

Computer Science is “Hard”

Looking at the Gender Gap Between Two Computing Programs

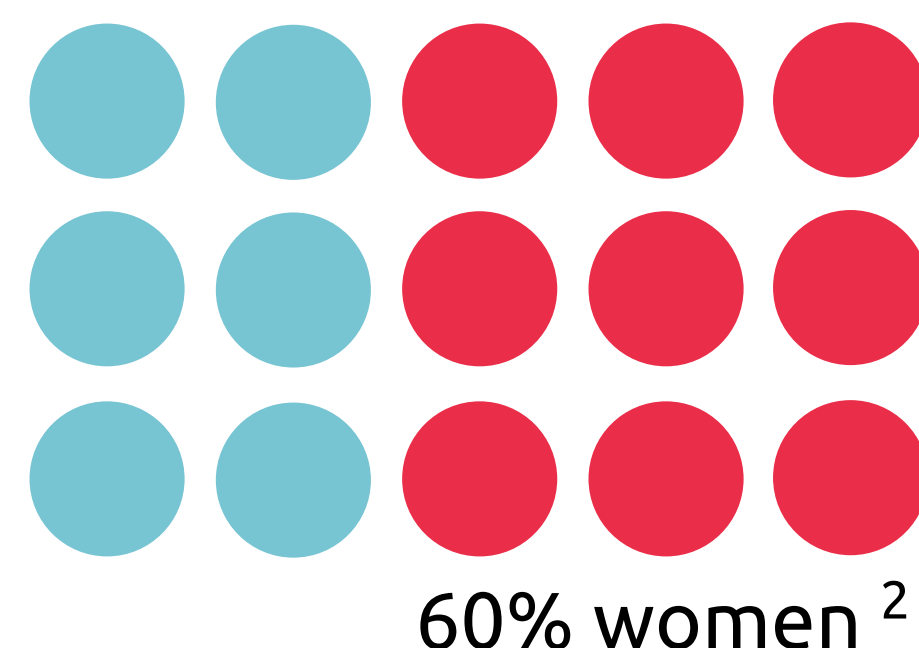
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Technology, Arts, & Media (TAM)

Program Details

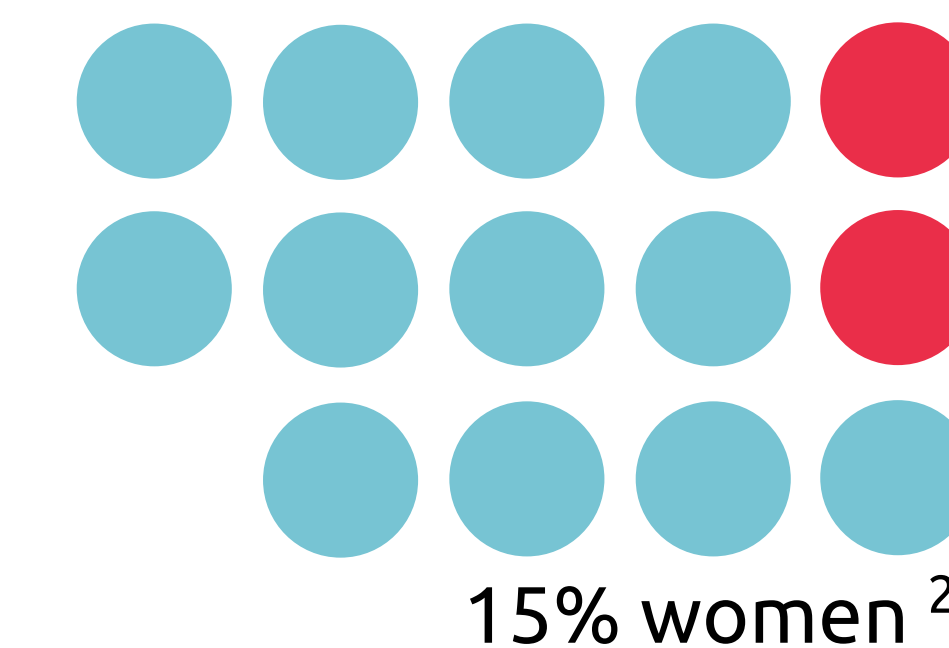
- 21 credit hour minor
- Enrollment limited
- Most popular minor on campus
- 75 students graduate¹ per year
- Grad rates steady growing for the last 5 years



