DATE OF LAST REVIEW: 02/2013
CIP CODE: 15.1204
SEMESTER: Departmental Syllabus
COURSE TITLE: Advanced Visual Basic
COURSE NUMBER: CIST-0227
CREDIT HOURS: 3
INSTRUCTOR: Departmental Syllabus
OFFICE LOCATION: Departmental Syllabus
OFFICE HOURS: Departmental Syllabus
TELEPHONE: 913-334-1100
PREREQUISITE(S): CIST-0180 Visual Basic

REQUIRED TEXT AND MATERIALS:
Please see bookstore for current textbook(s) and other required material.

COURSE DESCRIPTION:
This course will provide students with experience in real-world problem solving using event-driven programming techniques with the Microsoft® Visual Basic® programming language to manage information databases, graphics and other complex data formats as time allows. Students will also learn to employ the Microsoft® Windows® Applications Programming Interface (API) and third party function libraries to add sophisticated program capabilities not directly available from within Visual Basic®. Object oriented programming techniques and program code reusability will be emphasized.

METHOD OF INSTRUCTION:
A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, and panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

COURSE OUTLINE:
I. Introduction to the Course
   A. Review of Visual Basic
      1. The Interface
      2. The Process
      3. The Tools
      4. Properties, Methods, Events
      5. Dialogs with User
      6. Data Types and Structures
      7. Coding Standards
      8. Logic Structures
      9. Debugging
II. Building an Application
   A. Working with Sequential and Random Access files
   B. Common Dialog Control
   C. Saving and Retrieving Program Settings
   D. Graphic Methods

III. Arrays and Collections
   A. Object Variables
   B. Using Visual Basic Collections
   C. Random Access Files
   D. Creating MDI Applications

IV. Database Basics
   A. Object Oriented Programming
   B. Classes and Objects
      1. Design
      2. Modules
      3. Instances of a Class

V. Data Access Objects
   A. Project Specifications
   B. Workspaces
   C. Methods

VI. Using the SQL Language as part of Database applications
   A. Structure of an SQL statement
   B. SQL action queries
   C. Table and Index creation
   D. Validation Rules
   E. Table Relationships
   F. Reports and Online Help
      1. Crystal Reports
      2. Creating Online Help for Applications

VII. Tapping into the Windows API
   A. Using DLLs and the API
   B. Reading and Writing INI Files

EXPECTED LEARNER OUTCOMES:
Upon completion of the course:
1. The student shall be able to explain the process of building an application.
2. The student shall be able to define and demonstrate the use of arrays and collections.
3. The student shall be able to show use of database basics.
4. The student shall be able to define and demonstrate the use of data access objects.
5. The student shall be able to demonstrate the use of the SQL language.
6. The student shall be able to demonstrate object linking and embedding (OLE).
7. The student shall be able to demonstrate the use of DLLs and the API and reading and writing INI files
   (depending upon time constraints).

COURSE COMPETENCIES:
Upon successful completion of the course:
1. The student shall be able to demonstrate data validation, error trapping, drag and drop, code reuse and
debugging features available in the Visual Basic development environment.
2. The student shall be able to write information to and read information from a sequential access file.
3. The student shall be able to demonstrate the ability to code Visual Basic applications that use and update multiple table relational database data.
4. The student shall be able to demonstrate the use of Structured Query Language (SQL) to access and manage relational database tables from Visual Basic applications.
5. The student shall be able to delete a sequential access file while an application is running.
6. The student shall be able to define a class.
7. The student shall be able to overload the methods in a class.
8. The student shall be able to create a class that contains more than one constructor.
9. The student shall be able to demonstrate the ability to use Microsoft applications.
10. Demonstrate the ability to employ Visual Basic Chart and Graph objects in typical business applications.
11. The student shall be able to explain data validation and error trapping techniques and demonstrate their use.
12. The student shall be able to employ drag and drop objects to enhance the user interface of an application.
13. The student shall be able to identify and use debugging tools provided in Visual Basic.
14. The student shall be able to tie bound data controls to database tables and manipulate table data using bound controls.
15. The student shall be able to demonstrate understanding of the strengths and weaknesses of bound vs. unbound database controls and explain appropriate use for each.
16. The student shall be able to access the records in a dataset.
17. The student shall be able to code a loop using For Each…Next structure
18. The student shall be able to update the contents of a one-dimensional array
19. The student shall be able to sort a one-dimensional array.
20. The student shall be able to locate information in two parallel one-dimensional arrays.
21. The student shall be able to Search a two-dimensional array.
22. The student shall be able to Pass a structure variable to a procedure.

ASSESSMENT OF LEARNER OUTCOMES:
Assessment methods may include, but are not limited to, the following: Homework, Assignments, Quizzes, Class Participation, Chapter Tests, and Final Exam. The grading scale and the process for calculating the course grades are to be determined by the individual instructors. This information will be included in each instructor’s syllabus.

SPECIAL NOTES:
This syllabus is subject to change at the discretion of the instructor. Material included is intended to provide an outline of the course and rules that the instructor will adhere to in evaluating the student’s progress. However, this syllabus is not intended to be a legal contract. Questions regarding the syllabus are welcome any time.

Kansas City Kansas Community College is committed to an appreciation of diversity with respect for the differences among the diverse groups comprising our students, faculty, and staff that is free of bigotry and discrimination. Kansas City Kansas Community College is committed to providing a multicultural education and environment that reflects and respects diversity and that seeks to increase understanding.

Kansas City Kansas Community College offers equal educational opportunity to all students as well as serving as an equal opportunity employer for all personnel. Various laws, including Title IX of the Educational Amendments of 1972, require the college’s policy on non-discrimination be administered without regard to race, color, age, sex, religion, national origin, physical handicap, or veteran status and that such policy be made known.

Kansas City Kansas Community College complies with the Americans with Disabilities Act. If you need accommodations due to a documented disability, please contact Valerie Webb, in Rm. 3354 or call at: 288-7670 V/TDD.