

**QUEENSBOROUGH COMMUNITY COLLEGE**  
**DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE**

**COURSE OUTLINE**

**CS-101**                      **ALGORITHMIC PROBLEM SOLVING I**

**Co-requisite:** MA-441

**Hours:** 3 Class Hours            2 Laboratory Hours                      4 Credits

**Course Description:** Primitive data types; single and multi-dimensional arrays; strings; control structures; basic I/O; subprograms and parameter passing; references; scope; introduction to recursion; designing, coding, debugging and documenting programs in a high-level language.

**Curricula for which the course is required/recommended:**

A.S. Degree Programs in Liberal Arts and Sciences (Mathematics and Science), Electrical and Computer Engineering Technology.

**General Education Objectives:** Use analytical reasoning skills to identify issues or problems and evaluate evidence in order to make informed decisions; reason quantitatively and mathematically as required in their fields of interest and in everyday life; integrate knowledge and skills in their program of study; use information management and technology skills effectively for academic research and lifelong learning.

**Course Objectives/ Expected Student Learning Outcomes:** Introduction to problem solving methods and algorithm development: designing, debugging, and documenting programs in C++.

**Textbook:**                      C++ Without Fear  
  By B. Overland  
  Prentice Hall Professional Technical Reference, 2005.

**Methods by which student learning will be evaluated:**

The general guidelines for assessing grades are as follows:

- |                          |     |
|--------------------------|-----|
| ○ In-class examinations  | 30% |
| ○ Laboratory assignments | 45% |
| ○ Final Examination      | 25% |

The distribution may be changed at the discretion of the individual instructor.

**Academic Integrity:** Academic honesty is taken extremely seriously and is expected of all students. All assignments must be the original work of the student (and partners or group, if applicable). All questions or concerns regarding ethical conduct should be brought to the course instructor. "It is the official policy of the College that all acts or attempted acts that are violations of academic integrity be reported to the Office of Student Affairs (OSA). At the faculty member's discretion and with the concurrence of the student or students involved, some cases, though reported to the OSA, may be resolved within the confines of the course and department. The instructor has the authority to adjust the offender's grades as deemed appropriate, including assigning an F to the

assignment or exercise or, in more serious cases, an F to the student for the entire course.” (Taken from the QCC Academic Integrity Policy, 2/14/2005.)

**NOTE:** *Any student who feels that he/she may need an accommodation based upon the impact of a disability should contact the instructor privately to discuss his/her specific needs. Please contact the office of Services for Students with Disabilities in Science Building, room 132 (718 631 6257) to coordinate reasonable accommodations for students with documented disabilities.*

<b><u>CHAPTER</u></b>	<b><u>TOPIC</u></b>	<b><u>WEEK</u></b>
<b>1</b>	<b>Introduction to C++ Programming, Input and Output</b>	<b>1</b>
<b>1</b>	<b>Data Types, Variables, and Expressions</b>	<b>2</b>
<b>2</b>	<b>Decisions, Simple Branching: if and while</b>	<b>3-4</b>
<b>3</b>	<b>Looping: for and while</b>	<b>5-6</b>
<b>4</b>	<b>Functions, recursion</b>	<b>7-10</b>
<b>5</b>	<b>Arrays</b>	<b>11-12</b>
<b>7</b>	<b>Strings</b>	<b>13-14</b>
	<b>2 - 3 Tests, Final Exam and Laboratory Projects</b>	

The approximate hours per chapter are guidelines and are at the discretion of the instructor. The instructor is responsible for making assignments and scheduling examinations. The Final Exam date is scheduled by the Registrar.

SPRING 2009  
RJH  
[MATH CS101 SYBS09]