Rowan College at Burlington County

Science, Technology, Engineering, and Mathematics Division

Course Title: Introduction to Computer Science I **Course Code**: CSE 110 – 100

Co-requisites: MTH – 130 **Credits**: 4

Contact hours: 3/2/0

Meeting Days & Times: All lessons are online and done at student's convenience by due dates listed in the schedule of topics below.

Instructor: Brett Love **email:** blove@rcbc.edu

Office hours: By appointment only

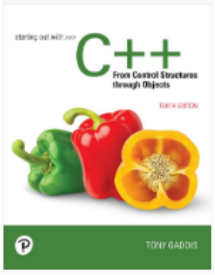
SECTION 1:

Course Description: This course is an introduction to the fundamental concepts of programming and problem solving. It focuses on simple data types, control structures, and introduction to array and string data structures and algorithms, as well as debugging techniques and the social implications of computing. It emphasizes good software engineering principles and developing fundamental programming skills in the context of a language that sports the object-oriented paradigm. The lab component provides hand-on programming experience that is vital for beginning programmers and computer science students.

Required Material: the course assignments require access to a computer with a hard drive capable of installing and running the Code::Blocks IDE and saving files.

Note that Code::blocks can be installed on and run from a flash drive, and files can be saved there as well. Although there is a MAC OS version, it is not supported and a Windows computer is strongly recommended.

Web-enhanced: This is a web-enhanced course and will utilize **Blackboard**.



Required Text: Starting Out with C++, 10th Edition**,** Tony Gaddis, Pearson: ISBN: 978-0-13-592834-9
(The text is available through the Brytewave app linked to the Blackboard)

General Education Outcomes:

- Written and Oral Communication: Communication
  - Students will logically and persuasively support their points of view or findings
- Technology Competency or Information Literacy: Technology
  - Students will demonstrate the skills required to find, evaluate, and apply information to solve a problem.

Course Learning Outcomes: Upon completion of this course, students will be able to:

- Demonstrate an understanding of C++ syntax and grammar through the development of medium complexity programs.
- Demonstrate the ability to break down problems into sub-problems, and employ logical thinking in algorithm development of medium complexity individually, or as a team.
- Employ computer science terms, concepts, and software engineering principles and ethics in the development of computer-based algorithms.
- Develop and execute programs using C++, utilizing data types, variables, functions, arrays, and classes.

**Course Learning Outcomes map to Program Learning Outcomes for AS.CSE and AS.INF.*

Program Learning Outcome - AS.CSE	***Introduce, Reinforce, Apply***
#1. Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions.	I
#2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of a program's discipline.	I
#4. Recognize professional responsibilities and make informed judgements in computing practice based on legal and ethical principles.	I
#5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.	I
#6. Apply computer science theory and software development fundamentals to produce computing-based solutions.	I

Program Learning Outcome - AS.INF	***Introduce, Reinforce, Apply***
#1. Decompose a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions.	I
#2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of a program's discipline.	I
#4. Recognize professional responsibilities and make informed judgements in computing practice based on legal and ethical principles.	I
#5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.	I

Core Course Content:

- Computer Operation
- C++ Programming
- Algorithm Development
- Data Types, Input/Output, and Control Structures
- Functions, Scope, and Flow of Control
- Repetition Structures, and File Handling
- Arrays, Strings, the String Class, and Pointers
- Engineering Principles and Programming Standards

SECTION 2:

Course and Classroom Policies:

Expectations: Students are expected to watch video lectures, be prepared having read the text chapter beforehand, and complete assignments. Students are expected to complete and submit assignments on or before the due date. Students are expected to conduct themselves in a professional manner.

Class Attendance when a course is not meeting face-to-face is determined as logging into Blackboard and RCBC email on a daily basis.

Required email: Students are assigned an email account by the college (*firstname_lastname@mymail.rcbc.edu*). Students are expected to use this account to correspond with the instructor.