Computer Science (CS)

Program Details

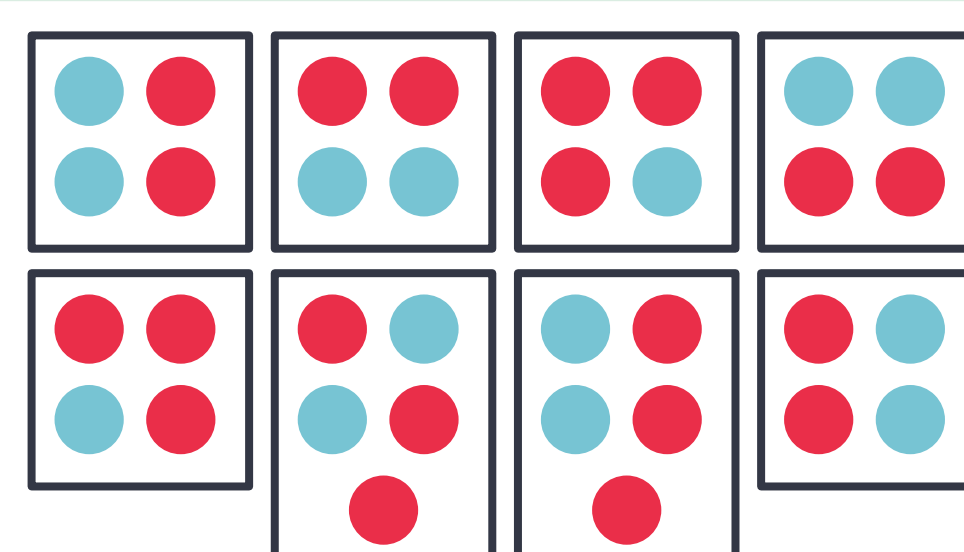
- 128 credit hour major (BS & BA)
- Extremely enrollment limited
- 71 students graduate¹ per year,
- Grad rates doubled in the last 2 years
- Grad rates will double again in next 2 years



¹ Graduation rates reported over a 5 year average ² College of Engineering only reports data on binary genders

