



Advanced Operating Systems

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Department of Computer Science and Information Engineering
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Course Overview

- Lecture Schedule:
 - Time: Thursday 2:20PM ~ 5:20PM
 - Room: 105 CSIE Building
- Lecturer:
 - Dr. Chi-Sheng Shih
 - Office: 523 CSIE Building
 - Email: cshih@csie.ntu.edu.tw
 - Office Hours: 9:00AM ~ 11:30AM on every Friday
- TA:
 - TBD

Course Website

- [https://ceiba.ntu.edu.tw/1072CSIE7010
AOS](https://ceiba.ntu.edu.tw/1072CSIE7010_AOS)
- Course Website will provide
 - Slides
 - Supplied materials
 - Critics/presentation submission
 - Discussion forum

Topics To Be Covered: from elephants to ants

- Distributed Operating Systems + cloud computing
 - Communication (Message passing, RPC, Shared memory, Synchronization)
 - Resource management
 - Distributed File System
 - Distributed Memory Systems
 - Docker/Container
- Middleware for IoT/M2M
- Embedded (Real-Time) Operating Systems
 - Scheduling algorithms for Low Power Platforms and Safety Applications
 - Architecture
- Robotic Operating Systems (ROS)
- Operating systems for multi-core/processor platforms
 - Operating systems for multi-core/processor platforms
 - Virtualization for Multi-core/processor platforms

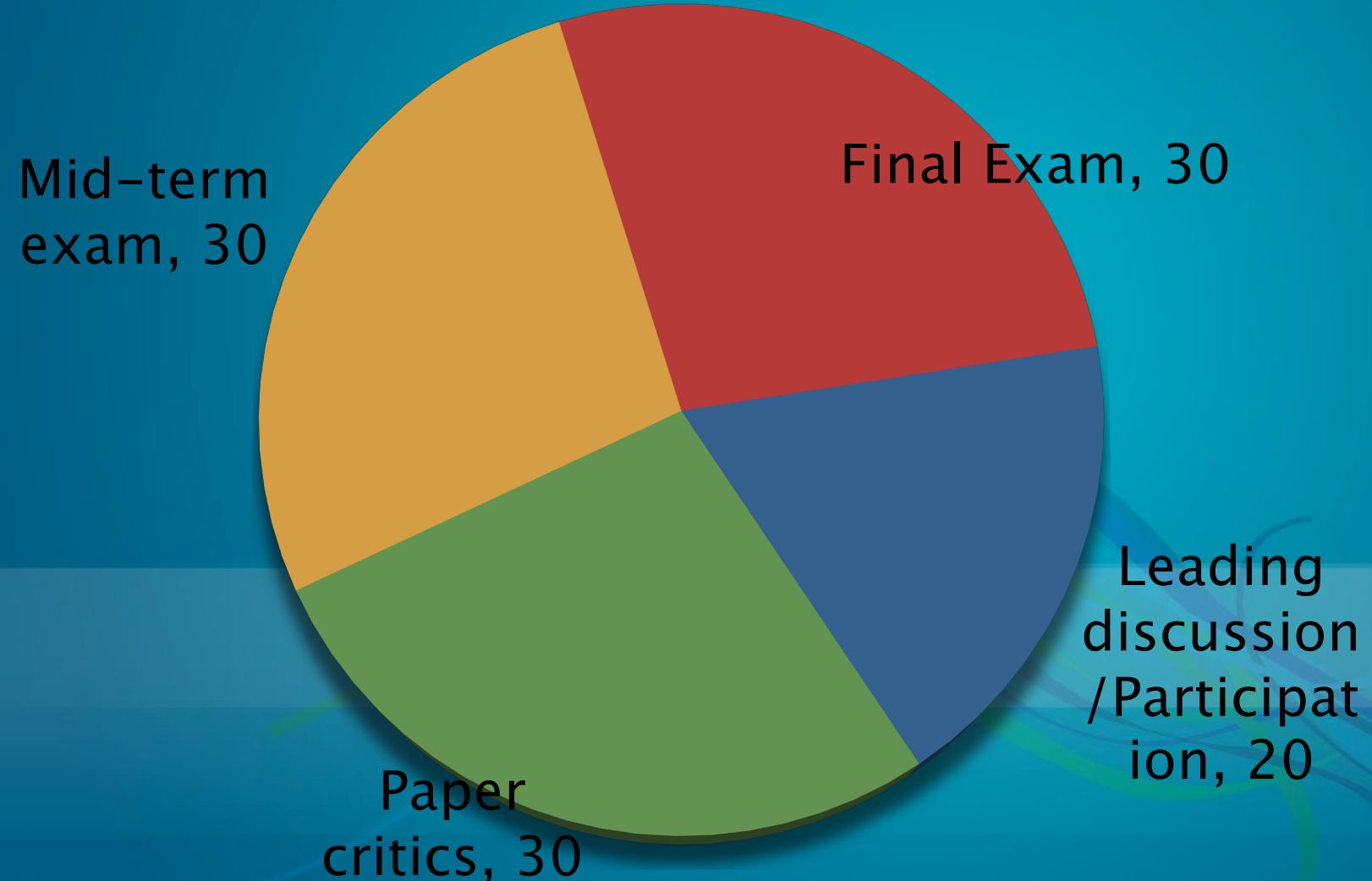
Recommended Textbooks

- Pradeep K. Sinha, **Distributed Operating Systems Concepts and Designs**, IEEE Press, NY, 1997.
- Tanenbaum, **Distributed systems: principles and paradigms**
- Khan, **Practical Linux Programming: device drivers, embedded systems, and the internet.**
- P.J. Felbelman, **A PhD Is Not Enough!: A Guide to Survival in Science.**
- Listed reading materials including book chapters and latest papers on the website.

Student Responsibilities

- Unlike undergraduate classes, I expect graduate students to over achieve and to work with initiative.
- Students are responsible for
 - getting their work done on time,
 - working independently,
 - researching the literature, and
 - attending class and participating in class discussions.

Grading Policy



Grading Policy

- Paper critics: 30%
 - You will be given 2 opportunities of writing critics for the provided papers in the semester.
 - The reading list will be provided no later than March 8th, 2018.
- In-class Participation and Leading Discussion: 20%
 - Participation:
 - Participate the discussion in the class.
 - Tell us your name whenever you speak.
 - Maximum 5% for each discussion.
 - Leading Discussion (10%)

Leading Discussions

- 10 to 12 leading discussions from the students.
 - The discussion leader receives 5 to 10 points.
- In every week, starting on March 21st, 2018
 - One leading discussion and each discussion lasts for 15 to 30 minutes.
 - The goals of the discussion are:
 - To know the pros and cons of the paper and
 - To figure out the future research direction.
 - All students are required to read the paper and participate the discussions.
 - The leaders should prepare five minutes presentation for the background, leader's viewpoints, and discussion agenda.
- It is **NOT** leader's responsibility to get the students to know the paper.
- The paper list will be provided no later than March 7th, 2019.