



Syllabus

CSC 190 Cs2: Object-oriented Software Development

General Information

Date

July 12th, 2018

Author

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Department

Computing Sciences

Course Prefix

CSC

Course Number

190

Course Title

Cs2: Object-oriented Software Development

Course Information

Credit Hours

4

Lecture Contact Hours

4

Lab Contact Hours

1

Other Contact Hours**Catalog Description**

CS2: Object-Oriented Software Development covers algorithm development and object-oriented design and development for large-scale software and graphical user interfaces (GUIs). This course is the second in a series of three required programming courses for a traditional computer science degree. Topics to be covered include objects and classes, procedural vs. object-oriented programming, reference data types, class libraries, class design, class abstraction and encapsulation, inheritance and polymorphism, exception handling, abstract classes, graphical user interfaces (GUIs), and event-driven programming.

Key Assessment

This course does not contain a Key Assessment for any programs

Prerequisites

CSC 115 with a grade of C or better

Co-requisites

None

Grading Scheme

Letter

First Year Experience/Capstone Designation

This course DOES NOT satisfy the outcomes applicable for status as a FYE or Capstone.

SUNY General Education

This course is designated as satisfying a requirement in the following SUNY Gen Ed category

None

FLCC Values

Institutional Learning Outcomes Addressed by the Course

Inquiry
Perseverance
Interconnectedness

Course Learning Outcomes

Course Learning Outcomes

1. Identify and implement elementary data structures for the manipulation of data
2. Develop more complex algorithms for solving problems using an object-oriented approach
3. Identify and implement object classes from existing object-oriented collection libraries.
4. Design, develop and implement new object classes to solve complex problems.

Outline of Topics Covered

1. Multidimensional Arrays
 - Processing Two-Dimensional Arrays
 -

Passing Two-Dimensional Arrays to Methods

2. Objects and Classes

- Defining Classes and Objects
- Designing Classes and Creating Objects
- Constructing Objects Using Constructors
- Accessing Objects via Reference Variables
- Class Libraries and Reusable Code
- Data Field Encapsulation
- Passing Objects to Methods
- Immutable Objects and Classes

3. Object-Oriented Thinking

- Class Abstraction and Encapsulation
- Thinking in Objects
- Class Relationships
- Inheritance
 1. Superclasses
 2. Subclasses
- Overriding vs. Overloading Methods
- Polymorphism
- Dynamic Binding

4. Exception Handling

- Exception Types
- Rethrowing Exceptions
-

Chained Exceptions

- Defining Custom Exception Classes
- File Input and Output

5. Abstract Classes and Interfaces

6. Java GUI Programming

- Panes, UI Controls, and Shapes
- Layout Panes
- GUI Classes
- Design and Develop GUI programs

7. Event-Driven Programming

- Event-driven programming
 1. Events, Event Sources, and Event Classes
- Handler Classes
- Event Listeners
- GUI Application Development
- Animation Classes

8. Text I/O

- Text I/O verses Binary I/O