

**CMPS 190B**  
**Programming Techniques and Algorithm Development I**  
**FALL 2023**

**2017 - 2020 Catalog Data:** CMPS 190B **PROGRAMMING TECHNIQUES AND ALGORITHM DEVELOPMENT I** (Credit, 3 hour) (Lecture, 3 hour). This course is the first of a two-course sequence designed to provide the foundation for all computer science courses and for computing careers, two fundamental aspects of computer science are introduced: algorithms and programs. The skills and techniques learned will be required in all subsequent course work. CMPS 190B is a very programming-intensive course so students must allocate some time outside of class to completing programs. Topics include: semantics and syntax, data types and variables; assignment statement with arithmetic expressions; program structure; simple input and output; strings; Boolean expressions; transfer of control statements; arrays and functions. Prerequisite: None.

**Textbook:** Tony Gaddis, Starting Out with C++ with MyProgrammingLab, 10th edition, Pearson, Digital Format.  
ISBN: 9780136581949

**Lectures:** 9:00 AM – 9:50 AM, MWF (**CRN: 11495**)  
11:00 AM – 11:50 AM, MWF (**CRN: 11891**)  
9:30 AM – 10:50 AM, TR (**CRN: 11496**)  
N205 Thurman Hall

**Instructor:** Name: Dr. Lynette Jackson  
Office Location: E114 Thurman Hall  
Virtual Office Hours: 10:00 AM – 11:00 AM MW;  
11:00 AM – 1:00 PM, TR or By Appointment  
(Join via Microsoft Teams Meeting)  
Office Phone: (225) 771 – 5958  
E-mail: lynette.jackson@sus.edu

**Program Education Objectives:**

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

**PEO1:** Are thoroughly trained in methods of analysis, including the mathematical and computational skills appropriate for problem solving.

**PEO2:** Have developed the skills pertinent to the design of computing systems, including the ability to formulate problems, to think creatively, to synthesize information, to work collaboratively, and to communicate effectively;

**PEO 3:** Are capable of working collaboratively, and communicating effectively with team members, constituents, and the public;

**PEO 4:** Uphold professional and ethical responsibilities, and contribute to society through active engagement.

**Program ABET Outcomes:**

Each graduate by the time of graduation will have the 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 3]

**Outcome 6:** Apply computer science theory and software development fundamentals to produce computing-based solutions; [PEO 1, PEO 2]

## Course Objectives:

The objectives of this course are to cover:

1. foundational skills for future computer science courses
2. problem-solving skills and software design tools
3. syntax and semantics of the C++ programming language
4. design and implementation of small scale programming projects

## Course Learning Outcomes:

Upon successful completion of CMPS 190B, students will be able to:

1. demonstrate the ability to use foundational skills for future computer science courses
2. demonstrate the ability to use problem-solving skills and software design tools
3. demonstrate the ability to use the syntax and semantics of the C++ programming language
4. demonstrate the ability to design and implement small scale programming projects

**Target:** 70% will perform at the level of performance 1-2 in achieving ABET Outcomes 1, 2, & 6.

## Course Educational Strategies:

1. Provide clear lectures and discussions of appropriate programming concepts.
2. Provide students with the opportunity to learn course material through reading and program assignments.
3. Allow students to demonstrate mastery of the course concepts through submitted exercises such as exams, quizzes, and other assignments.
4. Provide students with the opportunity to learn more about various branches of computer science through the application of object-oriented programming to real world problems.

## Course Weekly Content: (subject to change)

Week	Topic
1	Orientation / Introductions / Review of Programming Techniques
2	Introduction to Computers and Programming
3	Introduction to C++: parts of a programs, variables, literals, data types, arithmetic operators
4	Introduction to C++: combined assignment operators, constants, scope, programming style
5	Expressions and Interactivity: cin object, mathematical expressions, type conversion, constants, assignment
6	Expressions and Interactivity: formatting output, characters/strings, mathematical library functions
7	Making Decisions: statement, if-else statement, nested if statement, if-else-if statement
8	Making Decisions: logical operators, conditional operators, switch statement, formatted output
9	Looping: increment and decrement operators, postfix, prefix, while loop, do-while loop, for loop <b>MIDTERM EXAM</b>
10	Looping: running totals, sentinels, nested loops, file input and output
11	Functions: defining and calling functions, prototypes, sending/passing data
12	Functions: return statement, Boolean value local/global variables, default arguments,
13	Functions: reference variables, overloading, exit()
14	Introduction to Classes and Objects: writing a class, instance fields, constructors, passing objects
15	Final Exam Review
16	<b>FINAL EXAM</b>

