

Discovering the Human Dimension of Engineering as an Undergraduate
by [Krista Ricupero](#)

Engineers need to recognize the human dimension of engineering – where our work intersects with the public and the environment. As a graduate student at the University of Maine's Department of Civil and Environmental Engineering, my research centers on the types of hydrology data needed by the state government in order to ensure equitable water allocation along Maine's Penobscot River. It is precisely this combination of engineering, modeling, and policy that makes me excited to be an engineer.

Frequently, my undergraduate engineering coursework seemed lacking in the human dimension, even, for instance, a class in environmental chemistry, which is obviously important because of the effects of water pollution on humans and on Earth. Perhaps some teachers find it difficult to include the bigger picture in already full curricula. Others may simply have the opinion that issues outside of learning to design competently are peripheral to what makes a successful engineer.

My understanding, however, has always been that good engineering is central to a society's health, and that the best engineering serves those whose voices may not otherwise be heard. In graduate school and in the professional world, I am starting to see that my perspective on this issue is essential.

I would like to offer some words of encouragement to others who may share the feelings I had while completing my undergraduate work.

There are high school students and undergraduates who will feel discouraged at the seeming disconnect between technically-focused engineering studies and society. Know that you are not alone and that your pursuit of an engineering degree is worth the work you are putting into it. The professional world and society will place a high value on your socially conscious engineering, because your work will improve lives.

In the meantime, take classes in policy, law, sociology, and minorities studies whenever you can fit them in. Get a minor in one of these areas if you can. Go to engineering conferences and plan on going to graduate school. All of these things will help keep you sane in what may otherwise seem a sea of problem sets, Excel sheets, and differential equations. Good luck!

About the Author: Krista Ricupero is working towards a Master's of Science degree in Civil and Environmental Engineering at the University of Maine, Orono. She was also a participant in the 1999 National Engineers Week Future City Competition as an 8th-grader at Powder Mill Middle School in Southwick, Massachusetts.