

CS144 Administrative Details

CS144 Staff

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Summary

CS144 is an introductory course on computer networking, specifically the Internet. It focuses on explaining how the Internet works, ranging from how bits are modulated on wireless and in wireless to application-level protocols like BitTorrent and HTTP. Students implement a handful of low-level protocols and services, including reliable transport, IP forwarding, and a Network Address Translation device. Students gain experience reading and understanding RFCs (Internet protocol specifications) as statements of what a system should do. The course grounds many of the concepts in current practice and recent developments, such as net neutrality and DNS security.

Prerequisites

The formal prerequisite for CS144 is CS110. CS144 is a systems course: a significant portion of your grade is based on programming assignments in C. Most core, low-level systems today (OS kernels, cloud services, databases, networking stacks) are still written in C, for good reasons. If you are not very comfortable with C and familiar with gdb, then you will likely find the programming assignments very difficult. There will be a gdb tutorial early in the quarter as a refresher course.

Credits

If you are an undergraduate, you must enroll for 4 credits. Graduate students must enroll for 3 credits.

Grading

Computer networking covers a wide range of topics and expertise, ranging from low-level protocol design and implementation to analytical evaluation of networking performance. The ethos behind CS144's grading scheme is that mastery of a subset of this broad area demonstrates a mastery of the material. Correspondingly, CS144's grading scheme weighs your high grades and accomplishments more than your lower grades and misunderstandings. In practice, this leads to a slightly complicated grading formula.

Your grade in CS144 is based on your performance on two exams (midterm and final) and five programming assignments. Excelling at either demonstrates a sufficient understanding of the material. Correspondingly, CS144 has a "max" policy for your final grade, using a weighted sum of your exam and assignment grades.

If your exam grade is higher than your assignment grade, then your final grade is $\frac{2 \cdot exam}{3} + \frac{assign}{3}$. If your assignment grade is higher than your exam grade, the weighting is reversed: $\frac{exam}{3} + \frac{2 \cdot assign}{3}$.

Because the final exam is cumulative but the midterm only covers half of the quarter, your exam grade follows a similar ethos: acing the final demonstrates you have mastered the material regardless of a possibly poor midterm grade. Correspondingly, your exam grade is $\max(\text{final}, \text{avg}(\text{final}, \text{midterm}))$.

Your programming assignment grade is a simple average of the assignment grades. However, because assignment 2 builds on assignment 1 and assignment 5 builds on assignment 3, these assignments follow a max policy as well. For example if you do poorly on assignment 3, but ace assignment 5, then your assignment 3 grade is replaced by assignment 5's. The flipside of this, of course, is that if you can't get assignment 3 working at all it might be difficult to do well on assignment 5. Therefore, your programming assignment grade is $\frac{\max(a_1, a_2), a_2, \max(a_3, a_5), a_4, a_5}{5}$.

Putting it all together, the grading formula is:

$$e = \max(\text{final}, \text{avg}(\text{final}, \text{midterm}))$$

$$a = \frac{\max(a_1, a_2), a_2, \max(a_3, a_5), a_4, a_5}{5}$$

$$\text{grade} = \max\left(\frac{2e+a}{3}, \frac{e+2a}{3}\right)$$

Late Policy

Programming assignments are due on Thursdays, at the beginning of class. You may turn in any programming assignment in late, until Saturday, 11:59PM. If you turn an assignment in late, its maximum grade is capped at 90%. Note that this does **not** mean 10% is deducted. A 75% will be a 75%, but a 95% will be a 90%. The idea is that you can turn in something that mostly works and receive full credit for your work, rather than fall behind in class in order to make up for a penalty.

Incomplete Policy

Our general policy is to never give incompletes for CS144. If you are falling behind or something life-changing comes up, please contact us immediately and we'll try to work something out. Generally, taking too heavy a course load is not a great justification: courses last a quarter for a reason. But, for example, H1N1 last year knocked out a few students for 2 weeks, and we were able to make accommodations and give advice on how to proceed. The reason we don't allow incompletes is because programming assignments use VNS. Grading them outside the normal quarter is exceedingly difficult. Furthermore, chances are you'd rather not spend the winter holiday filling in protocol header fields.