

What Students Say are the Top Engineering Challenges of the Future

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What are the most important challenges facing our nation or world in which engineers can provide a solution? This question was asked to hundreds of engineering students over a period of the last five years, usually on the first day of classes. To ensure the authenticity and creativity of the essays, students were allowed time to do the assignment in class. With a growing collection of essays, it became obvious that the topics generally fell into one of ten main themes, though most of these main themes have some connection with the others.

On the basis of the number of responses, the main themes were assigned a rank of one through ten. The top three themes throughout the five years of the survey were energy, environment, and infrastructure. Students frequently expounded on the need to find alternative energy sources that are practical, clean, abundant, renewable, and safe. We must, say the students, protect our natural resources and curb climate change, and our nation's aging infrastructure needs vast improvements. The next seven themes, which included quality of life, vehicles, leadership and ethics, national security, medicine, space, and education and research, changed rank periodically. In any case, students clearly recognized that every engineering challenge will demand an interdisciplinary effort.

On the basis of this collection of essays, how do the students' priorities agree with our national priorities at the moment? How do the students' priorities reflect what the media says? Do the students' responses accurately portray the best job opportunities of the future? The results of this ongoing survey may be useful to engineering students as they chose specific majors and, eventually, embark on various fields of work.