

CMPS 501      Programming Languages  
Fall 2023      E130 Thurman

Instructor:      Dr. N. Gwee  
Office Hours:    MWF 2–3 pm, 4–5 pm; Tu 1–3 pm. Please email me for an appointment.

References:      Allen B. Tucker and Robert E. Noonan. *Programming Languages: Principles and Paradigms*. McGraw Hill.

Ravi Sethi. *Programming Languages: Concepts & Constructs*. Addison Wesley.

Terrence W. Pratt and Marvin V. Zelkowitz. *Programming Languages: Design and Implementation*. Prentice Hall.

Robert W. Sebesta. *Concepts of Programming Languages*. Addison Wesley.

Prerequisites:    Equivalent undergraduate programming languages course or Applying Level cognition of basic concepts of programming language.

**Course Description:** Study of various programming languages from conceptual standpoint; topics will include formal language definition, data storage techniques, grammars. Both numeric and string processing languages will be covered

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

**Program ABET Outcomes:** Graduates of the program 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]

**Outcome 4:** recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles; [PEO 1, 4]

**Outcome 6:** apply computer science theory and software development fundamentals to produce computing-based solutions. [PEO 1]

**Course Objectives:** Students should arrive at the Understanding Level (Bloom’s Taxonomy of Cognitive Outcomes) in Formal Language Specifications, Static and Dynamic Semantics; the Applying Level in Syntax Specification of Context Free Languages; the Analyzing Level in Lexical and Syntax Analysis; and the Evaluating Level in basic concepts of Programming Languages, including Bindings, Type Checking, Scope, Abstract Data Types, Statement Control Structures, Subprograms, Exception Handling, Concurrency, Imperative, Functional and Logic Programming Paradigms.

**Course Learning Outcomes:** Upon completion of this course, students will be able to:

1. Understand the concepts of programming languages and paradigms [ABET 1, 6]
2. Understand the needs of security protocols in programming languages [ABET 4]
3. Evaluate and learn new programming languages [ABET 1, 6]

Grading:

Attendance	20%	90 – 100%	A
Presentations	10%	80 – 89%	B
Research Paper	10%	70 – 79%	C
Midterm	20%	60 – 69%	D
Final	40%	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.

No electronic equipment, including cellular phones, may be used in any exam.

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:

Syntax and Semantics  
Syntax Specification of Context Free Languages  
Lexical and Syntax Analysis  
Bindings, Type Checking, Scope  
Abstract Data Types  
Statement Control Structures  
Subprograms  
*Mid Term Exam*  
Exception Handling  
Concurrency  
Imperative, Functional and Logic Programming Paradigms  
*Final Exam*

## **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 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 Moodle account, he/she should contact Ms. Chrisena Williams-Brown in the Division of Information Technology via email at [chrisena\\_williams@subr.edu](mailto:chrisena_williams@subr.edu) or via phone at (225) 771-5017.

## **INSTITUTIONAL POLICIES**

**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