# THE OHIO STATE UNIVERSITY
## COLLEGE OF ENGINEERING

# Programming in C#

## CSE 4253

**Credit Hours:**
1.00

**Course Levels:**
Undergraduate (1000-5000 level)

**Course Components:**
Lecture

**Course Description:**
C# programming for students well-versed in programming with another object-oriented language.

**Prerequisites and Co-requisites:**
Prereq: 2122, 2123, or 2231; and 2321; and enrollment in CSE, CIS, ECE, Engr Physics, or Data Analytics major, or CIS minor.

**Course Goals / Objectives:**
- Master C# programming language constructs and built-in types
- Master using C# delegates and events
- Be competent in using language interfaces, in particular, those defined in the .NET framework
- Be competent in using inheritance in C#
- Be competent with using .NET collections (sets, lists, dictionaries
- Be exposed to the Common Language Runtime (CLR), garbage collection, and assemblies
- Be familiar with GUI programming on Windows
- Be exposed to C# documentation and community web sites

**Course Topics:**
- Overview of the course, the .NET platform and C#
- C# language basics
- Hands-on workshop on Visual Studio
- Review of Object-oriented design, programming to interfaces, C# interfaces, C# inheritence and C# class definitions
- C# Generics and generic collection classes in .Net
- Enumerations and Iterators
- Windows Forms and basic GUI development
- Delegates and Events
- Extension methods
- Equality, comparisons and hashing in .NET
- Anonymous types
- Lambda Expressions
- Language integrated queries (LINQ) and functional programming with C#

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**Designation:**
Elective