HOSTOS COMMUNITY COLLEGE
DEPARTMENT OF MATHEMATICS

MAT 200	**Modern Programming C++**
CREDIT HOURS:	**3.0**
EQUATED HOURS:	**3.0**
CLASS HOURS:	**3.0**
PREREQUISITE:	**MAT 160**
REQUIRED TEXTS:	**T. Gaddis & B. Krupnow, Stating out with C++ Brief Version, 5nd Edition, Addison Wesley, 2007**
DESCRIPTION:	**This course provides an introduction to problem solving methods and algorithm development through the study of the program, structures and data structures of Programming language.**
EXAMINATIONS:	**A minimum of four partial tests and a comprehensive final examination.**
GRADES:	**A, A$^-$, B$^+$, B, B$^-$, C$^+$, C, D, I, F.**

MAT 200

COURSE OUTLINE

I. **OVERVIEW OF PROGRAMMING**:

1. What is a program?
2. What is a computer?
3. What is a programming language?
4. What is Pascal?

II. THE PROBLEM SOLVING PROCESS:

1. Analysis
2. General solution – Algorithms
3. Particular solution – the program
4. Test and use

III. **THE SUNTAX AND SEMANTICS OF A PROGRAMMING LANGUAGE**:

1. Identifiers
2. Data Types
3. Data Storage
4. The Assignment Statement

IV. PROGRAM CONSTRUCTION:

1. The Write Statement
2. The Read Statement
3. Overall Structure – Headings, Declarations, Statements
4. Formatting
5. Block Design
6. Precedence Rules
7. Top-down design
8. Documentation

V. CONDITIONS AND BOOLEAN EXPRESSIONS:

1. The Boolean variable
2. The **IF** statement
3. The **IF THEN-ELSE** statement
4. Noted IF statement
5. Applications
6. Testing and debugging

VI. LOOPING:

1. The looping control structure
2. The **While** statement
3. Loops using the **While** statement
4. The **For** …. **Do** statement

VII. PARAMETERS:

1. Var/Value parameters
2. Local/Global variables
3. Scope rules

VIII. PROCEDURES:

1. Top-down structured design with procedures
2. Procedure declaration
3. Procedure call
4. Parameters
5. External files

IX. FUNCTIONS, REAL NUMBERS AND OTHER CONTROL STRUCTURES:

1. Functions
2. Recursion
3. The **Repeat** statement
4. The **Case** Statement

X. DATA TYPES AND STRUCTURES:

1. Arrays
2. Records
3. Files
4. Sets