

# CSE 2122 (Approved): Data Structures Using C++

## Course Description

Introduction to programming in C++ and object-oriented programming; encapsulation using classes, inheritance, etc.

**Prior Course Number:** CSE 230

**Transcript Abbreviation:** Data Struct C++

**Grading Plan:** Letter Grade

**Course Deliveries:** Classroom

**Course Levels:** Undergrad

**Student Ranks:** Freshman, Sophomore

**Course Offerings:** Spring

**Flex Scheduled Course:** Never

**Course Frequency:** Every Year

**Course Length:** 14 Week

**Credits:** 3.0

**Repeatable:** No

**Time Distribution:** 3.0 hr Lec

**Expected out-of-class hours per week:** 6.0

**Graded Component:** Lecture

**Credit by Examination:** No

**Admission Condition:** No

**Off Campus:** Never

**Campus Locations:** Columbus

**Prerequisites and Co-requisites:** CSE 1222 or CSE 202

**Exclusions:** Not open to students with credit for CSE 230

**Cross-Listings:**

**The course is required for this unit's degrees, majors, and/or minors:** No

**The course is a GEC:** No

**The course is an elective (for this or other units) or is a service course for other units:** Yes

**Subject/CIP Code:** 14.0901

**Subsidy Level:** Baccalaureate Course

## Course Goals

Be competent with concepts of object-oriented programming and abstraction mechanisms.
Be competent with the concepts of classes, member functions and variables, constructors, destructors, inheritance, and access mechanisms.
Be competent with the concepts of prototype functions, functions, parameters, return values, overloading, and operators.
Be familiar with control structures, dynamic memory allocation, arrays, and pointers.

## Course Topics

Topic	Lec	Rec	Lab	Cli	IS	Sem	FE	Wor
Introduction to course computing environment	4.0							
Basic features, getting started, basic data types	4.0							
Advanced data types, functions without returned values	4.0							
Classes, members, constructors	6.0							

Topic	Lec	Rec	Lab	Cli	IS	Sem	FE	Wor
Friends, destructors, returned values in functions	6.0							
Operators	3.0							
Inheritance	4.0							
Flow of control, dynamic memory allocation, arrays and pointers	8.0							
Reviews and midterm exam	4.0							

## Representative Assignments

Arrays and functions
Classes
I/O streams
Inheritance

## Grades

Aspect	Percent
Programming labs	30%
Midterms	30%
Final exam	40%

## Representative Textbooks and Other Course Materials

Title	Author
<i>Problem Solving with C++</i>	Walter Savitch

## ABET-EAC Criterion 3 Outcomes

Course Contribution		College Outcome
*	a	An ability to apply knowledge of mathematics, science, and engineering.
*	b	An ability to design and conduct experiments, as well as to analyze and interpret data.
***	c	An ability to design a system, component, or process to meet desired needs.
	d	An ability to function on multi-disciplinary teams.
*	e	An ability to identify, formulate, and solve engineering problems.
	f	An understanding of professional and ethical responsibility.
	g	An ability to communicate effectively.
	h	The broad education necessary to understand the impact of engineering solutions in a global and societal context.
*	i	A recognition of the need for, and an ability to engage in life-long learning.
	j	A knowledge of contemporary issues.
**	k	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

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