Tribhuvan University
Faculty of Humanities and Social Science (FoHSS)
Syllabus

Course Title	**: DotNet Technology (3 Cr.)**
Course Code	**: CACS302**
Nature of Course	**: Theory + Practical**
Year/Semester	**: III/V**
Marks	**: 60+20+20 [24 + 8 + 8]**
Class Load	**: 6 Hrs. /Week (Theory: 3hrs. Practical: 3 Hrs.)**

Course Description:
This course covers different concepts of .NET framework. It also covers basic to advanced features of C# language including language basics, creating types and inheritance, delegates, events, lambda expressions, LINQ, working with databases, and developing web applications using ASP.NET.

Course Objectives:
The primary objective of this course is to provide concepts of .NET framework and different concepts of C# programming language and make students familiar with their uses and applications.

Course Contents

Unit 1: Introducing C# and the .NET framework **7 Hrs**

Object Orientation; Type Safety; Memory Management; Platform Support; C# and CLR; CLR and .NET Framework; Other Frameworks; Framework Overview; .NET Standard 2.0; Applied Technologies

Unit 2: The C# Language Basics **12 Hrs**

Writing Console and GUI Applications; Identifiers and Keywords; Writing Comments; Data Types; Expressions and Operators; Strings and Characters; Arrays; Variables and Parameters; Statements (Declaration, Expression, Selection, Iteration, and Jump Statements); Namespaces

Unit 3: Creating Types in C# **12 Hrs**

Classes; Constructors and Deconstructors; this Reference; Properties; Indexers; Static Constructors and Classes; Finalizers; Dynamic Binding; Operator Overloading; Inheritance; Abstract Classes and Methods; base Keyword; Overloading; Object Type; Structs; Access Modifiers; Interfaces; Enums; Generics

Unit 4: Advanced C# **14 Hrs.**

Delegates, Events, Lambda Expressions, Exception Handling, Introduction to LINQ, Working with Databases; Web Applications using ASP.NET

Laboratory Works

The laboratory work includes writing console and/or GUI programs in C#

- To implement basic language features.
- To create classes and objects and to implement different object oriented features.
- To implement inheritance.
- To implement advanced features like delegates, event handling, lambda expressions, exception handling.
- To implement LINQ and database applications

Text Books

1. *C# 7.0 in a Nutshel (7th Edition), the Definitive Reference*, Joseph Albahari & Ben Albhari, O'Reilly.
2. *Microsoft Visual C# Step by* Step (9th Edition), John Sharp, Pearson Education.

Reference Books

1. *C# 7.0 All-in-One For Dummies (1st Edition)*, John Paul Mueller, Bill Sempf, Chuck Sphar, John Wiley & Sons, Inc.
2. *Professional C# 7 and .NET Core 2.0 (7th Edition)*, Christian Nagel, John Wiley & Sons, Inc.