

November 2008

I am writing to propose a programming requirement as foundational for all students graduating UCSC. Gen-ed requirements are suppose to cover foundational skills, such as writing and basic quantitative literacy. A 21st century graduate who cannot program and think algorithmically is much less able to comprehend the world than a student who does not know X.

Programming/algorithmic thinking is critical to all disciplines, I do think this can be satisfied in ways suitable to different divisions. I also think it would not be impactful on campus resources.

This is a not a proposal of the CS department as a whole but has been my long held personal opinion. I first offered this view to CEP in the 70's. At that time the campus had UNIX with all students having accounts. Some Universities such as Dartmouth were getting national attention for such a forward thinking requirement. Unfortunately many of my colleagues in that era thought this was too specialized a skill and missed a critical opportunity to benefit the campus image.

I suspect at this time all faculty use computers and benefit from an understanding of how they work. Music and art have "digital" methods. Social theory has computational models. Linguistics and philosophy have first-order logics. It would be easy to have a range of appropriate courses. For example, the effective use of spreadsheets and the ability to add programming scripts is very powerful. The use of matlab and maple as a programming system is in widespread use in the science and engineering. Cowell at one point offered such a course in its college core sequence.

Sincerely,

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