Syllabus

Lesson 1:
- Intro to AOS

Lesson 2: OS Structures
- SPIN, Exokernel, L3 microkernel approach

Lesson 3: Virtualization
- Memory Virtualization
- CPU and Device virtualization

Lesson 4: Parallel Systems
- Shared memory machines
- Synchronization
- Communication
- Lightweight RPC
- Scheduling
- Shared memory multiprocessor OS

Lesson 5: Distributed Systems
- Lamport Clock
- Latency limits
- Active networks
- Systems from Components

Lesson 6: Distributed Objects and Middleware
- Spring Operating System
- Java RMI
- Enterprise Java Beans

Lesson 7: Distributed Subsystems
- Global memory systems
- Distributed Shared memory
- Distributed File Systems

Lesson 8: Failures and Recovery
- Lightweight Recoverable Virtual Memory
- RioVista
- Quicksilver

Lesson9: Internet Computing
- Giant internet services
- MapReduce
- Content Delivery Networks

Lesson 10: RT and Multimedia
- TS-Linux
- PTS

Lesson 11: Security
- Principles in Information Security
- Security in Andrew

Schedule

Week	Activity	Video Length	Date Due	Notes
0	Orientation		01/6/2020	Students should complete GT OMS orientation on Udacity (for OMSCS) or EdX (for OMS Cyber Security) before beginning course
1	OS Refresher	2h, 18min	01/10/2020	(Optional) Students who need a refresher on AOS topics should take this course
1	Lesson 1: Intro to AOS	46min	01/10/2020	
2	Lesson 2: OS Structures	2h, 40min	01/17/2020	
2	Homework		01/20/2020	(2 weeks) (11:59 PM EST)
2	Pre-lab		01/20/2020	(2 weeks) (11:59 PM EST)
3	Lesson 3: Virtualization	1h, 53min	01/24/2020	
4-5	Lesson 4: Parallel Systems	5h, 34min	02/7/2020	This is the last lesson that will be included in the midterm.
5	Project1: Virtual Machine Scheduling in KVM		02/17/2020 (11:55 PM EST)	(3 weeks)
6-7	Lesson 5: Distributed Systems	3h, 20min	02/21/2020	(Not included in the midterm)

7	Midterm		02/28/2020 to 03/2/2020	From 11:55PM Friday to 11:55PM EST Monday
8	Lesson 6: Distributed Objects and Middleware	1h, 56min	02/28/2020	
9	Project 2: Barrier Synchronization		03/09/2020	(3 weeks) (11:55 PM EST)
9-10	Lesson 7: Distributed Subsystems	3h, 48min	03/13/2020	
11	Lesson 9: Internet Computing	2h, 34min	03/20/2020	
11	Project 3: Distributed Service using GRPC		03/30/2020	(3 weeks) (11:55 PM EST)
12	Lesson 10: RT and Multimedia	1h, 15min	03/27/2020	
13	Lesson 8: Failures and Recovery	1h, 58min	04/3/2020	
14	Lesson 11: Security	1h, 17min	04/10/2020	
15	Project 4: Implement MapReduce Framework		04/20/2020	(3 weeks) (11:55 PM EST)
16	Final Exam		04/24/2020 to 04/27/2020	from Midnight Friday to Midnight Monday

Grade Distribution

- Pre-lab: 2%
- Project 1: 12%
- Project 2: 12%
- Project 3: 12%
- Project 4: 12%
- **Piazza Participation:** 3% (Provide answers to peer questions; Ask questions; Work out past exams collaboratively, etc.); Note: We will use the summary stats from Piazza in the following categories: "views", "contributions", "questions", "answers". The exact weight of each is not revealed to the students, but I am sure the students are savvy enough to know which would count for more!
- Homework assignment (on required background): 3%
- Two paper summaries: 2% (Students sign up on the Wiki and choose two papers to write summaries)
- Midterm: 20%
- Final: 22%

The exams will be conducted using Proctortrack. You are allowed ONE sheet of BLANK SCRATCH paper at the time of the test for you to do scratch work. You have to show both sides of the paper to the webcam before starting the exam.

Extra Credit:

- Virtual index card: 0.5% (outside the above grade distribution)
- Video Hangout attendance: 0.5% if at least 10 appearances through the semester for the weekly hangout.
- CIOS completion rate at the end of the semester if it exceeds 95% everyone will get 1% added to their course total.