KAMARAJ
COLLEGE OF ENGINEERING & TECHNOLOGY
(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)
S.P.G.Chidambara Nadar - C.Nagammal Campus
S.P.G.C. Nagar, K.Vellakulam - 625 701 (Near VIRUDHUNAGAR).

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Industry Certified Value Added Course on

"C# and Dot NETFRAMEWORK"

05-01-2026 to 10-01-2026 (2025 – 2026 EVEN)

COURSE OBJECTIVES

- To introduce programming fundamentals, .NET framework, and basic of C# Programming.
- To apply object-oriented concepts and exception handling in C#.
- To learn the advanced C# features such as generics, collections, and delegates.
- To develop data-driven applications using databases, NuGet, and Entity Framework Core.
- To design scalable .NET applications using SOLID principles, testing, and best practices.

UNIT 1 : PROGRAMMING FUNDAMENTALS & C# BASICS (10 Hours)

Programming Foundations, .NET Introduction, Introduction to C#, Core C# Elements, Control Flow Functions & Strings

UNIT 2 : OBJECT-ORIENTED PROGRAMMING & EXCEPTION HANDLING (10 Hours)

Core Language Features: Arrays, Enum, Struct, Namespace & Access Specifiers, Object-Oriented Programming: Class and Object, Constructors, Inheritance, Polymorphism, Encapsulation, Interfaces & Abstraction, Exception Handling,

UNIT 3 : ADVANCED C# & SOLID PRINCIPLES (10 Hours)

Advanced C#: Generics, Collections, Delegates, Lambda expressions & Event, File Handling, ✓Software Design Principles: SOLID Principles & DRY Principle

UNIT 4 : LIBRARIES, NUGET, DATABASE & ENTITY FRAMEWORK CORE (10 Hours)

Libraries & Packages, NuGet Package Manager, Hands-on NuGet Installation, Database Fundamentals: SQL Server and SSMS, Tables and Keys, DDL, DML and DCL commands, Data Access in .NET

UNIT 5 : ARCHITECTURE, DEPENDENCY INJECTION, TESTING (10 Hours)

Application Architecture, Dependency Injection, API Basics, Debugging, Testing & Best Practices, Version Control, Mini Project

Total: 50 Hours

COURSE OUTCOMES

After successful completion of the course, the students will be able to

CO. No.	Course Outcome	Knowledge Level
CO1	Build simple programs in C# fundamentals, control structures, and core language features.	K3 - Apply
CO2	Implement object-oriented programs using C# and handle runtime exceptions.	K3 - Apply
CO3	Make Use advanced C# concepts to solve real-world programming problems.	K3 - Apply
CO4	Build database-integrated .NET applications using SQL Server and EF Core.	K3 - Apply
CO5	Design and test a complete .NET application following standard architectures.	K3 - Apply

PROGRAMME SPECIFIC OUTCOMES (PSOs):

PSO1:

Professional Skills: The ability to understand, analyze and develop computer programs in the areas related to algorithms, system software, multimedia, web design, big data analytics, and networking for efficient design of computer-based systems of varying complexity.

PSO2:

Problem - Solving Skills: The ability to apply standard practices and strategies in software project development using open-ended programming environments to deliver a quality product for business success.

CO - PO MAPPING

Course Name	CO. No.	POs											PSOs	
		1	2	3	4	5	6	7	8	9	10	11	1	2
VAC – C# and Dot NETFRAMEWORK	CO1	M	M	M	M	M			L		L	L	M	M
	CO2	M	M	M	M	M			L		L	L	M	M
	CO3	M	M	M	M	M			L		L	L	M	M
	CO4	M	M	M	M	M			L		L	L	M	M
	CO5	M	M	M	M	M			L		L	L	M	M

H - High, M - Moderate, L – Low

SDG MAPPING

VAC Course Name	SDGs																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
				✓				✓	✓								

Trainer
Mr. K. Vinoth Raja,
Mr. M.Karthikeyan,
Mr. A.Srinivasa Perumal,
Career Services and Project delivery
ICANIO Technologies,
Tirunelveli.

Course coordinators
Ms. X. Ignatius Selvarani,
Mr. B. Muthukrishna Vinayagam,
Mr. G.Sundararaju
AP- CSE, KCET

VAC Co-ordinators
Mrs. S.Athilakshmi
Mrs. S. ArchanaDevi
AP- CSE, KCET.

HoD - CSE
Dr. A. Meenakshi
Head & Prof.- CSE
KCET.