

**CS 19.21B Course Outline as of Fall 2018****CATALOG INFORMATION**

Dept and Nbr: CS 19.21B Title: ADVANCED C# PROGRAMMING

Full Title: Advanced C# Programming

Last Reviewed: 1/26/2015

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	3.00	Lab Scheduled	0	17.5	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00

Total Student Learning Hours: 157.50

Title 5 Category: AA Degree Applicable

Grading: Grade Only

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly: CIS 19B

**Catalog Description:**

This is a C# programming course for the person who has prior programming experience but has not worked with C#. Students will prepare 6 – 12 reasonably complex programs and work with object oriented programming and features of the .Net framework class libraries. This course is taught using the current version of Visual C# from Microsoft.

**Prerequisites/Corequisites:**

Course Completion of CS 10

**Recommended Preparation:**

Eligibility for ENGL 100 or ESL 100

**Limits on Enrollment:****Schedule of Classes Information:**

Description: This is a C# programming course for the person who has prior programming experience but has not worked with C#. Students will prepare 6 – 12 reasonably complex programs and work with object oriented programming and features of the .Net framework class libraries. This course is taught using the current version of Visual C# from Microsoft. (Grade Only)

Prerequisites/Corequisites: Course Completion of CS 10

Recommended: Eligibility for ENGL 100 or ESL 100

Limits on Enrollment:

Transfer Credit:

Repeatability: Two Repeats if Grade was D, F, NC, or NP

## **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

**AS Degree:**      **Area**      Effective:      Inactive:

**CSU GE:**      **Transfer Area**      Effective:      Inactive:

**IGETC:**      **Transfer Area**      Effective:      Inactive:

**CSU Transfer:**      Effective:      Inactive:

**UC Transfer:**      Effective:      Inactive:

**CID:**

**Certificate/Major Applicable:**

Certificate Applicable Course

## **COURSE CONTENT**

### **Outcomes and Objectives:**

Upon completion of the course, students will be able to:

1. Summarize the beginning concepts and instructions of the C# programming language.
2. Demonstrate understanding of event-driven programming and graphical user interface design.
3. Design, write, test, debug and document reasonably complex computer programs in C# using object oriented programming techniques to solve a variety of advanced problems.
4. Create, access and maintain accurate data files (text and relational database) through a C# program interface.
5. Develop programs incorporating computer graphics elements.

### **Topics and Scope:**

1. Review and Overview
  - a. Review of the C# programming environment, language rules and structure.
  - b. Review of forms and simple C# controls and their properties and methods
  - c. Concepts of event-driven programming
  - d. User interface design
2. Advanced Use of the C# Integrated Development Environment
  - a. Advanced environment options
  - b. Advanced debugging tools and techniques
3. Object Oriented Design Techniques
  - a. Introduction to objects
  - b. Modeling real world interaction
  - c. Unified modeling language
4. Object Oriented Programming
  - a. Classes and structures
  - b. Properties and methods

- c. Interface programming
  - d. Inheritance, polymorphism
  - e. Information hiding and encapsulation
5. Exploring the .Net framework
    - a. Built-in controls
    - b. Built-in data types
    - c. The common language runtime
    - d. Advanced string manipulation
  6. Error handling
    - a. Exception handling
    - b. User defined exceptions
  7. Relational Database Programming
    - a. Microsoft SQL server
    - b. Introduction to database file concepts and operations
    - c. Data controls, data-bound controls and grid controls

**Assignment:**

1. Read 30-50 pages from the textbook each week.
2. Write 6-12 reasonably complex computer programs using the C# programming language using proper structure and style.
3. Formulate accurate and descriptive program documentation.
4. Complete a team programming project.
5. Take 1-2 objective examinations.

**Methods of Evaluation/Basis of Grade:**

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Written program documentation	Writing 10 - 20%
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**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Programming assignments, including team project	Problem solving 50 - 70%
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**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

None	Skill Demonstrations 0 - 0%
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**Exams:** All forms of formal testing, other than skill performance exams.

Objective examinations such as multiple choice, true/false, etc.	Exams 20 - 30%
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**Other:** Includes any assessment tools that do not logically fit into the above categories.

None

Other Category  
0 - 0%

**Representative Textbooks and Materials:**

Visual C# How to Program, (5th Edition) by Harvey & Paul Deitel & Associates 2012