

## Course Competencies Template - Form 112

GENERAL INFORMATION			
Name: Diane King	Phone #: 77021		
Course Prefix/Number: COP1332	Course Title: Introduction to Visual Basic Programming		
Number of Credits: 4			
Degree Type	<input type="checkbox"/> B.A. <input type="checkbox"/> B.S. <input type="checkbox"/> B.A.S <input checked="" type="checkbox"/> A.A. <input checked="" type="checkbox"/> A.S. <input type="checkbox"/> A.A.S. <input type="checkbox"/> C.C.C. <input type="checkbox"/> A.T.C. <input type="checkbox"/> V.C.C		
Date Submitted/Revised: 07-28-2008	Effective Year/Term: 2009-1		
<input type="checkbox"/> New Course Competency <input checked="" type="checkbox"/> Revised Course Competency			
Course to be designated as a General Education course (part of the 36 hours of A.A. Gen. Ed. coursework): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
The above course links to the following Learning Outcomes: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Communication  <input checked="" type="checkbox"/> Numbers / Data  <input checked="" type="checkbox"/> Critical thinking  <input checked="" type="checkbox"/> Information Literacy  <input type="checkbox"/> Cultural / Global Perspective               </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Social Responsibility  <input type="checkbox"/> Ethical Issues  <input checked="" type="checkbox"/> Computer / Technology Usage  <input checked="" type="checkbox"/> Aesthetic / Creative Activities  <input type="checkbox"/> Environmental Responsibility               </td> </tr> </table>		<input checked="" type="checkbox"/> Communication <input checked="" type="checkbox"/> Numbers / Data <input checked="" type="checkbox"/> Critical thinking <input checked="" type="checkbox"/> Information Literacy <input type="checkbox"/> Cultural / Global Perspective	<input type="checkbox"/> Social Responsibility <input type="checkbox"/> Ethical Issues <input checked="" type="checkbox"/> Computer / Technology Usage <input checked="" type="checkbox"/> Aesthetic / Creative Activities <input type="checkbox"/> Environmental Responsibility
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Course Description (limit to 50 words or less, <b>must correspond with course description on Form 102</b> ):  This course introduces computer science and non-major students to fundamental programming skills using the Visual Basic Integrated Development environment. Students learn program design, the fundamentals of event driven object-oriented programming, arrays, validation of user input, and how to create menu driven programs and multiple form applications. This course may be taken by those not majoring in Computer Information Systems. Knowledge of high school algebra is recommended. Laboratory fee. (3 hr. lecture; 2 hr. lab).			
Prerequisite(s):    none	Co requisite(s):		

**Course Competencies:** (for further instruction/guidelines go to: <http://www.mdc.edu/asa/curriculum.asp>)

Competency 1: The student will demonstrate knowledge of computer system architecture by:

1. Identifying the function of each of the following items: CPU, RAM, ROM, hard disk, floppy disk, monitor, keyboard, mouse, and printer.
2. Describing the differences between programs and data.
3. Identifying major functions of computer operating systems, including file and peripheral management, program loading and execution.

Competency 2: The student will apply and synthesize knowledge of user interface design by:

1. Modifying existing user interfaces in sample programming projects.
2. Creating a Graphical User Interface (GUI) incorporating good design principles for a programming project.
3. Using the following GUI components in assignments: buttons, labels, text boxes, dialogs, picture boxes, check boxes, radio buttons, group boxes and list or combo boxes.

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Competency 3: The student will demonstrate understanding and application of a modern Integrated Development Environment (IDE) by:

1. Describing the major components of an IDE and their functions.
2. Examining, creating, and debugging programming projects using an IDE.

Competency 4: The student will demonstrate knowledge of fundamental computer program components by:

1. Explaining the role of each of the following typical program components: controls, classes, objects, properties, methods, functions, procedures, forms, modules and projects.
2. Incorporating these components into both existing and new programming projects.

Competency 5: The student will demonstrate knowledge of data structures by:

1. Explaining the appropriate use of each of the following fundamental data types: Integer, Single, Double, String, and Boolean.
2. Explaining the properties of a variable such as its name, value, scope, persistence, and size.
3. Declaring and using variables appropriately within programming projects.
4. Using explicit type conversions in programming projects.
5. Explaining the form and uses of array variables.
6. Creating and using array variables within programming projects.
7. Implementing a programmer-defined data structure (record) within a programming project.

Competency 6: The student will demonstrate analytical knowledge of fundamental computer programming constructs by:

1. Modifying and expanding short programs using control structures and functions.
2. Incorporating each of the following programming constructs into programming projects: sequential processing; counted, pre-test and post-test iteration (for-next, do while, loop until); and simple and complex selection structures (if, if-else, nested-ifs, select case).
3. Using function, method and procedure calls within programming projects.
4. Creating programs that respond to user-generated events.
5. Validating user input from text boxes.

Competency 7: The student will demonstrate analytical knowledge of fundamental computer programming operations by:

1. Using mathematical operators within programming projects.
2. Using relational operators within programming projects.
3. Using logical (Boolean) operators within programming projects.
4. Using string manipulation functions and methods.
5. Using intrinsic functions and/or methods for type conversion and mathematical operations.

Competency 8: The student will demonstrate analytical knowledge of advanced user interface design by:

1. Modifying and/or creating programs that include multiple forms (splash, about, and processing).
2. Modifying and/or creating programs that include a basic menu environment.

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Competency 9: The student will demonstrate analytical knowledge of the program development and maintenance processes by:

1. Applying the techniques of functional decomposition to break a programming design problem into smaller pieces.
2. Using diagrams and/or other design documents to illustrate the design of a programming solution.
3. Using diagrams and/or pseudocode to explain the detailed design of a method, procedure, or function.
4. Comparing and contrasting source code and executable code.
5. Documenting code following industry-standard practices and procedures.

Competency 10: The student will demonstrate the ability to synthesize knowledge of fundamental computer programming by:

1. Designing event-driven, object-oriented programs that use fundamental programming constructs.
2. Implementing event-driven, object-oriented programs that use fundamental programming constructs.
3. Testing event-driven, object-oriented programs that use fundamental programming constructs.
4. Debugging event-driven, object-oriented programs that use fundamental programming constructs.

Competency 11: The student will demonstrate industry best practices by:

1. Participating as a member of a team.
2. Researching and reviewing professional sources of information and presenting findings orally, in writing, and/or with a slide presentation.

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