Case for AP® Engineering Credit through e4usa

Bringing Engineering Education to the Forefront

For 22 years, we have pursued the goal of developing an AP® Engineering course, creating four unique comprehensive courses bringing engineering education to high school students nationwide. With renewed opportunities and NSF support, Engineering For US All (e4usa) has re-engaged with the College Board® to realize this vision.

In November 2024, e4usa leaders met with the College Board® to propose a partnership. The proposal outlines a collaboration to finalize an AP® Engineering course framework and end-of-course exam, enabling students to earn college credit for an introductory engineering course at their institution.

Why Now? e4usa's Proven Foundation for AP® Engineering

22 **Years of Research and Innovation:** Utilizing the Engineering Design Process Portfolio Scoring Rubric (EDPPSR)/MyDesign Scoring Rubric, we have refined engineering design portfolio assessment to evaluate students' competencies effectively. Combined with our in-class exam, the EDP Portfolio forms the foundation of the proposed AP® Engineering Exam.

6 **Years of Engineering Education:** e4usa has brought engineering to a broader and new group of high school students across the country.

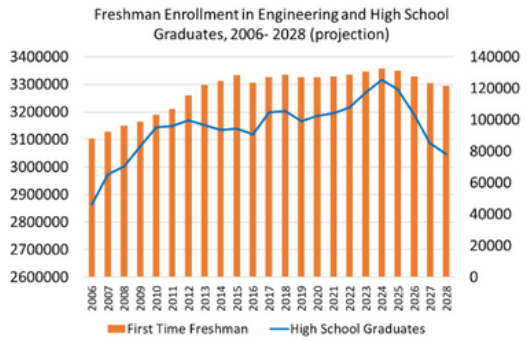
3 **Years of Successful Exam Implementation:** e4usa has experience in creating and offering exams that align with introductory engineering standards.

25 **Colleges and Universities Awarding Credit:** We have already established pathways for students to receive college credit for e4usa courses, demonstrating strong institutional buy-in and proof of concept.

A Natural Progression for Advanced Placement®

- Offer a rigorous, project-based learning model emphasizing engineering literacy and hands-on problem-solving
- Serve as an engineering counterpart to the AP® Computer Science Principles (CSP) course
- Open doors for more students to explore engineering pathways earlier

The National Problem: High School Graduates Declining



Declining high school graduation numbers creates an **enrollment cliff** for engineering. This **enrollment cliff** underscores the urgent need for innovative solutions to address the growing demand for a skilled engineering workforce.

The percentage of high school students enrolling in freshman engineering programs in the U.S. has stagnated at **4%** since 2016 and is projected to remain unchanged through 2028.

CSP students are more than **3x** as likely to major in computer science than similar students who did not take CSP and differences are even larger for female and Hispanic students.*

16.9% CSP students who majored in CS vs. **5.2%** Non-CSP students who majored in CS

**AP® Computer Science Principles and the STEM and Computer Science Pipelines, College Board®, December 2020*

Next Steps: Building University Partnerships for In-Major Credit

Provide Students a Clear Pathway into Engineering Disciplines Early:

Early exposure to engineering increases student interest, confidence, and preparedness, addressing critical challenges in enrollment, retention, and graduation rates for engineering majors.

Strengthen First-Year Engineering Programs:

Awarding credit for a rigorous AP® Engineering course reduces the financial burden on first-year programs while aligning with broader institutional goals to streamline pathways to degree completion and maintain ABET alignment.

Support National STEM Workforce Needs:

Expanding opportunities for high school students to pursue engineering early ensures a steady undergraduate pipeline and increases the supply of skilled employees ready to meet and exceed industry demands.

Join Us!

With a proven model, backed by 22 years of research, 6 years of national implementation, and the success of 25 colleges and universities already awarding e4usa credit, we invite universities to partner with us to:

- Support the AP® Engineering Initiative
- Award In-Major Advanced Placement® Credit for Intro to Engineering courses through e4usa Legacy and e4usa+Design Courses
- Collaborate in Strengthening Engineering Education Pathways Nationwide

Please complete the following form: https://tinyurl.com/AP-Engineering-Initiative

For more information, reach out to us at info@e4usa.org.

engineering 4 us all