Some say digital literacy should be required for undergraduates.

Computer Science Transitions From Elective to Requirement

Earning a college degree often involves completing a list of general education requirements. Aimed at turning out well-rounded graduates, the mandated curriculum can include groups of courses from a variety of disciplines—literature, philosophy, social and physical sciences, history, and foreign languages.

As we continue on a track where technology powers everything from our toothbrushes to our textbooks, should computer science be added to the list?

"Yes, it absolutely should be," says Geoffrey Bowker, professor of informatics at the University of California—Irvine. "All aspects of our personal lives and our work lives are affected by computers. We need to know about the tools that we're working with."

Some universities include computer science among options to satisfy science or math requirements. At UC—Irvine, students choose three courses from computer science, public health, economics, physics, biology, chemistry, earth science, philosophy, or international studies to meet their general education requirement in science and technology. But offering students a taste of computer science is not enough, Bowker says.

"Getting a flavor of science is great," he says. "But computer science is not a flavor; it's a staple."

While Bowker is fighting to make computer science a staple at his university, it is already a requirement at some institutions.

Each of the nearly 2,000 freshmen entering Georgia Institute of Technology each year must take a computer science course regardless of their major, says Charles Isbell, associate dean for academic affairs at the school's College of Computing.

"Why you need to take a CS1 ... is the same reason why you need to take humanities, why you need to take a science, why you need to take a math," he says. "It's not because you're going to be programming ... it's because each of those represents a different way of thinking."

Even some nontechnical schools are making computer science a priority.

Every student at Montclair State University in New Jersey must complete a computer science in order to graduate. For most students, that course is Introduction for Computer Applications: Being Fluent with Information Technology. (Music majors take Music and Computer Technology I.)

The course is designed to teach students majoring in subjects such as fashion, dance, or art history about network security, artificial intelligence, databases, and e-commerce, says Michael Oudshoorn, chairman of the computer science department at Montclair.

"It's not aimed at making them experts; it's aimed at making them aware," Oudshoorn says. "They do live in a digital age ... They have an obligation to know something about the technology."

Most people acknowledge the significant roles computers play in their daily lives, but some question adding another requirement to the undergraduate course load when basic programming skills can easily be acquired outside of the classroom.

"A lot of the work I've had to do ... requires some basic HTML and CSS knowledge," says Paolo Balboa, who took basic computer science courses on his own initiative while earning his B.S. in journalism at Ohio University.
"But you can Google these kind of things now, so I think it's not totally necessary."

Georgia Tech's Isbell says the same could be said for any general education requirement, but students would miss out on the bigger picture.

"The problem with computer science ... people think it's the science of computers," Isbell says. "It's not just an application of math or engineering or science."

"The people who don't think it's important ... think that, well, all computer science is is programming alone in the basement with a bag of Cheetos, and that's the end of it. But it's not; it's a way of thinking. It's a way of viewing the world."

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