COQUITLAM COLLEGE
Established 1982

COURSE OUTLINE

Last Revised: Fall 2003

COURSE INFORMATION

Course Title: Introduction to Scientific Programming   **Course Number:** CSCI 103   **Credits:** 3

Total Weeks: 14 (Fall, Spring)   **Total Hours:** 39   **Course Level:**   ☒ First Year   ☐ Second Year
12 (Summer)   ☐ New   ☐ Revised Course
☐ Replacement Course

Department: Computer Science   **Department Head:** M. O'Connor   **Former Course Code(s) and Number(s) (if applicable):** N/A

Pre-requisites (If there are no prerequisites, type NONE): MATH 102

Co-requisite Statement (List if applicable or type NONE): MATH 102

Precluded Courses: N/A

COURSE DESCRIPTION

This course is an introduction to programming for students of Math and Science. Students will be introduced to fundamental programming concepts and techniques and will gain some knowledge of problem solving, data structures, algorithm design and programming using the C language. At the end of the course students will have a good working knowledge of C and experience with commercial numerical algorithm packages.

LEARNING OUTCOMES

Upon successful completion of the course, students will be able to:

- Problem-solve
- Understand data structures
- Understand algorithm design
- Utilize programming using the C language

INSTRUCTION AND GRADING

Instructional (Contact) Hours:

Type	Duration
Lecture	39
Seminars/Tutorials	
Laboratory	
Field Experience	
Other (*specify):*	
Total	39

Grading System: Letter Grades ☒   Percentage ☐   Pass/Fail ☐   Satisfactory/Unsatisfactory ☐   Other ☐

Specify passing grade: 50%

Evaluation Activities and Weighting (total must equal 100%)

Assignments: 20% *Specify number of, variety, and nature of assignments:*	Lab Work: %	Participation: % *Specify nature of participation:*	Project: % *Specify nature of project:*
Quizzes/Test: 10%	Midterm Exam: 30%	Final Exam: 40%	Other: % *Specify:*

TEXT(S) AND RESOURCE MATERIALS

Provide a full reference for each text and/or resource material and include whether required/not required.

Engineering Problem Solving with C, Second Edition, D.M. Etter and J.A. Ingber, Prentice-Hall, 1995.

COURSE TOPICS

List topics and sequence covered.

Week	Topic
Week 1	Problem Solving, Algorithms
Week 2	Compiling, running, testing, debugging, and documenting C programs
Week 3	Arithmetic and Boolean expressions
Week 4	I/O and files
Week 5	Control structures
Week 6	Structured programming
Week 7	**MIDTERM EXAM**
Week 8	Functions and procedural abstraction
Week 9	Arrays and string processing
Week 10	Data structures
Week 11	Pointers, dynamic arrays, and linked lists
Week 12	Searching and sorting
Week 13	Numerical algorithm packages
Week 14	**FINAL EXAM**

NOTES

1. Students are required to follow all College policies. Policies are available on the website at: Coquitlam College Policies
2. To find out how this course transfers, visit the BC Transfer Guide at: bctransferguide.ca