

COSC 461 — ADVANCED OPERATING SYSTEMS COURSE INFORMATION

Be sure to read all of this document!

1 The topics

Computer Systems I and Computer Systems II covered the structure of hardware and software systems, building from simple components to complete, general purpose environments. For the operating system in particular, software structures could hide the hardware from programmers, providing a simpler, abstract programming interface while handling the sharing of computing resources across processes and users. These courses provided demystification, showing how complex systems structures such as an operating system **could** be built.

Real systems are complex structures with complex behavior. Measuring that behavior is inherently difficult. Small changes in the system's inputs and structure can change its performance in unpredictable and sometimes significant ways. Determining which elements of a complex system are responsible for a given behavior requires deep comprehension, clever experimentation, and careful analysis.

In short, this course will **not** be like Systems-I and -II; instead, it will assume that background, using it to delve into systems research and challenges of experimental methods on complex systems. What we **will do** in this course is read and discuss a good deal of existing research. Moreover, we will develop our own experiment or two, and we will implement and conduct those experiments.

2 Lectures and labs

This class meets on **Monday, Wednesday, and Friday** of each week, from **10:00 am to 10:50 am**. Lectures will be held in **Seeley Mudd 204**, while the occasional lab will be held in **Seeley Mudd 007**. I will announce labs days on the course web site when they occur.

You are expected to be present for **all of the lectures and labs**, and so missing either is strongly discouraged. I will not teach material twice, so if you miss a lecture or a lab, you're on your own. If you must miss lecture or lab due to an illness or other emergency situation, contact me and we will make some kind of accomodation. **If you have a conflict** with a lecture or lab for any non-emergency—an athletic event, a performance, a vacation—then **the choice is yours to miss or to attend**. If you choose to miss the class meeting, I do **not** want to know *why* nor even *that* you are missing class. You have elected, voluntarily, not to attend, and you must be prepared to obtain and learn the material that you missed on your own. I, of course, recommend that you choose to attend the class meeting when these conflicts arise. Do not underestimate the willingness of those who run extra-curricular programs to make accommodations for your academic demands.

I expect you not only to attend lectures and labs, but also to be attentive for them. For a small, research-focused course like this, I must stress the importance of being prepared and engaged; without that, the class will not go far.

3 Texts and materials

All materials for this class will be posted on the course web page as needed. There is no textbook, and readings will primarily be drawn from research papers.