CIS 452 Operating Systems

Fall 2024

Dr. Denton Bobeldyk

Course Description:
Fundamental operating systems concepts: processes and threads, CPU scheduling, coordination and synchronization, deadlock, memory management, input/output devices, file systems, distributed systems, protection and security. Case studies and lab exercises using modern operating systems.

Prerequisites: CIS 241 and (CIS351 or (EGR326 and EGR major standing))

Credits: 3

Course Objectives:
After successful completion of the course, students will be able to:

1. Write a program that effectively utilizes process management system calls and InterProcess Communication.
2. Describe multi-threaded program execution on modern multi-core processors, and the use of concurrency control mechanisms.
3. Describe memory management concepts and the metrics used to evaluate their relative performance.
4. Describe filesystem implementation and storage space management.

Textbook:
Operating System Concepts Essentials by Silberschatz/Galvin/Gagne

This course is subject to the GVSU policies listed at https://www.gvsu.edu/coursepolicies/.

Technology requirements:
A personal computing device capable of running a programming IDE (Visual Studio, emacs/g++, etc), SSH client, accessing blackboard/blackboard collaborate, a webcam or video phone access, ability to record audio/video. Other software required as listed throughout the assignments. Lab time to work on assignments will frequently be provided for during face to face session time. Given the global pandemic, the student and instructor will use blackboard collaborate to answer any questions, this will allow the instructor to assist in troubleshooting the student's assignment while keeping a safe distance.

Point Breakdown:

Lab Assignments	40%
In-class exercises	15%
Projects	15%
Midterm Exam	15%
Final Exam	15%

GVSU Calendar of important dates located here:
https://www.gvsu.edu/registrar/academiccalendar.htm

Grading scale:

A	94
A-	90
B+	87
B	84
B-	80
C+	77
C	74
C-	70
D+	67
D	60

Additional Note on Plagiarism:
Don't do it. Please source any code you use for your assignment/project. Change variable names where appropriate. Please use camelCase as a naming convention. (i.e., thisIsCamelCaseNamingConvention). All issues of plagiarism will be reported and a 0 will be issued for that assignment/evaluation.

Academic Honesty All students are expected to adhere to the academic honesty standards set forth by Grand Valley State University. In addition, students in this course are expected to adhere to the academic honesty guidelines as set forth by the School of Computing and Information Systems, details can be found at http://www.cis.gvsu.edu/Academics/Honesty/.

In Case of Emergency

- Fire: Immediately proceed to the nearest exit during a fire alarm. Do not use elevators.
- More information is available on the University's Emergency website located at gvsu.edu/emergency

Course drop dates: See the course calendar above.

Late Assignments: Late assignments will receive no points. In-class exercises will not be available after class if you miss class. If there are extenuating circumstances, please contact the instructor prior to the due date or class. The lab with the lowest grade and two of the in-class assignments will be dropped if you completed your introduction slide.

Special Assistance:
If there is any student in this class who has special needs because of learning, physical or other disability, please contact me and Disability Support Services (DSS) at 616-331-2490.

Fire: Following overhead exit signs, immediately proceed to the nearest exit during a fire alarm. Do not use the elevator. See http://www.gvsu.edu/emergency for additional emergency information

ChatGPT:
Is allowed for programming labs/assignments, but not exams. Please ensure you understand each line of code you submit as you may be required to verbally defend your submission (you must understand everything you submit). If you are unable to defend your submission, you will receive no points for that assignment.

ChatGPT is allowed as a resource for 'essay' type questions, but copy and paste answers are not allowed (similar to copying and pasting stuff from the internet).

Social Media:

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https://www.linkedin.com/in/denton-bobeldyk-phd-271b4518/

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