

COURSE OUTLINE

Introduction to Visual Basic.NET

Course Description

IN 108. Introduction to Visual Basic.NET. 3 hours credit. This course will enable the student to use structured programming techniques to develop applications using MS Visual Basic as their application development language. The student will practice program development within a (GUI) Graphical User Interface environment. Before enrolling in Introduction to Visual Basic.NET, the student should be competent in basic computer operation.

Course Relevance

Successful Information Technology workers must possess a fundamental understanding of computer information systems and basic problem solving techniques. In general, they need to understand how to define a problem and how to propose, develop, test and evaluate problem solutions. In particular, they need to understand how computers, computer programs and computer information systems can be used to solve particular business problems. They also need to have a commitment to continuing education and skill development. This course provides a basic introduction to computers and computer programming by providing the student with a fundamental understanding of how computers work, how data is stored and manipulated within computer information systems. It introduces the basics of structured programming, algorithmic thinking and structured problem solving. It also provides a foundation in object-oriented programming, which is necessary for success in more advanced programming courses and in the modern business workplace. This course is for the student interested in Information Systems & Technology application development as a profession.

Required Materials

Zak, D., (2008) *Programming with Microsoft Visual Basic.NET*, (4th ed.). Boston, MA: Coute.

Supplemental Materials

A copy of either the Microsoft Visual Basic.NET Professional Edition or the Microsoft Visual Studio.NET Software

Learning Outcomes

The intention is for the student to be able to:

1. Convert business problems into programmable solutions via basic top-down, step-wise design techniques
2. Use the Visual Basic language to implement and test the solutions
3. Effectively communicate and operate within a team development environment
4. Identify the basic elements of object oriented programming and design

5. Define and utilize the common principles of structured programming

Primary Learning PACT Skills that will be DEVELOPED and/or documented in this course

Through the student's involvement in this course, he/she will develop and document his/her achievement of the following primary PACT skills:

1. Teamwork
 - Through the study of project management and the use of project development teams, the student will demonstrate teamwork skills.
2. Problem Solving
 - Through the use of standard algorithmic design techniques in the development of their Visual Basic programming projects, the student will demonstrate problem solving skills.
3. Writing
 - Through the delivery of a variety of required program design documents, the student will demonstrate skill in technical writing.

Major Summative Assessment Task(s)

These learning outcomes and the primary Learning PACT skills will be demonstrated by:

1. Preparing a final project that evaluates specific Visual Basic programming examples in terms of their design aesthetic, audience appeal, and technical proficiency

Course Content

- I. Themes - Key recurring concepts that run throughout the course:
 - A. Design and usability
 - B. Technology
 - C. Team and Project management
- II. Issues - Key areas of conflict that must be understood in order to achieve the intended outcome:
 - A. Balancing audience needs, technical restraints and design goals
 - B. Identifying constantly changing skills, hardware, and software needed to produce Visual Basic programming
 - C. Managing the production process
- III. Concepts – Key concepts that must be understood to address the issues:
 - A. Multiple definitions of Visual Basic programming
 - B. Visual Basic programming teams: required skills, training, job titles
 - C. Design principles applied to elements of Visual Basic programming
 - D. Evolving production tools: hardware, software
 - E. Internet as delivery system and research resource
 - F. Design effectiveness in light of audience definition and usability factors
- IV. Skills/Competencies - Actions that are essential to achieve the course outcomes:
 - A. Define Visual Basic programming
 1. Describe skills and training needed to produce Visual Basic programming
 2. Articulate basic Visual Basic programming design principles
 3. Discuss the effect of media selection on design

4. Recognize and apply the design principle of proximity
5. Recognize and apply the design principle of alignment
6. Recognize and apply the design principle of repetition
7. Recognize and apply the design principle of contrast.
- B. Describe hardware used in Visual Basic programming production
 1. Differentiate between Macintosh and Windows production platforms
 2. List popular production peripherals.
- C. Identify software used to create and manage Visual Basic programming
- D. Describe guidelines for working with elements of Visual Basic programming
 1. List guidelines for selecting typography
 2. Explain color as seen through monitors
 3. Discuss technical and design aspects of Visual Basic programming images
 4. Describe types of animation used in Visual Basic programming
 5. Describe technical considerations of incorporating sound into Visual Basic programming
 6. Describe technical considerations of incorporating video into Visual Basic programming.
- E. Discuss the Internet as delivery system for Visual Basic programming
 1. Describe the history of the Internet and World Wide Web
 2. Explain the role of search engines in indexing the World Wide Web.
- F. Describe the web page production process
 1. Define web pages
 2. Identify planning needed before producing a web site
 3. Describe steps in building a web site
 4. Explain how sites are tested and updated
 5. Describe the process of uploading a site
 6. Explain the benefits of site registration.
- G. Describe Visual Basic programming project production
 1. Outline methods for planning and costing a Visual Basic programming project
 2. Discuss interface and navigation design
 3. List guidelines for managing content and talent
 4. Describe methods for delivering Visual Basic programming projects.
- H. Evaluate good and bad Visual Basic programming design

Learning Units

- I. Basic computer concepts
- II. Introduction to the Integrated Development Environment (IDE)
- III. Introduction to Visual Basic and GUI programming concepts
- IV. Structured programming concepts and algorithmic concepts
- V. Modular programming, sub and function procedures
- VI. Arrays, strings, date and time data types

VII. Simple graphic concepts

VIII. Advanced GUI programming concepts

IX. Error handling and program debugging

X. Optional: Advanced Object-oriented programming concepts

XI. Optional: File and database processing concepts

Learning Activities

Learning activities will involve the student in examining various aspects of design, technology, and project management. Lectures, discussions, worksheets, small group projects, readings, viewing of various types of Visual Basic programming, research assignments, quizzes, tests, etc. prepare the student to be equipped to successfully complete the major assessment tasks.

Grade Determination

The student will be graded on assessment tasks, various other graded learning activities, and adequate participation (discussion).