Criteria for Grade Determination:

Grading: Grades will be based on assignments (labs), programming projects, and a midterm and final exam as noted below. ***Assignments submitted after the due date will incur a grade penalty of three (3) points per day, and will not be accepted if more than one (1) week late***. *Makeup tests require a valid excuse and can result in loss of grade points*. Programming assignments constitute 70% of the grade for this programming course.

Assessment Methods:

Lab Programs	40%
Project Programs	30%
Exam 1	15%
Exam 2	15%
Total	100%

Letter Grades

A	= 90 - 100
B+	= 85 - 89
B	= 80 - 84
C+	= 75 - 79
C	= 70 - 74
D	= 60 - 69
F	= Below 60

Labs/Projects: Most assignments will be computer generated and will be submitted to the instructor as attached files to an assignment on Blackboard.

Programming assignments will be graded for style, operation, programming standards (posted), and meeting the requirements as stated in the instructions. A three (3) point penalty will be imposed for each Standard violation, and five (5) points for each required operation.

CSE 110 Course Outline/Schedule (subject to change):

The weeks' assignments will be due by 11:59 pm on Thursday night each week.

Please refer to the **Blackboard "Weekly Coursework Modules"** section for more information.

Week	Dates	Topic	Reading	Assignment
1	1/19 - 1/25	Computers and Programming	Ch 1	Optional Assignments
2	1/26 - 2/1	Introduction to C++	Ch. 2	Optional Assignments
3	2/2 - 2/8	Expressions and Interactivity Getting Started and the IDE	Ch. 3	Lecture Slides Example Program
4	2/9 - 2/15	Conditional Examples Making Decisions	Ch. 4 (4.1 - 4.5)	Lab 1 (Input/Output) Lab 2 (Conditions)
5	2/16 - 2/22	Making Decisions Whitespace and Programming Standards	Ch. 4 (4.6 - 4.17)	Lab 3 (Multi-way Branches)
6	2/23 -2/29	Flow of Control, Loops Order of Operations, Loops	Ch. 5 (5.1 - 5.10)	Lab 4 (Repetition Structures)
7	3/1 - 3/7	Functions, Variable Scope Multi-file Programming (Header files) Value Returning Functions	Ch. 6 (6.1 - 6.12)	Lab 5 (Functions)

8	3/8 - 3/21 (*Spring Break 3/11 - 3/15*)	Variables and Scope Reference Variables as Parameters	Ch. 6 (6.13 - 6.16)	Lab 6 (Reference Parameters)
Week	Dates	Topic	Reading	Assignment
9	3/22 - 3/28	File I/O and Streams Exam #1 Review	Ch. 5 (5.11)	Project #1 **Exam # 1**
10	3/29 - 4/4	Arrays	Ch. 7 (7.1 - 7.10) Ch. 8 (8.1 - 8.4)	Lab #7 (Arrays)
11	4/5 - 4/11	Vectors Debugging Tools and Techniques	Ch. 7 (7.11) Ch. 8 (8.5)	Project #2
12	4/12 - 4/18	Characters and c-string The String Class and Networks	Ch. 10	Lab #8 (String Inspect) Optional: Encrypted Message lab
13	4/19 - 4/25	Window Handles and Color Manipulation		Project #3
14	4/26 - 5/2	Pointers	Ch. 9	Project #3
15	5/3 - 5/9	Exam #2 Review		Project #3 **Exam #2**

* Course Outline is subject to change

Internet and Other Computer Use – all students are required to abide by established RCBC computer and Internet use procedures and regulations. Willful damage to or misuse of RCBC computers and/or software will be considered a violation of the RCBC Student Code of Conduct. Criminal prosecution may also result. This applies to IPODS, games or electronics of any kind, instant messenger, and social media.

