STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK

COURSE OUTLINE
CITA 342 - VISUAL PROGRAMMING AND DEVELOPMENT TOOLS

Revised By: MINHUA WANG

CANINO SCHOOL OF ENGINEERING TECHNOLOGY
INFORMATION TECHNOLOGY
May 2015
A. **TITLE:** Visual Programming and Development Tools

B. **COURSE NUMBER:** CITA 342

C. **CREDIT HOURS:** 3

D. **WRITING INTENSIVE COURSE:** No

E. **COURSE LENGTH:** 15 weeks

F. **SEMESTER(S) OFFERED:** Fall

G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:**
   2 lecture hours and 2 laboratory hours per week

H. **CATALOGUE DESCRIPTION:** An introduction to the development of computer applications using rapid development tools such as Visual Basic or Visual C++. Emphasis is on designing and managing graphical user interfaces, procedures, file management, debugging and testing.

I. **PRE-REQUISITES/CO-REQUISITES:**
   a. Pre-requisite(s): CITA 180 Introduction to Programming
   b. Co-requisite(s): none

J. **GOALS (STUDENT LEARNING OUTCOMES):**
   By the end of this course, the student will be able to:

<table>
<thead>
<tr>
<th>Course Objective</th>
<th>Institutional SLO</th>
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<tbody>
<tr>
<td>a. Set up Microsoft Foundation Classes (MFC) applications from the ground up</td>
<td>2. Crit. Thinking</td>
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<td>3. Prof. Competence</td>
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<td>b. Develop MFC applications by working with menus, toolbars, dialogs, and other controls</td>
<td>2. Crit. Thinking</td>
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<td>3. Prof. Competence</td>
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<tr>
<td>c. Develop MFC applications by working with documents and views</td>
<td>2. Crit. Thinking</td>
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<td></td>
<td>3. Prof. Competence</td>
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<td>d. Develop MFC applications by working with data sources</td>
<td>2. Crit. Thinking</td>
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<td></td>
<td>3. Prof. Competence</td>
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<tr>
<td>e. Compose variable and class names following MFC naming conventions</td>
<td>2. Crit. Thinking</td>
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<tr>
<td></td>
<td>3. Prof. Competence</td>
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<td>f. Design user-friendly graphical interface</td>
<td>1. Communication</td>
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<tr>
<td></td>
<td>2. Crit. Thinking</td>
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<tr>
<td></td>
<td>3. Prof. Competence</td>
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L. **REFERENCES:** N/A
M. **EQUIPMENT:** computer classroom

N. **GRADING METHOD:** A-F

O. **MEASUREMENT CRITERIA/METHODS:**
   - Exams
   - Quizzes
   - Participation

P. **DETAILED TOPICAL OUTLINE:**

I. Windows Programming with the Microsoft Foundation Classes
   A. MFC Notation
   B. How an MFC Program Is Structured
   C. The Document/View Concept in MFC
   D. Creating MFC Applications
   E. Communicating with Windows
   F. Working with Menus and Toolbars

II. Drawing in a Window
    A. The Drawing Mechanism in Visual C++
    B. Drawing Graphics in Practice
    C. Programming the Mouse

III. Advanced MFC Techniques
    A. Creating the Document and Improving the View
    B. Storing and Printing Documents
    C. Working with Dialogs and Controls
    D. Connecting to Data Sources
    E. Updating Data Sources

Q. **LABORATORY OUTLINE:**

I. Create MFC applications

II. Develop MFC applications by working with menus and toolbars

III. Develop MFC applications by working with documents and views

IV. Develop MFC applications by working with device contexts

V. Develop MFC applications by working with dialogs and other controls

VI. Develop MFC applications by working with data sources