Attachment 3: Undergraduate Minor in Computational Science and Engineering

Computing has become the key enabler of fabulously rapid advances across nearly all disciplines of the academy and throughout all segments of society. Many recent advances of this kind are the result of scientists and engineers building detailed models of physical systems and then simulating their behavior, or solving relevant systems of equations numerically, using powerful hardware and software. Students who understand how to do this are becoming increasingly valuable to employers. Moreover, looking at problems through the lens of “computational thinking” can bring new insights to students’ future research, for those interested in graduate education.

The Computational Science and Engineering Minor, administered by the OSU Department of Computer Science and Engineering (CSE) and offered under the auspices of the State of Ohio’s Ralph Regula School of Computational Science, is designed to provide such knowledge and skill. It educates undergraduate students in both conceptual and practical computational aspects of science and engineering.

Impact for the Student

Completion of the program leads to a transcript designation that can and should be advertised to prospective employers. Candidates with not only discipline-specific knowledge in computational science and engineering but also a clear conception of computational thinking are very attractive to most employers and prospective graduate schools.

Curriculum

The Computational Science and Engineering Minor consists of six courses (comprising a minimum of 15 cr-hrs) in five required competency areas plus one elective area. Rules of the College of Engineering allow majors in Engineering to “double-count” any of these courses in their major. Because the minor program is offered under the auspices of the Ralph Regula School of Computational Science—a “virtual” school run through the Ohio Supercomputer Center—many courses to meet the requirements are also available from other Ohio institutions who are partners in the RRSCS.

Prerequisites

All students earning the Computational Science and Engineering Minor must complete the first two semesters of calculus (for engineers and scientists). Most of the courses that could count toward this minor are academically accessible to undergraduate students majoring in Engineering, Mathematics, Physical Sciences, and some areas of the Biological Sciences, based only on courses already required in those majors or other courses counted in the minor.

Getting Started

Prospective students should begin by contacting the CSE Department’s Undergraduate Advising Office (DL 374, 2-1900).

Course options listed on reverse.
For more details, please see:
http://www.cse.ohio-state.edu/ugrad/cseminor.shtml