

CMPS 501 Programming Languages
Fall 2019 Thurman 204 (MW 200–320)

Instructor: Dr. Nigel Gwee; E109 Thurman; nigel_gwee@subr.edu
Office Hours: MW 100–200, TT 130–330.

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
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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 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.