

Advanced Computer Science and Programming COSC 2415

Course Information:

Instructor adds information here

Instructor Name:

Instructor adds information here

Instructor contact information

Instructor adds information here

Catalog Description:

Coordinating Board Academic Approval Number 1102015307.

This course is a continuation of COSC 1415 and is designed to meet the requirements for a degree in computer science or related field. Topics covered include structured problem-solving, elementary and advanced data structures, the use of pointer variables and references, and an introduction to object-oriented programming (3 Lec., 3 Lab.) This course uses C++.

Prerequisites: COSC1315 or COSC1415 and MATH1414 or demonstrated competence approved by the instructor.

Textbooks and Materials:

- Programming and Problem Solving with C++ by Nell Dale, Chip Weems and Mark Headington (Third Edition). Publisher – Jones and Bartlett
- Optional - A Laboratory Course in C++ by Nell Dale (Third Edition). Publisher – Jones and Bartlett
- High-density computer diskettes (3 1/2 inch), IBM-formatting, labeled with your name.
- Richland College Student ID so that you can use the drop-in computer labs.
- Optional compiler available in the college bookstore

Course Objectives:

COSC 2415 Learning Outcomes

- Understand various sorting and searching algorithms
- Perform manipulations with parallel and multi-dimensional arrays
- Declare struct data types and struct variables and use them to store and process related collections of data
- Declare and use C++ class objects
- Understand the object-oriented programming concepts of encapsulation, inheritance, and polymorphism and properly apply them in the construction of a C++ program
- Understand the concept of a pointer variable and a dynamic data variable and be able to declare and use them in C++ programs
- Use dynamic linked lists to process data
- Understand the advantages and disadvantages of the use of recursion in the solution of problems.

Core Curriculum Intellectual Competencies

- Reading: the ability to analyze and interpret a variety of printed materials - books, documents, and articles
- Writing: the ability to produce clear, correct and coherent prose adapted to purpose, occasion and audience
- Speaking: ability to communicate orally in clear, coherent, and persuasive language appropriate to purpose, occasion, and audience
- Listening: analyze and interpret various forms of spoken communication, possess sufficient literacy skills of writing, reading
- Critical Thinking: think and analyze at a critical level
- Computer Literacy: understand our technological society, use computer based technology in communication, solving problems, acquiring information.

Core Curriculum Exemplary Educational Objectives

- Discuss computer and communications terminology
- Evaluate the effects and implications of computers and communication technology on society
- Demonstrate knowledge of the impact of technology on the individual's privacy, security, lifestyle, work environment, standard of living, and health
- Gather information for decision-making
- Participate in global communities using available technology
- Create quantitative and qualitative data presentations

Course evaluation criteria

Instructor adds information here

Policies:

Attendance Policy: I think that it is important for you to attend class and lab regularly. I would appreciate it if you would let me know (by phone or e-mail) if you need to be absent. If you will be absent from class for the observance of a religious holiday please notify me in advance.

Withdrawal (Drop) Policy: If you find you cannot complete this class, it is your responsibility to withdraw by Thursday, November 13, 2002. Failure to withdraw will result in receiving a performance grade, usually an "F." Students sometimes withdraw from classes when help is available that would allow them to continue. If you consider dropping this class, I hope you will discuss your plans with me before you withdraw.

Academic Honesty Policy: All students are expected to support the Richland College Statement on Academic Honesty, a two-page document that I will distribute the first week of class.

Disability Services/Special Services: If you are a student with a disability and/or special needs who requires ADA accommodations, please contact Richland College Disability Services Office, C120, (972) 238-6180.

Computer/Internet Policy: As a Richland College student, you have access to the Del Rio computer labs for educational and instructional purposes. You are required to show your Richland

Student ID when requested by lab personnel. You are expected to follow lab policies as well as the Student Code of Conduct specified in the catalog.

Tutoring and Other Assistance Policies: Tutoring is available through the Center for Teaching and Learning Connections ((972) 238-6226, Medina 216) and the Del Rio lab ((972) 238-6317, large counter center of second floor). Generally, one hour per week is free.

Safety Policy: It is important for you to participate in this class in a safe, appropriate manner. Watch out for cords attached to computer equipment, boxes of paper, students' back-packs, etc. You should begin to build good computing habits, designed to prevent eyestrain, carpal tunnel syndrome, etc.

Campus Food and Drink Policy: No eating or drinking is allowed at the computer tables in the lab rooms. If you want to eat or drink in the lecture room, you must sign the Statement of Responsibility, an agreement to be responsible for removing cans, bottles, trash, from the learning environment.

Tentative course outline

Instructor adds information here

You should review First Semester C++ and cover Chapters 11 through 18