New York City College of Technology
City University of New York
CST 1201
4 hours – 3 credits

Course Description:
This course is an intensive introduction to computer programming using the Java language. Through lectures and lab assignments, students will learn the fundamentals of the Java programming language including control structures and user-defined methods. Concepts of object-oriented-programming will be demonstrated through the introduction of class objects and class inheritance. Students also will learn to create simple Graphic User Interfaces and web applications. Some Java libraries will be introduced in developing application projects, for example, string manipulation classes. Emphasis in the course will be placed on the development, implementation, and execution of projects with an eye to industry standards.

Course Objectives:
Upon successful completion of the course, the student should be able to:

1. Install and run the Java runtime environment
2. Develop, compile, and run Java applications
3. Code application relevant to business and civic events
4. Master control structures in developing applications in the Java programming language
5. Use user-defined functions to implement modular programming techniques
6. Create interactive programs to process data and to create acceptable output
7. Develop programs using data arrays and structures
8. Demonstrate Object Oriented Programming concepts, including composition, and inheritance using the Java programming language
9. Design and implement programs that can be applied to Internet web pages

General Education Outcomes:

- **SKILLS/Inquiry/Analysis:** Students will employ scientific reasoning and logical thinking.

- **SKILLS/Communication:** Students will communicate in diverse settings and groups, using written (both reading and writing), oral (both speaking and listening), and visual means

- **VALUES, ETHICS, RELATIONSHIPS / Professional/Personal Development:** Students will work with teams, including those of diverse composition. Build consensus. Respect and use creativity.

Prerequisites:
CST1100 Introduction to Computer Systems, CST1101 Problem Solving with Computer Programming
Required Materials:
Text: Tony Gaddis, Starting out with Java from Control Structures Through Objects, 6E, Addison-Wesley, 2016, ISBN13: 978-0133957051
ISBN10: 0133957055 (Cover has picture of Pineapple)

Attendance Policy:
Attendance – Attendance is expected at every class meeting. College policy sets the maximum number of permissible absences at 10% of the number of class meetings scheduled for the semester. If the class is meeting two times per week, you are permitted to be absent a total of three class sessions; if the class meets only once per week, you are permitted to miss one and one-half of the class meetings.

Academic Integrity Policy:
Students and all others who work with information, ideas, texts, images, music, inventions, and other intellectual property owe their audience and sources accuracy and honesty in using, crediting, and citing sources. As a community of intellectual and professional workers, the College recognizes its responsibility for providing instruction in information literacy and academic integrity, offering models of good practice, and responding vigilantly and appropriately to infractions of academic integrity. Accordingly, academic dishonesty is prohibited in The City University of New York and at New York City College of Technology and is punishable by penalties, including failing grades, suspension, and expulsion. The complete text of the College policy on Academic Integrity may be found in the catalog.

Grading Procedure:

3 Tests (lowest dropped)	40%
Final	30%
Assignments (10)	30%
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TOTAL	100%

Letter Grade	A	A-	B+	B	B-	C+	C	D	F
Numerical Grade	93-100	90-92.9	87-89.9	83-86.9	80-82.9	77-79.9	70-76.9	60-69.9	<=59.9

Course SCHEDULE:

MON DATE	**MONDAY TOPIC**	**WEDNEDSDAY TOPIC**
Week 1	Java Environment, Variables, NetBeans 8 Environment –	Arithmetic Operators, String class-substring, length) Code comments, Dialog boxes, Converting numbers
Week 2	Common Errors (end of CH-2), IF-THEN ELSE , Logical Operators –	Logical Operators, String Comparison, Switch Statement
Week 3	Loops	Loops
Week 4	Catch-Up Test 1 Review	**Test 1**
Week 5	Sequential I/O	Ch 5 Methods
Week 6	Methods	Arrays – Introduction (Ch-7), Searching

Week 7	Arrays – Introduction (Ch-7), Searching	Arrays – Processing
Week 8	Two dimensional Arrays	Advanced Array Problems – Electoral College
Week 9	Review Test2	**Test 2**
Week 10	Classes	Classes
Week 11	Constructors	Overloading
Week 12	Inheritance, Overriding	UML
Week 13	Catch-Up Test 3 Review	**Test 3**
Week 14	Exception Handling	Exception Handling
Week 15	Final Review	**FINAL**

Course Assessment criteria:

For the successful completion of this course a student should be able to:	**Evaluation methods and criteria**
1. Demonstrate understanding of a Java program, and the Java development environment	1. Students will edit, compile, execute and get hard copy of a simple program.
2. Demonstrate understanding of arithmetic operators, logical operators, and relation operators.	2. Students will write a program using the Java arithmetic operators, input/output methods and appropriate manipulators for formatting.
3. Use if and switch selection structure.	3. Students will write program using appropriate selection statements.
4. Use control structures to execute statements in a program repeatedly.	4. Students will write a program using appropriate looping statements.
5. Create new functions and understand how to write functions.	5. Students will write a program using functions.
6. Demonstrate understanding on how to use arrays.	6. Students will use both one dimensional and multi-dimensional arrays. Students will describe different sorting and searching algorithms.
7. Demonstrate understanding on how to manipulate strings.	7. Students will develop application that involve string manipulation using Java classes

General Education Outcomes and Assessment:

Learning Outcomes	**Assessment Method**
SKILLS/Inquiry/Analysis Students will employ scientific reasoning and logical thinking.	Students will describe problem, identify inputs, processes and desired outcomes in laboratory assignments, class work and tests. Students will solve problems with the NetBeans software development tool in laboratory assignments, class work and

	tests. Students will identify coding paradigms in Laboratory Assignments, Class work and tests
SKILLS/Communication Students will communicate in diverse settings and groups, using written (both reading and writing), oral (both speaking and listening), and visual means	Students will present their analysis of the Java algorithms in tests and written assignments.
VALUES, ETHICS, RELATIONSHIPS / Professional/Personal Development Students will work with teams, including those of diverse composition. Build consensus. Respect and use creativity.	Some lab assignments will involve multiple components carried out by the various team members.