Programming Techniques and Algorithm Development I
CMPS 190B-01 SYLLABUS

Credit Hours: 3
Contact Hours: 3 (2 hrs. lectures and 1 hr. lab)
Class Location: N204 Thurman Hall

REQUIRED COURSE TEXTBOOK: **Starting Out with C++: Early Objects, by Tony Gaddis, 9th Edition, 2018, ISBN-13: 9780134400242, ISBN-10: 0134400240.**

Reference Book: Starting Out with C++: From Control Structures through Objects, by Tony Gaddis, 9th Edition, 2018, ISBN-13: 9780134498379.

CATALOG DESCRIPTION:

This course is the first of a two-course sequence for Computer Science majors and minors. This is a rigorous course stressing a disciplined approach to problem solving, algorithm design, logic development, and testing and debugging of programs. This course will emphasize procedure and data abstraction, the detailed study of a programming language, and the evolution of computer hardware and software technologies. A current programming language will be used as a vehicle for expressing algorithms.

PREREQUISITES: None

INSTRUCTOR: **Dr. Shizhong Yang**
OFFICE LOCATION: **E105 Thurman Hall**
OFFICE HOURS: **Tuesday and Thursday 2:00 pm ~ 5:00 pm**
OFFICE PHONE NO.: **225-771-3113**

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:

Each graduate by the time of graduation will demonstrate:
1. An ability to analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solution (ABET Outcome-1),
2. An ability to design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline (ABET Outcome-2),

3. An ability to apply computer science theory and software development fundamentals to produce computing-based solution (ABET Outcome-6).

PROGRAM EDUCATION OBJECTIVES:

The Educational Objectives of the Computer Science Program are to produce graduates who:
1. Are thoroughly trained in methods of analysis, including the mathematical and computational skills appropriate for problem solving (PEO1).
2. 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 (PEO2).

Topic outline

Chapter	Topic
1	Introduction to Computers and Programming
2	Introduction to C++
3	Expressions and Interactivity
4	Making Decisions
5	Loops and Files
6	Functions
7	Arrays
8	Searching and Sorting Arrays
9	Pointers*
10	Characters, C-Strings, and More About the string Class*

GRADING SCALE:

A 90 - 100
B 80 - 89
C 70 - 79
D 60 - 69
F 59 and below

Class Attendance:	10%
Assignments/Projects	15%
Midterm Exam	35%
Final Exam	40%.

• **Children in Class Policy**
Children are **not** allowed in the classroom under any circumstances.

• **Disabilities Policy**

In compliance with the Americans with Disabilities Act (ADA), all qualified students enrolled in this course are entitled to "reasonable accommodations." Student must notify the instructor at the beginning of the semester (first 2 weeks) of any accommodations needed for the course.