## Administrative Information and Requirements

### Course Requirements:

The student is expected to:

1. purchase the course textbook by the second week of classes
2. read assignments to prepare for scheduled discussions of the material
3. access online course materials to obtain assignments and related materials
4. attend all classes to ensure that expectations are understood, and give feedback to monitor and assess progress
5. complete all assignments/activities by the scheduled date (late submissions will receive -10% for each day late)
6. place cell phone either in the off position or kept on vibrate during lecture
7. demonstrate knowledge of the subject through 2 exams, 12 quizzes, 12 reading assignments, and 12 programming assignments

### *Exam Information:*

1. Exams will emphasize concepts developed in the course.
2. Exams will be closed book and notes unless stated.
3. Students will not be able to leave the classroom while they are taking an exam.
4. There will be no sharing of any materials (including calculators) during exams.
5. Communicating to one another is not permitted while taking an exam. If there are questions, they should be directed to the instructor. Students who communicate to one another will receive a zero for that exam.
6. A student who misses an exam will receive a zero unless the absence is legitimate and documented properly (e.g., a letter from a court clerk stating that he/she must appear in court, a letter from physician that he/she was sick). If a student has foreknowledge of an absence, he/she should clear this with the instructor before missing class. There will be no make-up exams for unexcused absences or improperly documented absences.

### **Grading Distribution**

A student's grade at the end of the semester will be determined by following percentages:

Assignments	10%
Programming Projects	15%
Exams	50%
Final Exam	25%

### **Grading Scale**

Course grades at the end of the semester will be given based upon performance using the standard grading scale:

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

### **Course Communication**

When sending any electronic correspondence (via your University-issued email address) to the instructor, please include the following:

- Subject: First and Last Name, CRN
- Greeting: Dear Dr. Jackson,
- Body of message: clearly state your concerns and/or problems, do not use text message lingo
- Signature: First and Last Name, Course Information

Note: If you have followed the above format, then you can expect that the professor or teaching assistant will respond to your e-mail message within 48 hours during the week. **Visit during virtual office hours if an urgent issue surfaces.**

**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 anywhere.
- 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 use 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/her Moodle account, he/she should contact the Division of Information Technology at (225) 771-4357 8 am – 5 pm Monday – Friday or the SU OneStop HelpDesk Support at 877-771-0621 24 hours a day; 7 days a week..

**ACADEMIC DISHONESTY** – Southern University and A&M College's Student Code of Conduct (Code 1.1) identifies academic dishonesty as any deliberate attempt to gain an unfair advantage in academic work. Examples of academic dishonesty include cheating, falsification of information, fraud, plagiarism, and unauthorized access to academic records, providing information, material, or other assistance with knowledge that such assistance could be used in violation of the Student Code of Conduct or other University policies, or providing false information in connection with any inquiry regarding academic dishonesty.

[Academic Dishonesty Policy](#) - link to PDF  
[Report Academic Dishonesty](#) - link to PDF

**ACADEMIC GRIEVANCES** – Southern University and A&M College students may seek redress in academic decisions when they believe the decision is unfair or ungrounded. The academic grievance procedure provides prompt and equitable resolutions to student academic grievances. Classroom related matters should be subjected to these procedures only when the grievance cannot be settled in the ordinary course of immediate post-class discussion. Academic grievances are not handled by the Office of the Dean of Students.

[Student Academic Grievance Procedures](#) - link to PDF

**ADA COMPLIANCE** – Southern University Baton Rouge is committed to providing reasonable accommodations for students with documented disabilities in compliance with the American with Disabilities Act (ADA). Students may request accommodations by registering with the Coordinator for Disability Services. It is important to do this early each semester because ADA accommodations are not retroactive. Upon completion of the application, the Coordinator will be responsible for forwarding the letter of accommodations to the students' professors. Accommodations will begin upon acknowledgement that the professor has received the letter of accommodations. All discussions with the faculty/student/Coordinator will remain confidential.

