CMPS 370 Object-Oriented Programming
Fall 2019 209 Thurman (TT 3.30–4.50)

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Office Hours: MW 100–200, TT 130–330.

Texts: H. M. Deitel and P. J. Deitel. *C++: How to Program*. 8th edition. Prentice Hall.
ISBN-10:0132662361.
Joyce Farrell. *Java Programming*. 7th edition. Cengage Learning.
ISBN-10:1285081951.

Course Description: Introduction to the concepts of object-oriented programming. This course reviews modular programming principles in C, and details the development of object-oriented constructs leading to C++. It introduces the basis of all object-oriented programming languages, and examines its implementation in various languages, including C++ and Java. Commercially available object-oriented programming platforms for C++ and Java will also be discussed.

Prerequisites: Credit in CMPS 270 (C Programming) or CMPS 300 (Programming Languages). All students must have a LiveText account.

This course addresses Program Educational Objectives 1 and 2; Program ABET Outcomes 1, 2, and 6.

Program Educational Objectives: The Educational Objectives of the Computer Science Program are to produce graduates who:

PEO 1: successfully enter the competitive job market or pursue advanced study;

PEO 2: are proficient in identifying, formulating, and solving a wide range of computing problems;

Program ABET Outcomes: Upon completion of the course, students will have an ability to:

Outcome 1: analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions; [PEO 1, PEO 2]
Outcome 2: design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline; [PEO 1, PEO 2]
Outcome 6: apply computer science theory and software development fundamentals to produce computing-based solutions; [PEO 1, 2]

Course Objectives: Students should (a) understand the basic principles of object-oriented programming, and the implementation of these principles in at least one high level language; (b) apply these principles by designing object-oriented solutions using UML diagrams; (c) demonstrate the ability to implement object-oriented designs by programming in one high level language.

Course Learning Outcomes: Upon completion of this course, students will be able to:
° Demonstrate the difference between modular and object-oriented approaches to problem solving [ABET 6].
° Design and demonstrate object-oriented solutions to computational problems [ABET 1, 2].
° Implement object-oriented designs by using object-oriented constructs in a high-level language (C++ or Java) [ABET 6].
° Verify and validate object-oriented solutions in a high-level language [ABET 6].
° Learn and apply other object-oriented programming languages [ABET 6].

Target: 80% will perform at the level of performance 1-2 in achieving ABET Outcomes 1, 2, and 6.

Grading:

Attendance	20%
Assignments	20%
Midterm	20%
Final	40%

90 – 100%	A
80 – 89%	B
70 – 79%	C
60 – 69%	D
below 60%	F

Exams and Assignments:

No late exams and assignments are accepted. Missed exams and assignments turned in late earn 0 points. Any questions concerning grading of exams and assignments must be resolved with the instructor within a week following the return of the graded item.

All students are expected to adhere strictly to the highest standards of academic integrity. All infractions will be dealt with severely. Please refer to the academic dishonesty policy at `http://www.cmps.subr.edu/academicdishonesty.htm`.

Topics:

- Review of modular programming concepts
  - Control structures: sequence, selection, iteration
  - Data structures: arrays and structs
  - Concept of top-down design
  - Testing—Verification and Validation
- Object-oriented concepts
  - Encapsulation
  - Inheritance
  - Polymorphism
- Object-oriented analysis and design
  - Requirements
  - Specifications
  - Object-oriented analysis
  - Design
  - UML use-case and class diagrams
- Object-oriented implementation and integration
  - Object-oriented constructs in C++ and Java
  - Exception handling
  - Templates
  - C++ Standard template library

Administrative Policies:

Please turn OFF all cell phones and other communication devices when class and exams are in session. No recording devices of any kind are allowed.

Inappropriate and/or disruptive behavior will be reported to the Office of Student Life for disciplinary review as per the Code of Student Conduct.

LIVETEXT SUBSCRIPTION – Southern University and A&M College-Baton Rouge has entered into partnership with LiveText, Inc. to provide online academic resources for student collaboration and learning outcomes assessment. Therefore, all students enrolled in this course are required to purchase a subscription from LiveText, Inc. through the Southern University Bookstore. LiveText, Inc. provides students with the electronic tools and services needed to serve them in their courses and in their career or academic pursuits beyond graduation. LiveText is a dynamic tool that will enable you to:

-- Create electronic portfolios for storing and displaying coursework for use anytime and anyplace.
-- Share your resumés, professional portfolios and virtually any projects that can be photographed, video recorded, and uploaded to prospective employers and others who need or want to know about your accomplishments.
-- Engage in discussion boards with other students, exchange feedback, and create study groups and other types of social networks.
-- Complete assignments in key/required courses where LiveText has been embedded (without LiveText, you will not be able to complete these assignments).
-- Create a complete record of your academic career that is malleable and easily accessible.
-- Engage in developing a results-driven culture of assessment at Southern University.
-- Participate in a process that will allow for data-driven curricular improvements that foster improved student learning and performance.

MOODLE ACCESS – Southern University and A&M College at Baton Rouge will used Moodle extensively in this course. Moodle is a learning management system designed to help teachers and students communicate effectively online. The course syllabus, class materials (e.g., handouts, PowerPoint slides, journal articles, assignments, readings, etc.) will be placed on Moodle. The student should check Moodle DAILY for all assignments submitted via Moodle. If the student has problems with his Moodle account, he/she should contact Ms. Chrisena Williams-Brown in the Division of Information Technology via email at chrisena_williams@subr.edu or via phone at (225) 771-5017.

ACADEMIC DISHONESTY – The University defines academic dishonesty as premeditated and un-premeditated fraudulent behavior. Premeditated fraud is defined as conscious, pre-planned, deliberate cheating with materials prepared in advance. Unpremeditated fraud is defined as cheating without the benefit of materials prepared in advance. See the Southern University and A & M College Catalog for a more detailed definition of academic dishonesty. In addition, administrative regulations governing the conduct of students enrolled at the University are contained in the Code of Student Conduct. A copy of the Code of Student Conduct may be obtained from the Office for Student Affairs.

ADA COMPLIANCE – Students with documented disabilities who believe that they may need accommodations in this class are encouraged to contact the Disability Services Coordinator in the Office of Disability services, 234 A.C. Blanks Hall, 225-771-3950 (Voice/TTD), 225-771-5652 (Fax), as soon as possible to ensure that such accommodations are implemented in a timely fashion. Students who need accommodations must be registered with the Office of Disability Services. Students are responsible for informing the instructor of any instructional accommodations and/or special learning needs at the beginning of the semester. All discussions will remain confidential.