Introductory Classrooms

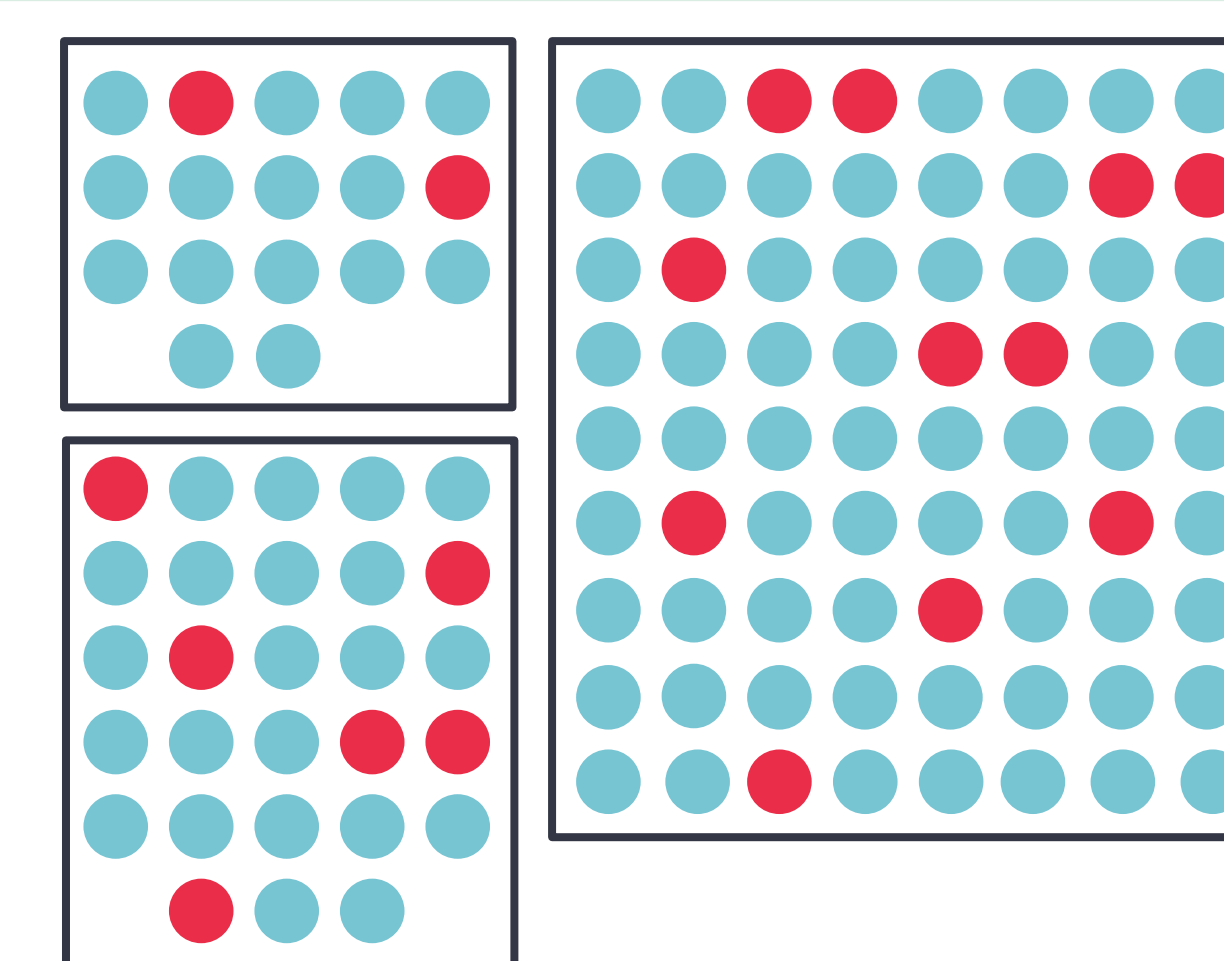
- Set cap, roughly 170 students per semester³
- Only offered to TAM students
- Classes capped at 20-25 students
- Personal environment, lab and critique structure
- Only instructors (no TAs or course assistants)



³ Diagram shows students grouped by class size. Women are in red, men in blue, 1 dot equals 5 students

Introductory Classrooms

- No cap, upwards of 600 students per semester³
- Offered to all majors
- 3 classes of large sizes
- Lecture class with separate recitation lab
- Instructors with multiple TA and course assistants



Discourse

Learning Material

“Alright, so today, we are going to be talking about grids, and the kind of role in design and information and fun things like that.”

Mistakes and Challenges

Student quote from anonymous survey : “I think the professor could have a better concept that not all of us are super creative.”

Response: “I do recognize that. Not all of are as strong creatively and aesthetically as other people. But in the same vein, I had to struggle in calculus. You know, uh, and that’s okay. And it’s okay to not be very strong creatively. That’s hopefully why you’re in this class, because you’re going to learn to do that better. That’s why I had to take calculus, so I could get better at math. It was awful, I hated it, but I learned from it. So, yes, this is going to be easier for some students than others, just as other courses might have been easier for you than others. That is the nature of higher education. I’ll say, don’t let that frustrate you, look at that as an opportunity to grow and to strengthen those muscles that maybe haven’t been exercised much. That’s a good thing. That’s a good thing to be challenged.”

Discourse

Learning Material

- “This is the kind of stuff that drives people out of computer science. [. . .] Getting the right type of variable you need is a pain.”
- “It’s not you. It’s not that you’re dumb. This stuff is really hard when you first learn it. It’s really confusing.”
- “[K]eep writing code for fun, and SLOWLY it will get less and less painful, but it will be painful for a while.”

Mistakes and Challenges

- “All you guys are getting frustrated because of syntax, syntax is actually not that difficult . . . syntax is very easy to Google. [. . .] It’s not very difficult.”
- “I’m doing something very dangerous here. I’m programming on the fly, which means I will - you will see me make mistakes, Which is good. Cause it happens to all of us.” [later] “Okay, so far I haven’t done anything stupid.”
- “Strong men don’t not make mistakes”
- “Don’t be afraid to look like an idiot”