** Student can access a list of subject related specialized words with their definitions.
FAQ	***FAQ -*** Student can access frequently asked questions and their answers

	Practice 4 Me - Student can test and evaluate their understanding of module related topics.
	Work Assignments - Student can solve scenario based lab assignments (Hands-on). The faculty will evaluate and give their feedbacks.
	References - Student can access additional subject related material for reading.
	Feedback - Student can provide feedback on the course material
	Ask to Learn – Student can submit subject related technical queries. Queries submitted will be directed to the particular course coordinator/head.

4. Week-wise Session Schedule

- **A Session has duration of 2 hours**

Week	Day 1	Day 2	Day 3	Day 4
1	**Session 1** **C# – TL1**	**Session 2** **C# –TL2**	**Session 3** **C# – TL3**	**Session 4** **C# – TL4**
2	**Session 5** **C# – TL5**	**Session 6** **C# – TL6**	**Session 7** **C# – TL7**	**Session 8** **C# – TL8**
3	**Session 9** **C# – TL9**	**Session 10** **C# – TL10**	**Session 11** **C# – TL11**	**Session 12** **C# – TL12**
4	**Session 13** **C# – TL13**	**Session 14** **C# – TL14**	**Session 15** **C# – TL15**	**Session 16** **C# – TL16**
5	**Session 17** **C# – TL17**	**Session 18** **C# – TL18**		

C#: Application Programming in C#
TL: Online Session

5. Session Coverage

Session No.	Session Title	Session Details	Deliverables' Mapping
1	C# – TL1	All the topics as listed below from Session 1 and Session 2 of *Application Programming in C#* book should be covered in this session. **Session 1 – Getting Started with C#** ➢ Define and describe the .NET Framework ➢ Explain the C# language features ➢ Define and describe the Visual Studio 2012 environment ➢ Explain the elements of Microsoft Visual Studio 2012 IDE **Session 2 – Variables and Data Types in C#** ➢ Define and describe variables and data types in C# ➢ Explain comments and XML documentation ➢ Define and describe constants and literals ➢ List the keywords and escape sequences ➢ Explain input and output	**Application Programming in C#** SG - Session 1 & 2 PPT - Session 1 & 2 TG - Session 1 & 2
2	C# – TL2	The workshop lessons of Session 1 and Session 2 of *Application Programming in C#* course should be covered in this session.	**Application Programming in C# (OnlineVarsity)** Session 1 Session 2
3	C# – TL3	All the topics as listed below from Session 3 and Session 4 of *Application Programming in C#* book should be covered in this session. **Session 3 – Statements and Operators** ➢ Define and describe statements and expressions ➢ Explain the types of operators	**Application Programming in C#** SG - Session 3 & 4 PPT - Session 3 & 4 TG - Session 3 & 4

Session No.	Session Title	Session Details	Deliverables' Mapping
		➢ Explain the process of performing data conversions in C# **Session 4 – C# Programming Constructs** ➢ Explain selection constructs ➢ Describe loop constructs ➢ Explain jump statements in C#	
4	**C# – TL4**	The workshop lessons of Session 3 and Session 4 of *Application Programming in C#* course should be covered in this session.	**Application Programming in C# (OnlineVarsity)** Session 3 Session 4
5	**C# – TL5**	All the topics as listed below from Session 5 and Session 6 of *Application Programming in C#* book should be covered in this session. **Session 5 – Arrays** ➢ Define and describe arrays ➢ List and explain the types of arrays ➢ Explain the Array class **Session 6 – Classes and Methods** ➢ Explain classes and objects ➢ Define and describe methods ➢ List the access modifiers ➢ Explain method overloading ➢ Define and describe constructors and destructors	**Application Programming in C#** SG - Session 5 & 6 PPT - Session 5 & 6 TG - Session 5 & 6
6	**C# – TL6**	The workshop lessons of Session 5 and Session 6 of *Application Programming in C#* course should be covered in this session.	**Application Programming in C# (OnlineVarsity)** Session 5 Session 6

