CS 201 section 1, Fall 2015

Instructor: Michael Kowalczyk
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Office Hours: 11:00am - 11:50am MWR, or by appointment
Email: mkowalcz@nmu.edu
Class Meetings: 10:00am – 10:50am MWF in 3103 Jamrich Hall
Course Website: https://educat.nmu.edu/

Overview:
This course covers how to program in C++. Topics include pointers, memory management, data structures, object-oriented design, and file processing.

Prerequisites:
CS 122.

Textbook:
C++ Pocket Reference, by Kyle Loudon (required). Other (optional) resources are listed below. They are linked from the course website – mostly as E-books through the NMU library:

- Programming with Objects: A Comparative Presentation of Object-Oriented Programming with C++ and Java
- Beginning C++ Through Game Programming, Third Edition
- Professional C++
- C++: The Complete Reference, Fourth Edition
- Ivor Horton's Beginning Visual C++ 2010
- Exploring C++: The Programmer's Introduction to C++
- cplusplus.com

Course objectives:
CS 201 forms the foundation for later CS courses (CS 222 and CS 228). Upon successful completion of CS 201, a student should be able to do the following in the C++ programming language:

- Solve programming problems through the use of deeply nested control structures, (multi-dimensional) arrays, and objects.
- Dynamically allocate and de-allocate memory for objects and arrays.
- Differentiate between the stack and the heap, both in terms of syntax (with both objects and arrays) and important conceptual differences.
- Differentiate between pass-by-value, pass-by-reference, and passing a pointer by value.
- Manipulate pointers.
- Write recursive functions.
- Write a linked list from scratch.
- Perform file I/O.

In addition, students should have a grasp of the following concepts upon completing CS 201:

- Operator overloading.
- Templates.
- Inheritance.

Evaluation of these learning outcomes will be done through assessments (quizzes and/or exams).
Equipment:
You will need a computer to program on. This includes installing some software (see the course website).

Grading:
Grades will be based on quizzes, exams, and assignments. Exams will always be announced in advance, but quizzes might be given during any class session. The relative weight of each graded item depends on its size and/or complexity. Also, some assignments may be given no weight at all – these assignments are valuable for your learning and growth as a programmer, but do not affect your grade directly.

Handing in Programs and Late Policy:
Programming assignments are handed in electronically. You can hand them in or revise them as often as you like up to the deadline. Once a programming assignment deadline passes, the hand-in directory closes, and no further submissions or revisions will be accepted. Don’t wait until the last minute to hand something in. Also remember that it is much better to turn in a partly completed assignment than nothing at all. In particular, it helps me understand where you might be having trouble.

Final Exam Date & Schedule Conflicts:
The final exam will be on Wednesday, December 9 from 10:00am until 11:50am. Any other exams will be announced throughout the semester. Any conflicts with the exams (due to religious observances, other coursework, intercollegiate athletics, etc) must be made known to me as soon as you are aware of the conflict.

Laptop Use:
You are responsible for keeping your laptop in good working condition and making frequent backups of your work. Note that the helpdesk does not backup your work if they need to fix your laptop (unless you want to pay them a fee), so make frequent backups to hardware external to your laptop before a crisis strikes.

Academic Conduct:
I work hard, with honesty and integrity; I expect my students to do the same.

Disability Services:
If you have a need for disability-related accommodations or services, please inform the Coordinator of Disability Services in the Dean of Students Office at 2001 C. B. Hedgecock Building (227-1700). Reasonable and effective accommodations and services will be provided to students if requests are made in a timely manner, with appropriate documentation, in accordance with federal, state, and University guidelines.