CSCE 313-200: Introduction to Computer Systems

Spring 2018 Syllabus

1. Basics

Instructor:	Dmitri Loguinov (dmitri@cse.tamu.edu, 979-845-0512)
Lecture hours:	TR 2:20-3:35 pm in HRBB 113
Instructor office hours:	TR 6:45-7:45 pm, or by appointment, in HRBB 515C
TA:	Di Xiao (di@cse.tamu.edu)
TA office hours:	MF 11-12pm, or by appointment, in 501C
Main textbook:	W. Stallings, "Operating Systems: Internals and Design Principles," Pearson, 9th Edition, 2017
Recommended books:	J. Duffy, "Concurrent Programming on Windows," 2008 J.M. Hart, "Windows System Programming," 4th Edition, 2010
Website:	http://irl.cse.tamu.edu/courses/313/
Q&A forum:	http://piazza.com/tamu/spring2018/csce313200

2. Description

This class is covers common algorithmic and implementation problems arising in operating systems, inter-process communication, multi-threading, synchronization, memory management, process scheduling, and large-scale file I/O.

Prerequisites: CSCE 312 (computer organization), CSCE 222 (discrete structures for computing), CSCE 221 (data structures and algorithms), CSCE 113 (intermediate programming and design), and **knowledge of C/C++, debugging, and pointers.**

Beneficial: CSCE 311 (algorithms), CSCE 315 (programming studio).

Homework: Due at noon; late homework is acceptable with a penalty of 20% of the grade per day (no points after 5 days). *Example*: your homework scores 76 points, but is 2 days late. Your score is then reduced by 40 points and becomes 36. Each homework must be accompanied by a written report describing your implementation and showing the performance analysis requested in the handout. Write in as much detail as possible, explain the various observations, and comment on the sanity of obtained results.

Team work: No team work is allowed.

Exams and Quizzes: Three midterms covering all assigned topics and three quizzes. The final grade is computed as following:

A: 90-100%, B: 80-89%, C: 70-79%, D: 60-69%, F: 0-59%

Distribution of points:

Assignment	Qty	Format	Percent of final grade
Homework	4	Implementation and report	40% (10% each)
Midterms	3	Closed-book	45% (15% each)
Quizzes	3	Closed-book	15% (5% each)

3. Outcomes

At the end of the semester, the students will obtain experience with basic operating-system functionality, multi-threading, synchronization, file I/O, virtual memory, and C/C++ system APIs.

4. Schedule

The following is a tentative schedule of topics:

Lecture #	Title	Topic
1	Preliminaries 1	Syllabus, Visual Studio
2	Preliminaries 2	C++ pointers, homework #1, pipes
3	Operating Systems	Chapter 2
4	Processes	Chapter 3
5	Threads 1	Chapter 4
6	**Quiz 1**	
7	Synchronization 1	Chapter 5
8	Synchronization 2	Chapter 5
9	Synchronization 3	Chapter 5
10	**Midterm 1**	
11	Practice	Exam problems
12	Synchronization 4	Chapter 5
13	Synchronization 5	Chapter 5
14	**Quiz 2**	
15	Practice 2	Exam problems
16	Deadlocks	Chapter 6
17	File System 1	Chapter 11
18	**Midterm 2**	
19	File System 2	Chapter 11
20	File System 3	Chapter 11
21	File System 4	Chapter 11
22	**Quiz 3**	
23	Practice 3	Exam problems
24	Memory 1	Chapter 8
25	Memory 2	Chapter 8
26	Memory 3	Chapter 8
27	Scheduling	Chapter 9
28	**Midterm 3**	

5. Academic Honesty

This course assumes *independent* work on each assignment. You may not copy or submit *any part* of other students' work, material found in books or publications, or anything from the Internet unless explicitly allowed by the instructor. If such submission is allowed, the copied parts must be clearly marked and properly cited. If unsure, check with the instructor before submitting assignments. **Any academic dishonesty, including cheating and plagiarism, will result in an F* for the course and may lead to expulsion from the university.**

For more information, see Academic Rule 20 at http://student-rules.tamu.edu/

AGGIE HONOR CODE:

"An Aggie does not lie, cheat, or steal or tolerate those who do."

"Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System."

6. Americans with Disabilities

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit http://disability.tamu.edu.