

CSCI 222 – Computer Organization Fall 2015

Instructor: Thyago Mota	Class: MWF 10:20am – 11:30am
Email: motat@moravian.deu	Lab: T 1:10pm-3:10pm
Office: PPHAC 220	Office Hours: Th 9-12pm, 1-2pm
Office Phone: (610) 861-1403	(or by appointment)

Course Description

We live in a new and exciting era of computing that requires programs to meet constantly increasing performance needs of mobile systems and big data processing while keeping power consumption under control. Today, writing efficient code matters more than ever! This course examines the organization of a modern computer system from the perspective of a programmer. We begin by understanding how programs are translated into the computer language and how the underlying hardware executes the resulting program. Among other things, we will discuss how computer systems represent data and programs and how memory hierarchy, processor architecture, and processor instruction set affect program performance.

Course Goals

Upon completion of this course, a successful student will be able to:

- Understand how programs are translated into computer language;
- Know how hardware executes the resulting program;
- Understand important aspects of both hardware and software that affect program performance;
- Be able to avoid common pitfalls caused by the way computer systems represent numbers; and
- Know how to optimize code exploiting the design of modern process and memory systems.

Textbooks

- Bryant, R. and O'Hallaron, D. *Computer Systems: A Programmer's Perspective*. Third Edition. Pearson.
- Kernighan, B. and Ritchie, D. *The C Programming Language. ANSI C*. Second Edition. Prentice Hall.

Readings will be assigned at the end of each class session. It is your responsibility as a student to keep up with the readings and to come prepared for each class.

Course Resources

All supplementary material (class schedule, power point slides, assignments, etc.) will be made available through Blackboard (blackboard.moravian.edu). Make sure you are enrolled in our course on Blackboard and email me ASAP if you are not.

Grading Policy

- Homework (30%) – individual activities handed out periodically throughout the semester at the end of each textbook chapter.
- Labs (20%) – group activities to be completed during lab sessions every week.
- Exams (45%) – there will be two midterms and a final exam, each weighing 15% of the final grade; you may only reschedule an exam for college approved absences (you must contact me before the beginning of the exam for make-up arrangements).
- Participation (5%) – attendance in class and active participation during class activities.

Special Accommodations

Students who wish to request accommodations in this class for a disability should contact the Academic Support Center, located on the first floor of Monocacy Hall (extension 1401). Accommodations cannot be provided until authorization is received from the Academic Support Center.

Academic Honest Policy

Please read and understand the College's Academic Honesty Policy (which you can find online in the Student Handbook). As stated in the policy, "all work that students submit or present as part of course assignments or requirements must be their original work unless expressly permitted by the instructor." Also, "When students use the specific thoughts, ideas, writings, or expression of others, they must accompany each instance of use with some form of attribution to the source." This applies to using code downloaded from the Internet. In this case, students must properly cite the part of the code that was used adding an appropriate comment such as, "this part of the code was downloaded from URL."

Late Work

I will accept work beyond its due date with a 20% penalty per day. Although labs are due at 11:59pm, we expect students to finish their practice during lab session.

This syllabus is subject to change.