

**CS 19.11B Course Outline as of Spring 2010****CATALOG INFORMATION**

Dept and Nbr: CS 19.11B Title: ADVANCED VISUAL BASIC

Full Title: Advanced Programming Concepts with Visual Basic

Last Reviewed: 9/28/2009

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	4	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:

**Catalog Description:**

The second semester course in Visual BASIC programming for the student who has prior programming coursework or experience. This course will explore the Microsoft .Net Framework through the Visual Basic programming languages. Students will prepare reasonably complex programs and work with advanced features including event-driven programming, user-interface design, Object Oriented Programming techniques including inheritance and interfaces, advanced string manipulation and text handling, data validation and advanced error handling, database programming, and graphics.

**Prerequisites/Corequisites:**

Completion of CS 19.11A (formerly CIS 16A, CIS 16, BDP 16, BDP 57) or CS 19.21A (formerly CIS 19 A) or CS 10 (formerly CIS 10).

**Recommended Preparation:**

Eligibility for ENGL 100 or ESL 100

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

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prior programming coursework or experience. This course will explore the Microsoft .Net Framework through the Visual Basic programming languages. Students will prepare reasonably complex programs and work with advanced features including event-driven programming, user-interface design, Object Oriented Programming techniques including inheritance and interfaces, advanced string manipulation and text handling, data validation and advanced error handling, database programming, and graphics. (Grade Only)

Prerequisites/Corequisites: Completion of CS 19.11A (formerly CIS 16A, CIS 16, BDP 16, BDP 57) or CS 19.21A (formerly CIS 19 A) or CS 10 (formerly CIS 10).

Recommended: Eligibility for ENGL 100 or ESL 100

Limits on Enrollment:

Transfer Credit: CSU;UC.

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

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

<b>AS Degree:</b>	<b>Area</b>	Effective:	Inactive:
<b>CSU GE:</b>	<b>Transfer Area</b>	Effective:	Inactive:
<b>IGETC:</b>	<b>Transfer Area</b>	Effective:	Inactive:
<b>CSU Transfer:</b>	Transferable	Effective: Spring 2010	Inactive: Fall 2015
<b>UC Transfer:</b>	Transferable	Effective: Spring 2010	Inactive: Fall 2015

**CID:**

**Certificate/Major Applicable:**

Certificate Applicable Course

## **COURSE CONTENT**

### **Outcomes and Objectives:**

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

1. Summarize the beginning concepts and instructions of the Visual BASIC 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 Visual BASIC, using structured programming techniques to solve a variety of advanced problems.
4. Create, access, and maintain accurate data files through a Visual Basic program interface.
5. Develop programs incorporating computer graphics elements.

### **Topics and Scope:**

1. Review and Overview
  - a. Review of the Visual BASIC programming environment, language rules and structure
  - b. Review of forms and simple Visual BASIC controls and their properties and methods
  - c. Concepts of event-driven programming
  - d. User interface design
2. Advanced use of the Visual BASIC environment
  - a. Advanced environment options
  - b. Advanced debugging tools and techniques

3. Advanced features
  - a. UI [user interface] tools from the Toolbox
  - b. Advanced use of built-in and user-defined functions
  - c. Advanced string manipulation and text handling
  - d. Data validation and advanced error handling
4. Advanced use of arrays and lookup operations
  - a. Control arrays
  - b. Multi-dimension arrays and their uses
  - c. Sorting and searching techniques
5. Advanced file operations and database programming
  - a. User-defined data structures
  - b. Random access and binary file concepts and operations
  - c. Introduction to database file concepts and operations
  - d. Simple use of data controls, data-bound controls, and grid controls
6. Incorporating graphics
  - a. Advanced use of images, line and shape controls, and picture boxes
  - b. Advanced Drag and Drop operations
  - c. Run-time graphics operations using coordinate systems and graphics methods
7. Object oriented programming
  - a. Defining classes
  - b. Inheritance
  - c. Polymorphism
  - d. Access modifiers
8. Exploration of the .Net Framework
  - a. Name spaces
  - b. Assemblies
  - c. Mobile framework
9. Application Deployment
  - a. Installation
  - b. Setup programs

### **Assignment:**

1. Design and debug complex computer programs in the Visual BASIC programming environment.
2. Reading of 25 minimum pages per week from text.
3. Two to five exams, including a final.

### **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.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments are more appropriate for this course.

Writing  
0 - 0%

**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Programming assignments

Problem solving  
50 - 80%

**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

None

Skill Demonstrations  
0 - 0%

**Exams:** All forms of formal testing, other than skill performance exams.

Exams and final: multiple choice, true/false, matching items, completion

Exams  
10 - 40%

**Other:** Includes any assessment tools that do not logically fit into the above categories.

Team participation

Other Category  
0 - 10%

### **Representative Textbooks and Materials:**

Visual Basic 2008, How to Program, Deitel & Dietel, Prentice Hall: 2008

Starting Out with Visual Basic 2008, Gaddis & Irvine, Addison Wesley: 2008