SECTION 3:

College Policies: In order for students to know their rights and responsibilities, all students are expected to review and adhere to all regulations and policies as listed in the College Catalog and Handbook. The current college catalog and student handbook are important documents for understanding your rights and responsibilities as a student in the RCBC classroom. Please read your catalog and handbook as they supplement this syllabus, and can be accessed at rcbc.edu/publications. Important policies and regulations include, but are not limited, to the following:

- Grading Standards
    - Withdraw (W) and Incomplete Grades (I)
    - Withdrawal date for this semester – Academic Calendar
- Student Code of Conduct
- Use of Communication and Information Technology
- College Attendance Policy
    - Students are required to attend all class, clinical, laboratory, and studio sessions for the full duration of each such instructional session. Faculty are required to record student attendance, and grade penalties for absence will be imposed when a student exceeds a ten percent non excused absence rate, not to exceed 10% of the final grade.
    - Students are responsible for informing their instructor as soon as the situation is known and following all other guidelines as outlined by the college. Failure to do so may lead to the absence not being excused. Students are also responsible for communicating with instructors to make reasonable arrangements for the completion of course requirements not completed due to absence.
- Academic Dishonesty/Plagiarism
    - Specifically, the term "plagiarism" includes, but is not limited to, the use by paraphrase direct quotation, of the published or unpublished work or sections of a work of another person without full and clear acknowledgement, whether intentional or not. This includes any material copied directly or paraphrased from the internet. Plagiarism also constitutes the unacknowledged use of materials prepared by another person or agency engaged in the selling of a term papers or other academic materials, including material taken from or ordered through the Internet. For more information on academic dishonesty/plagiarism see Board Policy #903-C.

Student Conduct Code - Students shall abide by the expectations outlined in the Student Handbook. RCBC students are accountable according to the standards established in this policy. http://www.rcbc.edu/conduct

Office of Student Support and Disability Services: In accordance with Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act (ADA) and the ADA Amendments Act, the Student Support Services Office's mission is to ensure all students with disabilities are provided access to educational and extracurricular activities while on college premises through support in the form of reasonable accommodations such as adaptive technology, counseling, note-taking assistance, and American Sign Language interpreters. Students who have disabilities must self-identify, provide documentation of disability(ies), attend an intake appointment, and sign a Disability Release Form (rcbc.edu/studentsupport) prior to the start of the semester to ensure

reasonable accommodations. For more information, please contact the Office of Student Support at ext. 1208. For additional information on this policy please refer to the current catalog.

Educational Technology Statement: Rowan College at Burlington County (RCBC) advocates the use of technology to enhance instruction. Students should assume that classroom and online technology will be used throughout their coursework at RCBC, as it will most certainly be used in their future education and careers. The College provides on-campus facilities for the convenience of the RCBC community. Various college departments, including the Office of Information Technology and the Office of Distance Education, provide technology training and assistance to faculty and students.

Student Success Services: RCBC offers a variety of free services for its students including those listed below. Descriptions of these services, as well as many others, can be found in the College Catalog and Handbook and on the RCBC website at https://www.rcbc.edu/students.

- Academic Advising (https://www.rcbc.edu/advising)
- Struggling Personally or Academically (https://rcbc.edu/need-help-now)
- Career Services (https://www.rcbc.edu/careers)
- EOF (https://www.rcbc.edu/eof)
- Financial Aid (https://www.rcbc.edu/financial-aid)
- International Students Office (https://www.rcbc.edu/internationall)
- ESL Advising & Support (https://rcbc.edu/esl)
- Library (https://www.rcbc.edu/library)
- Office of Veteran Services (https://www.rcbc.edu/vets)
- RCBC Foundation -Scholarship information (https://www.rcbc.edu/foundation)
- RCBC bookstore (https://www.rcbc.edu/bookstore)
- Rowan University Partnership (https://www.rcbc.edu/rowan)
- Student Support Counseling (https://www.rcbc.edu/counseling)
- Tutoring (https://www.rcbc.edu/tutoring)
- Test Center (https://www.rcbc.edu/test-center)
- Transfer Services (https://www.rcbc.edu/transfer)

RCBC student success coaches provide guidance and support during your college journey. When meeting with a coach, students can expect personalized coaching sessions that offer the strategies and skills needed to develop a plan for academic and future success. For more information, email successcoaching@rcbc.edu or visit our website rcbc.edu/successcoaching.

This syllabus is subject to change at the instructor's discretion.