



AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH (AIUB)

Faculty of Science and Information Technology

Department of Computer Science

CS Program

COURSE OUTLINE:

I - Course Code and Title: CSC 3115: Object Oriented Programming-2

II - Credit: 5/3 credit hours (2 hours' theory and 3 hours Lab per week)

III - Nature: Major Course for CSSE, SE, CIS, CS, CSE

IV- Prerequisite: CSC 2209: Object Oriented Programming 1

V - Course Description:

- Introduction to the .Net Framework
- C# language basics
- Creating User Interfaces for Console, Windows and WPF applications
- Creating and Managing Components and .NET Assemblies
- Consuming and Manipulating Data
- Testing and Debugging
- Deploying projects
- Maintaining and Supporting
- Configuring and Securing,

VI – Objectives:

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

1. Appreciated the .Net Framework 4.5
2. Appreciated programming Console-based applications in Visual C# .Net
3. Appreciated programming Windows-based applications in Visual C# .Net
4. Appreciated creating UI for Windows Form based applications
5. Appreciated programming the security for applications in Visual C# .Net
6. Prepared, developed and presented a group project using .Net Solution Architectures.

VII – Topics to be covered

TOPICS	Specific Objective(s)	Time Frame	Suggested Activities	Teaching Strategy(s)
Mission & Vision of AIUB and Faculty of Science and Technology	Make the student understand about how this course adjust with the mission and vision of AIUB and the corresponding Faculty	Week 1	Introductory Lecture	Informative Session
Overview	Overview on C#, .NET and Visual Studio IDE	Week 1	Lecture	Class Discussion
Introduction to Visual Studio .Net Environment and C# Programming	How to use the Visual Studio .Net IDE, C# Data types and the first basic Console application.	Week 1	Lab Work	
C# Basics	Overview on C# Data Types (Decimal, Nullable, Enum Structure Dynamic Type), Common Type System, Type Conversion & Casting, Unboxing, Boxing Operators, Namespace Classes & Objects Properties and accessors, new Keyword Method & parameter & return type (value, ref, out type) Constructor, Destructor, Dispose, Garbage Collector	Week 2	Lecture and Lab Work, Assignment	Class Discussion, Interactive Session
C# Classes and associated elements, properties, indexers and operator overloading	Access modifier, Types of class Encapsulation, Overloading, Inheritance (Single)	Week 3	Lecture, Lab Work and Assignment	Class Discussion, Interactive Session, Lab Assignments, Self-Study
Arrays & Strings	Array(Multidimensional, Jagged, Array objects, params keyword,	Week 4	Lecture, Lab Work, Quiz 1	Class Discussion, Interactive Session,

	passing array to function) Foreach Loop, Strings Class (Basic library functions with reference)			Lab Assignments, Self-Study And Quiz # 1
Inheritance & Polymorphism	Inheritance (Multiple, Multilevel) Overriding Polymorphism (static, dynamic/abstract, sealed, virtual keywords), <i>Interface</i>	Week 5	Lecture, Lab Work	Class Discussion, Interactive Session, Lab Assignments, Self-Study And Quiz # 3
<i>Exception handling & Project definition</i>	<i>Exception handling (try, catch, throw) object, final, user defined, exception class, Project Definition</i>	<i>Week 6</i>	<i>Lecture, Lab Work, Quiz 2</i>	<i>Class Discussion, Interactive Session, Self-Study And Quiz # 2</i>
Midterm Exam (Week 7)				
TOPICS	Specific Objective(s)	Time Frame	Suggested Activities	Teaching Strategy(s)
Generics & Windows Forms	Windows Form Basics, Collections Generics	Week 8	Lecture, Lab Work	Class Discussion, Self-Study and Assignments
Database	Database concepts (MS SQL server) LINQ	Week 9	Lecture, Lab Work	Class Discussion, Self-Study and Assignments
Delegates	Indexers, Regular Expressions, Delegates, Events	Week 10	Lecture, Lab Work	Class Discussion, Self-Study
Design Pattern	Design patterns (Factory , Façade , Singleton), Anonymous Methods, Lambda Expressions	Week 11	Lecture, Lab Work, Quiz 1	Class Discussion, Self-Study, Assignments and term project preparation
N-tier Architecture	N-tier/ Multi-layer architecture, Windows Forms Advance Application, LINQ to SQL/Entity framework	Week 12	Lecture, Lab Work	Class Discussion, Self-Study, Assignments and term project preparation
Projects and Reporting	Problem Solving using windows forms and database , Report writing	Week 13	Lab Work, Quiz 2	Class Discussion, Self-Study

Final Exam Week Week 14
Project Presentation Week 15

VIII- Course Requirements

1. Student Attendance

All students are expected to attend all scheduled classes, and to read all assigned chapters / materials before coming to class. Attendance will be taken at the beginning of each class period.

2. Class Participation & Peer Evaluation

You Students are expected to participate actively in the class. Your contribution towards your team will be counted too.

3. Quiz & Exam

There will be a midterm but no final written examinations. There will be both written and lab quizzes. The details will be announced in due time.

4. Projects

Projects are to be done in groups. For Projects the main priority will be given to Object Orientation. Each group needs to submit: Project Specification, User Scenarios, Use Case Diagrams, Class Diagrams, UI Design (For Midterm) and Implementation and Finished Product, Project Presentation, Closing Report (For Final). The following criteria will be judged along with the above mentioned items for marking: Object Orientation, Class Structure, UI, Design Patterns, Uniqueness, Professionalism, Usability, and Quality of source code.

IX– Evaluation

Midterm

1. Attendance _____	05%
2. Lab Performance _____	25%
3. Quizzes _____	30%
4. Written Exam _____	40%
Total	100%

Final

1. Attendance _____	05%
2. Project Implementation _____	50%
3. Lab Performance _____	20%
4. Quizzes _____	25%
Total	100%

Project

1. Project Proposal _____	10
2. Project Presentation _____	20
3. Project Defense _____	20
Total	50

Grand Total: 40% of Midterm + 60% of Final = 100%

X – Textbook/ References

1. C# 4.0 The Complete Reference; Herbert Schildt; McGraw-Hill Osborne Media; 2010
2. The C# Programming Language (Covering C# 4.0); Anders Hejlsberg, Mads Torgersen, Scott Wiltamuth, Peter Golde; Addison-Wesley; 2010
3. Beginning Visual C# 2008; Karli Watson et al, Wrox; 2008
4. Pro C# 2008 and the .NET 3.5 Platform; Andrew Troelsen; Apress; 2007
5. MCTS Self-Paced Training Kit - Exam 70-536 – Microsoft .NET Framework 3.0 Application Development Foundation, MS Press
6. MCTS Self-Paced Training Kit - Exam 70-526 – Microsoft .NET Framework 3.0 Windows-Based Client Development, MS Press
7. MSDN Library; URL: <http://msdn.microsoft.com/library>
8. C# Station Tutorial; URL: <http://www.csharp-station.com/Tutorial/CSharp>
9. C# Essentials - Techotopia; URL: http://www.techotopia.com/index.php/C_Sharp_Essentials
10. C# Language Specification; URL: <http://download.microsoft.com/download/0/B/D/0BDA894F-2CCD-4C2C-B5A7-4EB1171962E5/CSharp%20Language%20Specification.doc>