

Math 20210, Computer Programming, Spring 2009

Course Information

- **Textbook:** "Engineering problem solving with C++" by Delores M. Etter and Jeanine A. Ingber, Prentice Hall 2008. ISBN 9780136011750.
- **Class time and place:** MWF 10:40am-11:30am, Pasquerilla Center 112.
- **Instructor:** Yongtao Zhang (yzhang10@nd.edu)
Office location: HAYE 242
Office phone: (574) 631-6079
Office hours: Tue 2:30pm-5:30pm, or by appointment
- **TA:** Jimmy (Jianfeng) Zhu (jzhu@nd.edu)
Office location: HAYE 215
Office phone: (574) 631-3107
Office hours: Tue 7:00pm-10:00pm
- **Class website:** <http://www.nd.edu/~yzhang10/20210/index.html>
- **Homework:** Homework problems will be assigned each week on the web and collected electronically. Homework assignments should be submitted **before the due time**. You may submit a correction before that time, this will automatically replace your old submission. We will lock the homework folder after the due time. You will not be able to submit your homework once the homework folder is locked. You may keep backup copies on flash disks (although the OIT backs up the UNIX machines), but the only copies left on networked machines must be in your homework directory. Networked machines include any machine in a University lab and any machine in your room connected to the network.. You are encouraged to work on homework problems in groups, but the assignments must be turned in individually. Remember that you will not learn anything by simply copying another student's work. The main purpose of the homework is to help you learn the material. Experience shows that students who take their homework seriously do very well in the course because they have a better understanding of the material.
- **Exams:** There will be one midterm exam and the final exam. Midterm exam will be the in-class exam on **Friday Feb 27**. The final exam will be on **Tuesday, May 5**. A student who misses an examination will receive **zero points** for that exam unless he or she has written permission from the Vice president for residential life. If you have a valid excuse (illness, excused athletic absence etc) for missing an exam, please see me ASAP (preferably before the exam) and a makeup exam will be scheduled.
- **Grades:** homework 100 points, midterm exam 100 points, final exam 150 points. The total course points is 350. Cutoffs for major grades (A, B, C, D, F) will be assigned for each exam and announced in class so students have some indication of their level of performance. Your final grade will be assigned on the basis of your total score out of 350.

- **Honor Code:** Both examinations and homework are conducted under [the honor code](#). While cooperation in small groups in doing homework is permitted (and strongly encouraged), copying is not. Exams are to be done completely by yourself with no help from others.

Tentative Syllabus

1. Introduction on computing, account setup and basic Unix/linux commands.
2. Simple C++ programs.
 - Program structure
 - Data types
 - C++ operators
 - Input and Output
 - Basic mathematical functions
3. Control structures
 - Conditional Expressions
 - if/else statement, switch statement
 - while loop, do/while, for loop, break and continue statements
4. Working with data files
 - File stream
 - Read file
 - Write file
 - Error Checking
5. Functions
 - Programmer-defined functions
 - Parameter passing
 - Applied problems
6. One dimensional arrays
7. Two dimensional arrays and matrices
8. An introduction to Classes and Pointers