Contact Information:

The Office of Disability Services is in Office # 246, A. C. Blanks Hall, in the center of the campus.

### **Southern University Office of Disability Services**

*Jada J. Netters, Coordinator*  
 P.O. Box 11298  
 Baton Rouge, LA 70813  
 Phone: (225) 771-3546 (V/TTDD)  
 Email: [ods@subr.edu](mailto:ods@subr.edu)  
 Website: [www.subr.edu/ods](http://www.subr.edu/ods)

The Office of Disability Services (ODS), under the auspices of the University Counseling Center, assists students in meeting their unique academic/educational, personal, vocational and social needs that would otherwise prove to be an obstacle to educational pursuits. The Office of Disability Services (ODS) provides confidential services to those students who, in this post-secondary setting, **must request and provide the necessary documentation to verify a special needs request**. Diagnostic educational evaluations/examinations are not conducted through ODS. Academic accommodations are made based on a student's documented disabilities.

**Disruption of the Academic Process**—The University's Student Code of Conduct (Codes 1.6 and 2.2) broadly defines disruption/obstruction as any major/minor action which obstructs, or attempts to obstruct, an official University function, such as teaching, research, administration, or other campus activity.

[Disruption Policy](#) - link to PDF

[Report Classroom Disruption](#) - link to PDF

**Southern University Statement of Non-Discrimination**—In compliance with Title IX of the Education Amendments of 1972, Title VI and VII of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, and other federal, state, and local laws, Southern University and A&M College forbids discriminating or harassing conduct that is based on an individual's race, color, religion, sex, ethnicity, national origin or ancestry, age, physical or mental disability, sexual orientation, gender identity, gender expression, genetic information, veteran or military status, membership in Uniformed Services, and all other categories protected by applicable state and federal laws. This commitment applies, but is not limited to decisions made with respect to hiring and promotion, the administration of educational programs and policies, scholarship and loan programs, and athletic or other College administered programs. Discriminatory acts of any kind are strictly forbidden.

Any member of the Southern University and A&M College community has the right to raise concerns or make a complaint regarding discrimination without fear of retaliation. All inquiries regarding the application of this statement and related policies may be referred to:

Cedric Upshaw, Title IX Coordinator, at (225) 771-5565.

Complaints may also be made via email at [titleix@subr.edu](mailto:titleix@subr.edu) or by visiting [www.subr.edu/titleix](http://www.subr.edu/titleix).

**Standards for Satisfactory Academic Progress**—The Higher Education Act of 1965 as amended and final regulations set by the United States Department of Education (34CFR668.16) require that institutions of higher education establish reasonable standards of Satisfactory Academic Progress (SAP) as a condition of continuing eligibility for federal aid programs. Financial aid recipients are expected to make reasonable progress as a condition of receiving and continuing to receive student financial aid. Student progress is assessed according to both qualitative and quantitative measures. The University has developed this policy to provide a framework for monitoring and determining a student's Satisfactory Academic Progress in accordance with Federal and Institutional requirements. This policy applies to all new, transfer, re-entry, re-admit with transfer work, and continuing students at Southern University.

For additional information, please visit [www.subr.edu/cusa](http://www.subr.edu/cusa)

**Student Email Policy**—Email is a universal service that has greatly enhanced communication both internally within the Southern University and A&M College community and externally to users, including prospective students, alumni, and the public at large. The purpose of the University's general email policy is to describe the appropriate use of University email facilities, associated responsibilities, and rights of all users of University email facilities and official Southern University and A&M College email accounts. This student email policy is a supplement to the University's general email policy.

[Student Email Policy](#) - link to PDF

**Tobacco Free Campus Policy**—The Southern University System (SUS) maintains a 100% Tobacco-Free Policy. Smoking and tobacco use of any kind will be prohibited on all SUS campuses and/or other properties owned and/or leased locations/premises; all internal and external areas, parking garages, and parking lots; all entrances and exits; and in all SUS owned and/or leased vehicles. Students may not smoke in their own or others' vehicles when the vehicles are parked on SUS properties. This policy will be in place at all Southern University and A&M College sponsored events-both on our premises and at external locations hosting such events, including non-University hours and will further apply to all faculty, staff, students and visitors.

[SUBR Tobacco Free Policy](#) - link to PDF