TROY UNIVERSITY
CS 2250
Computer Science I

COURSE SYLLABUS

Fall 2024

PRE-REQUISITES:
MTH 1112 or permission of instructor

INSTRUCTOR INFORMATION:
Thi-Mai-Anh BUI, Ph.D
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INSTRUCTOR EDUCATION:
Ph.D. in Information System, 2016, University of Pierre and Marie Curie, France
M.Sc. in Artificial Intelligence and Multi-Media, 2011, University of La Rochelle, France
B.Sc(Eng) in Software Engineering, 2007, Hanoi University of Science and Technology,
Vietnam

CATALOG DESCRIPTION:
An introduction to the theory and development aspects of a high level programming language.
The course provides students with a foundation in problem solving, algorithm development,
and program design using C++. It covers programming methodologies, control structures,
predefined and user defined functions, input/output streams, control structures, logical
expressions, enumeration, repetition, multi-dimensional array and string manipulation,
structures, searching, sorting techniques, and advanced input/output. Program analysis,
design, development and testing are emphasized

STUDENT OUTCOMES:
- Describe the components of a microcomputer system
- Explain the relationship between hardware and software
- Explain the history of programming languages
- Plan and write algorithms using the sequence, selection, and repetition structures
- Differentiate between source code, object code, and executable code
- Describe the C++ data-types, arithmetic and logical operators
- Implement functions and function prototypes
- Demonstrate an understanding of: Input/Output, Selection and Repetition Control
  Structures, User-Defined Functions, User-Defined Simple Data Types, Namespaces,
  and the String Type, Arrays and Strings and Records (structs)
- Analyze specific problems and develop C++ solutions using sequence, selection, and
  repetition structures.

Students will demonstrate the above through their performance on the assigned programming
projects, exams and discussion Black Board exercises.

GRADING

Exam I	15%
Exam II	15%
Final Exam	30%
Quizzes/attendant	10%
Project	30%

GRADING SCALE:

Grades will be assigned according to the following scale:

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

TEXTBOOK

Tony Gaddis, Starting out with C++, Six Edition, Pearson, 2009, ISBN: 978-0321545886
A C++ compiler is needed. Microsoft Visual Studio and CodeBlocks are recommended for the course. You can download them free online as the instructions provided. "Computer problems" are not an acceptable excuse if you cannot turn in homework by the deadlines.

METHODS OF INSTRUCTION: In-Classroom Lectures, Labs, Tests, Handouts/Homework, Class Participation and Reading assignments.

HONESTY AND PLAGIARISM

* Plagiarism is defined as submitting anything for credit in one course that has already been submitted for credit in another course, or copying any part of someone else's intellectual work – their ideas and/or words – published or unpublished, including that of other students, and portraying it as one's own. All students are required to read the material presented at: http://troy.troy.edu/writingcenter/research.html

All material submitted for grade must be the student's own work.

Anyone found cheating and/or copying will receive an automatic 0 for that assignment or exam or dismissal from the course. This goes for the person who copies as well as the person who allows their work to be copied. Serious penalty (e.g: one lower letter grade) will be given for cheating and plagiarism and students will be required to retake a course if they get D or worse for that course.

OTHER POLICY

Exams are taken at the scheduled class time or at the scheduled final period. In the rare case when this is not possible, a make-up exam may be possible. However, this has to be approved by the instructor before the scheduled exam time. Make-up exams are not guaranteed to be the same as the exam given. If arrangements have not been made in advance, a missed exam will be recorded as a zero. Family deaths and extreme medical emergencies are handled specially (official proof is required).

PROJECTS

Give later about some rules/regulation of Mini-Project

Students are required to submit their source code file(s) as email attachments prior to the project deadline. In the event you are unable to complete a project or make it work correctly, be sure to submit your latest source code to receive partial credit. Students failing to submit projects within the time allowed will receive a project grade of zero and will not be allowed to make late submissions. Exceptions will be made ONLY under extenuating circumstances and ONLY with prior approval by the instructor. To receive full credit, projects must be submitted on or before the due date.

TENTATIVE SCHEDULE

Lecture 1	Course Introduction, Compiler information. Computer system, Programming Language, Input and Output	Gaddis, Chapter 1
Lecture 2	C++ Introduction, part of program, cout object, variable, data type: integer, floating point	Gaddis, Chapter 2
Lecture 3	Expressions and Interactivity, Cin object	Gaddis, Chapter 3 Project 1
Lecture 4	Making Decisions, Branch statements	Gaddis, Chapter 4
Lecture 5	Switch statement, Menu system	Gaddis, Chapter 4 Project 2
Lecture 6	Looping, while and do while statement	Gaddis, Chapter 5
Lecture 7	For loop, reading from a file	Gaddis, Chapter 5 Project 3
Lecture 8	Midterm exam I & II	
Lecture 9	Function: modular programming, function prototype, sending data to function	Gaddis, Chapter 6
Lecture 10	Function: local, global and static variable, reference variable as parameter, overloading function	Gaddis, Chapter 6 Project 4
Lecture 11	Array: One and two dimension array	Gaddis, Chapter 7
Lecture 12	Sorting and Searching Arrays	Gaddis, Chapter 7 Project 5
Lecture 13	Pointers	Gaddis, Chapter 11
Lecture 14	Pointers and reviews	Gaddis, Chapter 11 Project 6
Lecture 15	Final exam	