1. **TITLE OF COURSE AND COURSE NUMBER:**

   Introduction to Visual BASIC, CS 1300
   Credits: 3 (Technology Intensive)

2. **DESCRIPTION OF THE COURSE:**

   Students will be introduced to the basic principles and applications of computing systems, microcomputers in particular. Techniques of computer programming are introduced through the use of Visual Basic. This course is not for computer science majors.

3. **COURSE PREREQUISITES:**

   None

4. **COURSE OBJECTIVES**

   The main objectives are:
   - To teach the fundamentals of Microsoft Visual Basic programming language;
   - To understand and apply Graphical User Interface (GUI) design principles;
   - To emphasize the development cycle when creating applications, which mirrors the same approach that professional developers use;
   - To illustrate well-written and readable programs using a disciplined coding style, including documentation and indentation standards;
   - To create Visual Basic applications that deploy on multiple platforms such as web pages, Windows, and Office environments;
   - To demonstrate how to implement logic involving sequence, selection, and repetition using Visual Basic;
   - To write useful, well-designed programs for personal computers and handheld computers that solve practical business problems;
   - To create appealing, interactive web applications that can be delivered and executed on the Internet;
   - To organize complex programs by using procedures and to anticipate and prevent errors by managing exceptions.

5. **STUDENT LEARNING OUTCOMES**

   **COURSE-SPECIFIC SLOS:**
Upon completion of the course, students will be able to:

- Develop an introductory understanding of programming concepts (T1).
- Demonstrate an introductory level of proficiency in how to program in Visual Basic. This includes the ability to analyze problems, define system requirements, design solution strategies, write program code, use the Visual Basic RAD tools for object based processing, and then test and debug the final code (T1, T2).
- Become familiar with the basics of objects, ActiveX and ASP.NET for web-page design, program-based communications to databases (ADO.NET), and other modern interfaces, notably mobile/cell-phone (T1, T2, T3).
- Demonstrate ability to think critically. This includes making decisions on the control objects in form interfaces, determining the mathematical formulas needed for computations in several application areas, programming control constructs, and design decisions for the incorporation of these and other programming technologies (T1, T2, T3).
- Demonstrate ability to integrate knowledge and ideas in a coherent and meaningful manner both in the programming/analysis process and in areas such as rudimentary business, statistical, scientific, and general applications (T1, T2, T3).
- Locate and use information. Projects will be assigned requiring information, methodologies, and formulas from the Internet in Visual Basic and application areas (T1, T2, T3).
- Understand the legal and ethical behaviors in the use of technology, as well as the professional code of conduct as a programmer (T4).

Through classroom presentations, participation, discussions, homework, project, and other assignments, this course also reinforces the following student learning outcomes:

- Communicate effectively through speaking and writing skills.
- Demonstrate understanding of scientific principles and methods (T1).
- Formulate strategies to locate, evaluate, and apply information (T2).
- Identify activities that fulfill personal, civic, and social responsibilities (T3, T4).
- Use computer and emerging digital technologies effectively (T1, T2).
- Demonstrate an awareness of global connections and interdependencies (e.g., mobile and Internet computing) (T3).

**UCC AREA SLOS:** N/A

**WRITING INTENSIVE SLOS:** N/A

**TECHNOLOGY INTENSIVE SLOS:**

Students will be able to:

T1. Demonstrate a sound understanding of technology concepts, systems and operations.
T2. Use a variety of technologies to access, evaluate, collect, and manage data, information and datasets.
T3. Understand the impact of technology on themselves, their culture, their environment and their society.
T4. Practice legal and ethical behaviors in the context of technology.

6. **TOPICAL OUTLINE OF THE COURSE CONTENT**

- Introduction: definitions, concepts, computers, and programs.
- Programming languages, machine languages, compiling.
- Introduction: programmers view of CPU, memory, and disk.
- Program development and life cycle.
- Program and GUI design.
- Program design constructs: variables, arithmetic operations, sequence, IF, loops, and conditionals.
- Procedures and exception handling.
- Object-oriented concepts: class and objects, ActiveX.
- Networking concepts including client/server architecture.
- Web applications, Internet, mobile computing, Visual Studio tools for Office.

7. **GUIDELINES/SUGGESTIONS FOR TEACHING METHODS AND STUDENT LEARNING ACTIVITIES:**

- Classroom lectures, presentations, and discussions.
- Classroom hands-on exercises and problem solving sessions.
- Demonstrations followed by supervised/assisted hands-on sessions. Active on-line participation is mandatory.

8. **GUIDELINES/SUGGESTIONS FOR METHODS OF STUDENT EVALUATION**

- Homework and programming projects.
- Quizzes and participation.
- Two examinations and a comprehensive final examination.

**Technology Intensive SLO Assessment:**

T1. There are homework, projects, quizzes, and examinations that cover the concepts. Also, the understanding of the concepts and operations will be demonstrated by the instructors and the students during hands-on exercises.

T2. Students will be evaluated on the programming projects. The projects cover all the techniques to problem solving using the Visual Basic language. The projects enable the students to think critically on the methodologies and the applications to accomplish the programming task.

T3 and T4.

There are homework, quizzes, and examinations that cover cultural, societal, legal, and ethical implications of technology and software development process. They practice legal and ethical behaviors in the software development process.
9. **SUGGESTED READINGS, TEXT, OBJECTS OF STUDY:**


Other supporting materials are listed in #10 below.

10. **BIBLIOGRAPHY OF SUPPORTIVE TEXTS AND OTHER MATERIALS:**

*Suggested Readings / Modern References in VB (not required):*


*Other pedagogical support material:*


Also, there is DreamSpark: https://www.dreamspark.com/ a secondary students-only MS Alliance-like entity of sorts (for that second PC)

*Visual Basic Helpful Sites:*


https://unvowa.wpunj.edu/exchweb/bin/redir.asp?URL=http://www.microsoft.com/express/samples/  (VB Express Resources and Samples from MS)


11. PREPARER’S NAME AND DATE

Jaehyun Kim & Cyril S. Ku, September 26, 2011 (Technology Intensive)

12. ORIGINAL DEPARTMENTAL APPROVAL DATE:
Fall 1979; September 26, 2011

13. **REVISER’S NAME AND DATE:**

   John Najarian, April 1, 2000 & December 2004; Cyril S. Ku, September 26, 2011

14. **DEPARTMENT REVISION APPROVAL DATE:**

   Spring 2000; Fall 2004; September 26, 2011