



CLARK ATLANTA UNIVERSITY  
CIS 200L Advanced Programming Lab  
Course Syllabus

Instructor Janth English

<b>Office Hours</b>	Mon., Wed. 11:00 – 1:00 Tue., Thu. 11:00 – 12:00 Tue., Wed. 8:00 – 9:00 p.m. <b>(Online)</b>
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Course Number/Sect	Course Title	Credit Hours	Semester	Time	Level (U/G)
CIS200L 01	C Programming Lab	0	Spring, 09	11:00 – 1:00 M	U
<b>Brief Description</b>	Detailed presentation of the concepts of structured programming design and implementation using the C programming language.				
<b>Prerequisites</b>	Grade of C or better in CIS 106.				
<b>Course Length</b>	32 hours (2 hours per week for 16 weeks)				
<b>HTTP Link</b>	<a href="http://www.cis.cau.edu/200">www.cis.cau.edu/200</a>				

**Course Description:**

This course features problem solving using the structured programming paradigm using the C programming language. Real world problems are presented for which the student will analyze, design, and implement solutions. Each lab is designed to reinforce the class lecture through a practical hands-on approach. Standard ANSI C will be taught within the Unix environment.

**Course Objectives:**

The overall objective of this course is to equip the student with a set of tools that will enable him/her to design and implement programming solutions for real world problems using the structured programming paradigm and the C programming language. The lab component emphasizes the implementation of problem solutions with standard ANSI C using a hands-on approach.

- To write C code to declare variables using the appropriate data types.
- To write C code to evaluate arithmetic expressions.
- To write C code to evaluate boolean expressions.
- To write C code that accesses keyboard input.
- To write C code that prints output to the terminal.
- To write C code to implement "for", "while", and "do while" statements.
- To write C code to implement the "if", "if else", and switch statements.
- To write C code to declare and manipulate single and multi-dimensional arrays.
- To write C code to create functions, pass arguments to functions, utilize return values from functions.
- To write C code to implement the "struct" language element.
- To write C code to create user define data types using the "typedef" construct.
- To write C code to declare and manipulate pointers.
- To write C code to read from and write to files.
- To write C code to implement the Common Gateway Interface (CGI).

**Learning Outcomes:**

Students shall be able to:

- Create and manipulate files and directories in the Unix environment.
- Understand and utilize basic shell commands.
- Design a solution for a problem of moderate complexity using functional decomposition within the structured analysis and design methodology.
- Implement (program) a solution for a given problem using the C programming language.

**Major Topics:**

1. Unix operating system and shell commands
2. Variable declarations
3. Expression evaluation
4. Iteration
5. Selection
6. Arrays
7. Functions
8. "struct" Statement
9. "typedef" Statement
10. Strings and String Functions
11. Pointers
12. File I/O
13. Dynamic Memory Allocation
14. Common Gateway Interface (CGI)

**Teaching/Learning Methods:**

This weekly two hour hands-on lab is mandatory for all students. The labs will reinforce the class lecture by giving the student practical experience in applying what was learned.

**Method of Instruction:**

The method of instruction includes lectures, homework assignments for lab, and hands-on laboratory assignments.

**Evaluation Methods:****Grading and other policies and expectations:**

The grading scale for this class is consistent with that of the university: 90-100 = A, 80-89 = B, 70-79 = C, 60-69 = D, and below 69 = F. The final lab grade is computed from results of the laboratory assignments. The lab grade weighs as 20% of the final class grade.

**NOTE: The grade received for this class will count for 20% of the grade for CIS 200, Structured Programming with C. CIS 200L is the lab component of that class.**

**Incomplete Policy:**

- Grade "I" may be assigned only when a portion of work remains incomplete at the final stages of the semester due to an emergency. For such an exceptional situation, documentary evidence (e.g., medical certificate, etc.) is necessary.
- Grade "I" will not be assigned for the purposes of improving the grade later or accommodating unsatisfactory performance.
- An "I" will automatically turn into an "F" if it is not removed during the next semester.
- The new grade will not be higher than the average daily grade earned by the student.

**Grade Appeals**

- Any questions or appeals regarding assignments and/or mid-semester exam must be resolved within 2 days from the date the material is returned to the student.
- Appeals or questions regarding the grading of the final exam must be submitted in writing **to** the instructor.

**General Conduct**

This class will be conducted in a manner that supports the CAU Campus Cultural Creed –

**"Clark Atlanta University is committed to academic excellence, building character and service to others. The university will achieve its mission by cultivating an environment of honesty, kindness, mutual respect, self-discipline, school loyalty, trust, academic integrity and communal pride."** In addition, the following rules apply:

- Attendance and participation in class is required.
- Attendance at all labs is mandatory. There will be no makeup labs given except with a legal excuse from the university.
- Each pre-lab assignment must be completed prior to the lab class.
- Lab assignments must be graded during lab class. It is the student's responsibility to ensure they receive a grade during each lab class.
- Dishonesty and cheating will result in an "F" and a possible expulsion from the class and the CIS program.

**Required Readings:**

*Programming in C by Stephen G. Kochan*

**Note: The class textbook is also the lab manual. Bring the textbook to each lab.**

**Course Outline and Schedule:**

<b>Week</b>	<b>Lab Topic</b>	<b>Pre-lab Exercises   Lab Class</b>
1	Syllabus Overview, Class Expectations	None
2	Unix Operating System: Creating and compiling C programs.	“Hello World”
3	Variable declarations and assignment	Chapter 3  In-lab Exercise
4	Arithmetic Expressions	Chapter 4  In-lab Exercise
5	Program Looping	Chapter 5   In-lab Exercise
6	Selection	Chapter 6   In-lab Exercise
7	Functions and Arrays	Chapters 7 & 8  In-lab Exercise
8	<b>Midterm Exam – No labs</b>	
9	The struct and typedef Statements	Chapters 9 & 14  In-lab Exercise
10	Strings	Chapter 10  Handout
11	Pointers	Chapter 11  In-lab Exercise
12	File I/O	Chapter 16   In-lab Exercise
13	Dynamic Memory Allocation & Link Lists	Chapter 17   In-lab Exercise
14	<b>Work On Projects</b>	
15	<b>Presentations</b>	
16	<b>Final Exams</b>	