Session No.	Session Title	Session Details	Deliverables' Mapping
7	C# – TL7	All the topics as listed below from Session 7 and Session 8 of *Application Programming in C#* book should be covered in this session. **Session 7 – Inheritance and Polymorphism** ➢ Define and describe inheritance ➢ Explain method overriding ➢ Define and describe sealed classes ➢ Explain polymorphism **Session 8 – Abstract Classes and Interfaces** ➢ Define and describe abstract classes ➢ Explain interfaces ➢ Compare abstract classes and interfaces	**Application Programming in C#** SG - Session 7 & 8 PPT - Session 7 & 8 TG - Session 7 & 8
8	C# – TL8	The workshop lessons Session 7 and Session 8 of *Application Programming in C#* course should be covered in this session.	**Application Programming in C#** **(OnlineVarsity)** Session 7 Session 8
9	C# – TL9	All the topics as listed below from Session 9 and Session 10 of *Application Programming in C#* book should be covered in this session. **Session 9 – Properties and Indexers** ➢ Define properties in C# ➢ Explain properties, fields, and methods ➢ Explain indexers **Session 10 - Namespaces** ➢ Define and describe namespaces ➢ Explain nested namespaces	**Application Programming in C#** SG - Session 9 & 10 PPT - Session 9 & 10 TG - Session 9 & 10

Session No.	Session Title	Session Details	Deliverables' Mapping
10	**C# – TL10**	The workshop lessons of Session 9 and Session 10 of *Application Programming in C#* course should be covered in this session	**Application Programming in C#** **(OnlineVarsity)** Session 9 Session 10
11	**C# – TL11**	All the topics as listed below from Session 11 and Session 12 of *Application Programming in C#* book should be covered in this session. **Session 11 – Exception Handling** ➢ Define and describe exceptions ➢ Explain the process of throwing and catching exceptions ➢ Explain nested try and multiple catch blocks ➢ Define and describe custom exceptions **Session 12 – Events, Delegates, and Collections** ➢ Explain delegates ➢ Explain events ➢ Define and describe collections	**Application Programming in C#** SG - Session 11 & 12 PPT - Session 11 & 12 TG - Session 11 & 12
12	**C# – TL12**	The workshop lessons of Session 11 and Session 12 of *Application Programming in C#* course should be covered in this session.	**Application Programming in C#** **(OnlineVarsity)** Session 11 Session 12
13	**C# – TL13**	All the topics as listed below from Session 13 of *Application Programming in C#* book should be covered in this session. **Session 13 – Generics and Iterators** ➢ Define and describe generics ➢ Explain creating and using generics ➢ Explain iterators	**Application Programming in C#** SG - Session 13 PPT - Session 13 TG - Session 13

Session No.	Session Title	Session Details	Deliverables' Mapping
14	**C# – TL14**	The workshop lessons of Session 13 of *Application Programming in C#* course should be covered in this session.	**Application Programming in C# (OnlineVarsity)** Session 13
15	**C# – TL15**	All the topics as listed below from Session 14 of *Application Programming in C#* book should be covered in this session. **Session 14 – Advanced Methods and Types** ➢ Describe anonymous methods ➢ Define extension methods ➢ Explain anonymous types ➢ Explain partial types ➢ Explain nullable types	**Application Programming in C#** SG - Session 14 PPT - Session 14 TG - Session 14
16	**C# – TL16**	The workshop lessons of Session 14 of *Application Programming in C#* course should be covered in this session.	**Application Programming in C# (OnlineVarsity)** Session 14
17	**C# – TL17**	All the topics as listed below from Session 15 of *Application Programming in C#* book should be covered in this session. **Session 15 – Advanced Concepts in C#** ➢ Describe system-defined generic delegates ➢ Define lambda expressions ➢ Explain query expressions ➢ Describe Windows Communication Framework (WCF) ➢ Explain parallel programming ➢ Explain dynamic programming **Session 16 – Encrypting and Decrypting Data**	**Application Programming in C#** SG - Session 15 & 16 PPT - Session 15 & 16 TG - Session 15 & 16

Session No.	Session Title	Session Details	Deliverables' Mapping
		➢ Explain symmetric encryption ➢ Explain asymmetric encryption ➢ List the various types in the System.Security. ➢ Cryptography namespace that supports symmetric and asymmetric encryptions	
18	**C# – TL18**	The workshop lessons of Session 15 to Session 16 of *Application Programming in C#* course should be covered in this session.	**Application Programming in C# (OnlineVarsity)** Session 15 and 16

6. Library References

> **C# 5.0 in a Nutshell: The Definitive Reference** by Joseph Albahari, Ben Albahari
> **Essential C# 5.0** by Mark Michaelis, Eric Lippert

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