THE OHIO STATE UNIVERSITY

College of Engineering

Undergraduate Education & Student Services

122 Hitchcock Hall
2070 Neil Avenue
Columbus, OH 43210-1278

614-292-2651 Phone
614-292-9379 Fax

engineering.osu.edu

Memo

To: Randy Smith, Vice Provost for Academic Programs
From: Rosie Quinzon-Bonello, Assistant Dean for Curriculum and Assessment
Date: December 9, 2024
Re: Center for Computing Education

Attached is a proposal submitted by the College of Engineering to establish the Center for Computing Education (CEE) as a college-level center.

This proposal provides the center's

- background, mission, vision
- delegation of academic responsibility and administration
- model for operation

On December 5, 2024, the College of Engineering Committee for Academic Affairs approved the college proposal. Please let me know if you require additional information.

Yours sincerely,

Rosie Quinzon-Bonello

Center for Computing Education

Ayanna Howard, Dean
College of Engineering
October 2024

(Contacts for review: David Tomasko.1, Monique Ross.1982)

The College of Engineering proposes to establish the Center for Computing Education (CCE) as a College-level Center. The purpose is to expand educational opportunities for students outside of the computing oriented majors (Computer Science & Engineering, Computer & Information Science, and Data Analytics) with a focus on serving student needs for the learning of coding skills, computational thinking, and applications of artificial intelligence. Because the College plans to delegate authority to CCE to deliver for-credit courses and programs, this short proposal is being submitted to the appropriate academic review committees for review in accordance with Appendix B of the College of Engineering pattern of administration (see Appendix I for relevant policy).

Background

The University, College of Engineering, and Department of Computer Science and Engineering (CSE) continue to be overwhelmed with student applicants interested in the field of Computer Science. Simultaneously, the integration of computing topics into non-engineering and non-computer science disciplines has proliferated creating a need for more and larger computing courses to serve the non-CSE and non-CIS major population. Additionally, there is a general need for computational literacy among university students of all majors and the mathematics pre-requisites for existing CSE courses creates a significant access hurdle. A college level center is proposed to serve primarily these needs.

Mission statement:

> The mission of the Center for Computing Education is to provide accessible and innovative computing education opportunities at scale to students across all majors. Our goal is to equip students with the fundamental principles of computing, artificial intelligence, and data analytics, while fostering inclusive and diverse learning environments. Through collaboration with faculty members, industry partnerships, and the integration of computing skills with various disciplines, we aim to prepare the next generation of professionals to meet the evolving demands of the workforce and society.

Vision statement:

> We envision a future where students from all disciplines have access to high-quality computing education that prepares them to excel in a technology-driven world. By democratizing computing literacy, we strive to produce a new generation of professionals who are adaptable, creative, and equipped to address the challenges of tomorrow's workforce. Our vision is to be a catalyst for positive societal impact through the transformative power of computing education.

The goal will be to develop an operational model for teaching this content at scale. It is expected that, regardless of a student's background, academic discipline, year in school, or math preparation, they should be able to access offerings in CCE and successfully complete them.

Delegation of Academic Responsibility

The College desires to delegate to CCE the authority to develop and deliver for-credit courses in computing and certificates in computing at the undergraduate and graduate level. In these efforts, a close collaboration with the Department of Computer Science and Engineering is expected. Development of courses and programs is subject to concurrence from relevant stakeholders following established academic review practices.

Model for Operation

The operation philosophy of CCE is loosely based on the Center for Life Sciences Education in the College of Arts and Sciences that delivers the Biology degree at OSU. The Center will provide courses and certificates of value for non-CSE and non-CIS majors in the areas of computer science and artificial intelligence. It will establish a service model to provide computing education in program curricula from across the university through discussions with faculty and curriculum leaders in other units within engineering and in other colleges.

Departments and programs approached by CCE will be asked to identify the essential computing skills needed for their students and look for opportunities to fit CCE courses into their major programs without extending time to degree. CCE will stand up courses based on a soft guarantee of filling a determined number of seats (35 initially).

Administration

Initial resources will be provided by the College of Engineering. The CCE is to be led by a Center Director holding a tenure-track appointment. The Director reports to the Dean of the College of Engineering with a dotted-line to the Chair of their tenure initiating unit (TIU). After a start-up phase, the desire is to transition oversight and management to either the Department of Computer Science & Engineering or the Department of Engineering Education.

CCE will be staffed primarily with teaching-track faculty with higher teaching loads than current tenure-track faculty in this area. Resources have been budgeted for a CTP (Clinical/Teaching/Practice) faculty position as well as GTAs and undergraduate graders to be assigned to CCE.

Appendix I – College of Engineering Pattern of Administration

Relevant language from Appendix B:

College Centers will generally not offer for-credit courses or degree programs, but such offering may be allowed in certain cases. If the center proposes to offer for-credit or degree programs, the proposal must also be reviewed by the College Committee on Academic Affairs, and will require approval by both the College faculty and the Council on Academic Affairs (see Faculty Rule 3335-3-36). Prior to review by the College faculty, the College Committee on Academic Affairs shall review and make a recommendation on such courses or degree programs.