CS 302-31 - Systems Programming
Fall 2003, Northeastern Illinois University

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Meeting: Mon 7:05-9:45 PM - CLS 3031
Office hrs: MWTR 4:30-5:30 PM

Description: This course serves as an introduction to programming systems software. We will cover different systems, assemblers, loaders, macro processors, compilers, and operating systems. Students will be expected to understand and be able to apply the topics to be presented into the resolution of problems related to systems software and machine architecture.

Course Prerequisites: CS 304, CS 308

Text: Beck, Leland L., System Software: An Introduction to Systems Programming, 3rd Edition. Addison Wesley Longman, Inc., 1997

Course Outline: (subject to change due to time constraints)

1. System Software
    - Machine dependent and independent systems
    - Database Management systems
    - Text Editors
    - Interactive Debugging systems
2. Machine Architecture
    - An hypothetical computer
    - CISC and RISC machines
3. Software Engineering
    - SE concepts
    - System specifications
    - Procedural vs Object-Oriented systems designs
    - Testing strategies
4. Assemblers
    - Basic functions
    - Machine dependent and independent features
    - Design options and examples
5. Loaders and Linkers
    - Basic functions
    - Machine dependent and independent features
    - Design options and examples
6. Macro Processors
    - Basic functions
    - Machine dependent and independent features
    - Design options and examples

7. Compilers
    - Basic functions
    - Machine dependent and independent features
    - Design options and examples
8. Operating Systems
    - Basic functions
    - Machine dependent and independent features
    - Design options and examples

Assignments:

- **Homeworks:** Six, each due the week after a chapter is finished
- **Programming:** Five group projects
- **Quizzes:** Six, each on the class following a homework due date
- **Exams:** A Midterm and a Final

There will be no makeup for missed quizzes, projects, or exams

Grading Policies:

1. The average over the five best quizzes scores will be worth 20% of your grade. The average over the five group projects will be worth 25% of your grade. The Midterm will be worth 25% of your grade. The final exam will be worth 30% of your grade. Homework submission is optional, and will be counted as extra credit together with in class participation.
2. Group projets assume collaboration. With the submission of each project students will be required to asses participation in an anonymous way. To preserve the integrity of the process, participation assesment will be applied to the projects score at the end of the semester and will affect directly the programming portion of a students final grade.
3. Regular attendance is expected. Any student who misses more than three class meetings will have her/his final course grade reduced by a letter
4. Cheating on exams, quizzes or homeworks will guarantee the student an F grade, and a report according to school's guidelines
5. No Ws, Is will be granted after the school's withdrawal deadline (Fri, Nov. 7^{th})
6. Your final grade will be based on the following scale:
    - **A** - 90% or above
    - **B** - 75 – 90 %
    - **C** - 60 – 75 %
    - **D** - 50 – 60 %
    - **F** - below 50%

If you have a physical, psychological, medical or learning disability that may impact on your ability to carry out assigned course work, I would urge that you contact the staff in the Accessibility Center office, Room A-118 in the A-Wing, exts. 5495, 5496, and 5497. The Accessibility Center will review your concerns and determine with you what accommodations are necessary and appropriate. All information and documentation of disability are confidential.