

Carnegie Mellon University

College of Engineering

March 23, 2015

President of the United States
The White House
1600 Pennsylvania Avenue NW
Washington, DC 20500

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Dear Mr. President,

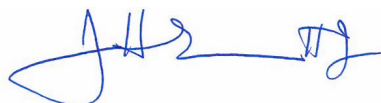
Carnegie Mellon University College of Engineering faculty instituted changes to the general education requirements for all undergraduate engineers graduating from May, 2016 and beyond. The goal of these changes was to provide a broader general education to students in sync with the grand challenges. As a result of these changes, 25% of the general education coursework requirements are now in writing and expression, which is twice the previous requirement. This will provide students with additional exposure to communication in a formal sense, relevant to their profession. Courses are now also required in global and cultural studies, social and decision science and innovation and internationalization. For the innovation and internationalization requirement, students may choose from topics that include, for example, public policy relevant to engineering practice, entrepreneurship, global economics and economics and technology.

Sophomore and junior engineering students are also enrolled in Experiential Learning courses for three semesters. Each semester, the student must either attend two lectures or activities (from a list of approved campus-wide) and write a reflective piece about each or hold a leadership position in a student organization. The goal of these activities is to give the students the chance to explore new opportunities that encourage their growth professionally and personally.

An important part of engineering education for Carnegie Mellon students is the opportunity to conduct project work in two Introduction to Engineering courses required during the first year of study. Introductory courses are offered in the following engineering disciplines: Chemical, Civil and Environmental, Mechanical, Electrical and Computer, Biomedical, Materials Science and Public Policy. The courses are taught by faculty in each discipline. Students also experience design and project work in a capstone course required for each student, typically taken during the senior year and offered by each of the previously listed engineering programs. Our students are highly engaged in independent research projects as well. More than 60% of our undergraduate engineers participate in research for at least one semester, and many do so for an extended time. Many students also apply for Undergraduate Research Grants: (SURG, for a semester) and (SURF, summer undergraduate research fellowship) where they must prepare a research proposal which is vetted by a university-wide group of faculty to determine if it will be funded. Some students are eligible for Honors Research as well, which requires a two semester commitment to research during the senior year.

A future goal for our college is to determine requirements for the NAE Grand Challenge Scholars Program at Carnegie Mellon. Our faculty are currently working to define this program.

Sincerely,

A handwritten signature in blue ink, appearing to read 'J. H. Garrett, Jr.', with a stylized flourish at the end.

James H. Garrett, Jr., P.E.
Dean and Thomas Lord Professor