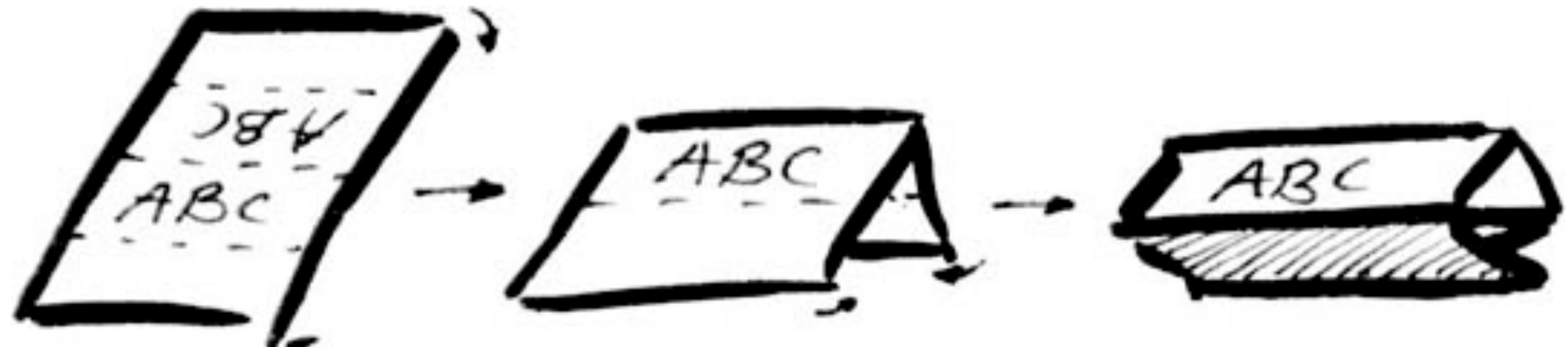


Make a nameplate.

- Write **SUPER LARGE**
 - Put your name in the center
 - Put your preferred pronouns underneath (if you have them)
- Fold as below
- Hang onto it for the quarter!



CSE 134

Embedded Operating Systems

Dr. Andrew Quinn

Discussion (10 min)

- Draw a “classic” layered system (think 13s, 130, etc.)
 - Include hardware, applications, and an **operating system**.
 - Where do the prereqs (120 and 130) fit into this picture?
 - What does this tell you about an OS’s role?
- Name some operating systems!

Who are we?



Dr. Andrew Quinn



Leo Conrad-Shah

Who are you?

- What do you want to be called?
- What are you excited to learn in this class?
- What are you nervous about for this class?
- What are you (outside of class) interests/hobbies?
- If you're comfortable—upload a selfie.

Dog Tax



What is this class about?

- How do operating systems work?
 - What tradeoffs do they face?
 - What principles do they follow?
- Build an Operating System!
 - No, not a fully fledged one.
 - Still, probably the largest project you have worked on.

After this class, you will...

- be able to implement complex designs in real systems.
- be able to extend existing systems to add new functionality.
- be able to explain system designs, in English.
- be able to critique system designs.
- know how OSes support processes, virtual memory, and IO.

What will we cover?

Weeks	Subject
Week 1	Introduction
Week 2	Concurrency Review
Week 3	Processes and Scheduling
Week 4–6	Virtualizing Memory
Week 7–9	File Systems
Week 10	Advanced Topics

How will you learn?

- Mondays and Wednesdays—traditional lectures
 - Read the book beforehand (when applicable)
 - Come prepared to ask questions, participate in discussions, etc.
- Fridays—Hands-on experience (bring your laptop)
 - We'll go through code together
 - Often focused on assignments

What are your learning resources?

- Course notes/slides posted on course website
- Course recordings posted on Yuja
- Office Hours for *specific questions*
- Piazza

Operating Systems: Three Easy Pieces

[Remzi H. Arpaci-Dusseau](#) and [Andrea C. Arpaci-Dusseau](#) (University of Wisconsin-Madison)

How do you succeed?

Historically, I have found an extremely high correlation between student success and attendance and lectures and office hours.

How will you be evaluated?

Metric	Percentage
Assignments	60%
Homework	30%
Final	10%

Assignments

“Students Learn best by Implementing”

- Extend the educational OS Pintos in “C”
 - Don’t be fooled—it is still quite large!
 - Practice designing solutions within a **bigger** context
- 4 assignments:
 - Assignments 2–4 build on each other
 - There is some inherent double jeopardy :/

Assignments (cont)

“Students Learn best by Implementing”

Metric	Percentage
Tests Passed	60%
Design Document	40%

Assignments (cont)

“Students Learn best by Implementing”

- Assignment 1 will be on your own
- Assignments 2–4 will be with a partner
 - Same partner for the **whole quarter**.
 - Choose a partner wisely. Set clear expectations.
 - You will have 3 grace days as a pair.

Assignments (cont)

“Students Learn best by Implementing”

Assign	Desc.	Expected Due Date
1	“Alarm” clock	04/19
2	User Programs	05/03
3	Virtual Memory	05/22
4	File Systems	06/07

Homework

- A few problems due EOD on Monday:
 - Some will be about lecture material
 - Some will be about Pintos
- Planning for 9...but we probably will have fewer

Final Exam

- Cumulative test
- On 6/10 4PM-7PM (time from registrar)
- Best way to prepare: The Homework!

DRC Accommodations

- If you have a DRC accommodation, let me know ASAP
 - I cannot apply them retroactively!

Other Resources

- The syllabus outlines the many resources for you at UCSC:
 - Title IX
 - CARE
 - CAPS
 - Slug Support
- Let me know if/how I can help you.