

**BOROUGH OF MANHATTAN COMMUNITY COLLEGE**

City University of New York

**Department of Computer Information Systems**

**Office S150/Phone: 212-220-1476**

**Business Systems I-(Erreras's Syllabus)**

**CIS 365**

**Spring 2008**

**Credits: 4**

**Class hours: 3**

**Lab hours: 2**

**Course Description:**

This course is the first course in business programming where the students are introduced to advanced programming concepts in the JAVA language. Students will learn how to write fault tolerant, robust and user friendly Java code; will use object oriented features and application programming interface (API) classes; will create code using an important aspect of object-oriented programming in Java – inheritance; will create more powerful code by introducing polymorphism that enhances inheritance in more general manner; will learn the use of Java's Swing components for creating programs with user-friendly Graphical User Interfaces (GUI); will explore Java's graphical capabilities; will learn to input/output data from/to files through streams of data and object serialization; will learn how to access Databases with JDBC; will create applets that are executed in Web browsers.

**Prerequisites/Co-requisites:** CSC 210 or Departmental Approval

**Student Learning Outcomes:**

After completing this course, students will be able to:

- Write fault tolerant, robust and user-friendly Java code.
- Build applications using Java's object oriented features and application programming interface (API) classes.
- Understand how to implement their own classes and use objects of those classes in applications.
- Create code using an important aspect of object-oriented programming in Java – inheritance.
- Create more powerful code by introducing polymorphism that enhances inheritance in more general manner.
- Design business oriented applications using GUI components
- Create Applets
- Input/output data from/to files
- Use Java's graphical capabilities

**Required Text & Readings**

**Textbook: Java: How To Program. 7th Edition**

**Authors: H.M. Deitel, P.J. Deitel**

**Publisher: Prentice Hall**

**ISBN:**

**Other Resources:** Flash drives are needed for use during Lab.

## Evaluation & Requirements of Students:

Midterm examination	30%
Final examination	40%
Homework	10%
Quizzes	10%
Instructor's Evaluation	<u>10%</u>
	100%

## Outline of Topics:

1. Review
  - Editing, Compiling, Executing a Java Application using an IDE.
  - Fault Tolerant programming
  - Classes, Objects, Methods and Instance Variables
  - Instance Variables, `set` Methods and `get` Methods
  - Primitive Types vs. Reference Types
  - Initializing Objects with Constructors
  - Control Structures.
  - Assignment, Increment, Decrement Operators, Logical Operators
  - Methods, `static` Methods, `static` Fields and `Class Math`
  - Duration and Scope of identifiers
  - Arrays
  - Classes and Objects: A Deeper Look
  - `this` Reference
  - Composition
2. Object Oriented Programming: Inheritance
  - Superclasses and Subclasses
  - `protected` members
  - Relationship between Superclasses and Subclasses
  - Constructors in Subclasses
  - `Object` class
3. Object Oriented Programming: Polymorphism
  - Demonstrating Polymorphism Behaviour
  - Abstract Classes and Methods
  - Concrete Classes
  - `final` Methods and Classes
4. GUI Components: Part I
  - Overview of Swing Components
  - Text Fields and an Introduction to Event Handling and Nested Classes
  - Common GUI Event Types and Listener Interfaces
  - More on GUI Components: `JButton`, `JCheckBox`, `JRadioButton`, `JList`, `JComboBox`
  - Mouse Event Handling
  - `JPanel`
  - Layout Managers: `FlowLayout`, `BorderLayout`, `GridLayout`
5. Graphics and Java 2D
  - Graphics Contexts and Graphics Objects
  - Color Control
  - Font Control
  - Drawing Lines, Rectangles, Ovals and Arcs

6. Exception Handling
  - Exception Handling Overview
  - Divide by Zero, Arithmetic and InputMismatch Exceptions
  - finally block
7. Files and Streams
  - Class file
  - Sequential-Access Text Files
  - Object Serialization
  - Random-Access Files
8. Introduction to Applets
  - The methods init, start and paint
  - Executing an applet from Appletviewer and Web Browser

### **College Attendance Policy:**

At BMCC, the maximum number of absences is limited to one more hour than the number of hours a class meets in one week. For example, you may be enrolled in a three-hour class. In that class, you would be allowed 4 hours of absence (not 4 days). In the case of excessive absences, the instructor has the option to lower the grade or assign an F or WU grade.

### **Academic Adjustments for Students with Disabilities:**

Students with disabilities who require reasonable accommodations or academic adjustments for this course must contact the Office of Services for Students with Disabilities. BMCC is committed to providing equal access to all programs and curricula to all students.

### **BMCC Policy on Plagiarism and Academic Integrity Statement:**

Plagiarism is the presentation of someone else's ideas, words or artistic, scientific, or technical work as one's own creation. Using the idea or work of another is permissible only when the original author is identified. Paraphrasing and summarizing, as well as direct quotations, require citations to the original source. Plagiarism may be intentional or unintentional. Lack of dishonest intent does not necessarily absolve a student of responsibility for plagiarism.

Students who are unsure how and when to provide documentation are advised to consult with their instructors. The library has guides designed to help students to appropriately identify a cited work. The full policy can be found on BMCC's web site, [www.bmcc.cuny.edu](http://www.bmcc.cuny.edu). For further information on integrity and behavior, please consult the college bulletin (also available online).