

Why Engineering at Hofstra?

Address to H.S. Seniors

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We are experiencing something no one alive has experienced. It brings to mind the greatest generation that saved the world from tyranny in WW II. The pandemic - health - is not the only challenge the world faces. Climate, energy, poverty, water, shelter, and education are all urgent societal issues. The world desperately needs the next greatest generation.

On May 25, 1961, President John F. Kennedy stood before Congress and proposed that the U.S. should commit itself to achieving the goal, before the decade is out, of landing a man on the Moon and returning him safely to the Earth. On September 12, 1962, on a very warm day at Rice University Stadium, President Kennedy said "We choose to go to the Moon in this decade and do the other things, not because they are easy, but because they are hard." On July 20, 1969, eight years and two months after JFK's address to Congress, Neil Armstrong set foot on the lunar surface. The average age of the systems engineers cheering on Apollo 11 from the Houston control room that day was 26, which means that their average age when President Kennedy announced the challenge was 18 - your age!

Who will solve the world's urgent problems? Who is the next greatest generation? You are! Accept the challenge!

The population of the world is 7.58 billion people and every single life is as valuable as any other life. We are all equal, all the same. There is an innate desire in every person to make a difference, to make the world a better place, to help people in need. That takes passion!

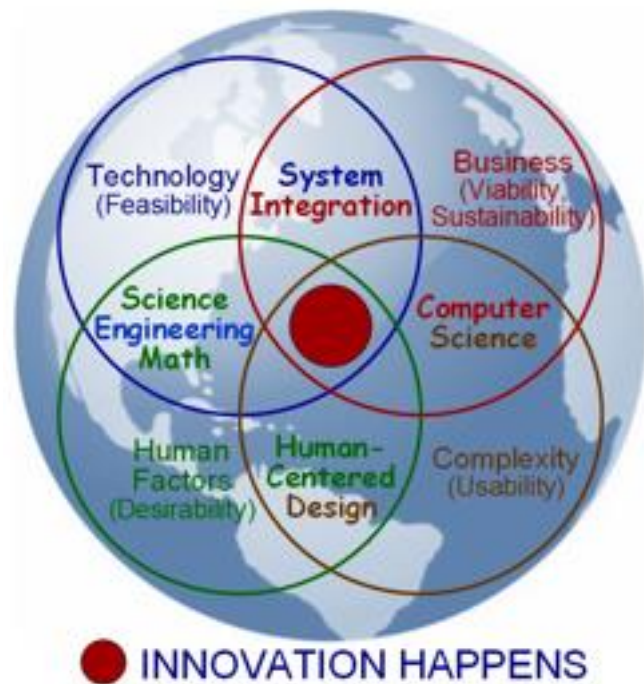
Why are you attending college? Is it to take courses in some discipline, receive a diploma, and then get a good paying job, or is it to discover your passion - take ownership of that passion, become that passion - and commit to making a difference and changing the world. In the history of the world, no one has ever washed a rented car. Take ownership of what you want to become!

I have been an engineering educator for 40 years - at Kings Point (USMMA), RPI, Marquette, and now Hofstra. I have never been prouder of a faculty as I am at Hofstra. Our sole mission - not research, not raising money, not publishing papers, not graduating M.S. and Ph.D. students, not delegating tasks to teaching assistants - is to mentor each student each and every day over four years to discover their passion and transform each of them into an engineer who will change the world. 90% of the engineering in the world today is done for the richest 10% of the world. Become the engineer at Hofstra the other 90% of the world needs!

A young person becomes an engineer by experiencing who an engineer is every day over four years at Hofstra. Engineers are the ultimate problem solvers with integrity. Integrity is

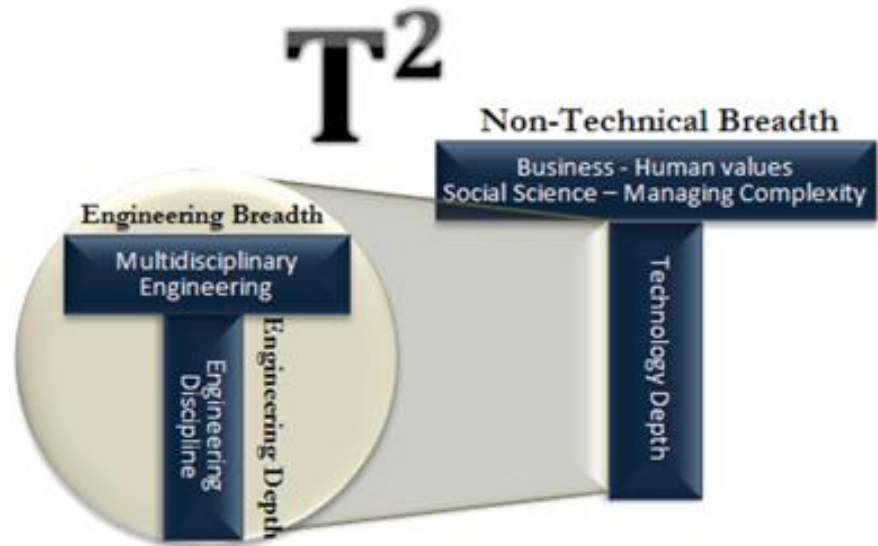
doing the right thing all the time, even when no one is watching. If you have integrity nothing else matters. If you don't have integrity, nothing else matters. Engineers solve problems without regard for egos, ideology, religion, nationality, and politics, always focusing on facts and the problem. Becoming an engineer is an unselfish calling. I worked for a period of time as a hospice volunteer. When I was training to do that, I asked about the demeanor a hospice volunteer should have. The answer I heard is now a sign in my office - It's Not About Me - a perfect description of who an engineer aspires to be.

The problems the world faces are multidisciplinary, complex, and ever changing. Innovative solutions require a new way of thinking, communicating, and doing; they must be human-centered, technologically feasible, commercially viable, usable from a complexity view, and sustainable in a global sense. Innovation is local. You don't import it. You don't export it. You create it!



This is why at Hofstra we mentor you to become a T² Engineer the 21st-century world demands. A T² Engineer is one who

has, in the first T, engineering-discipline-specific depth, as well as multidisciplinary-engineering breadth, but also, in the second T,



technological depth with non-technical breadth, specifically human-centered design expertise capable of managing complexity.

A young person does not become a T² engineer by simply taking courses, getting grades, and checking off boxes on the road to graduation. A young person becomes a T² engineer by immersion over four years with a dedicated mentor who disdains silos and comfort zones as the greatest impediments to effective communication and innovation.

How do we at Hofstra transform you into the T² multidisciplinary engineer the world urgently needs? It is not by delivering textbook courses, with textbook problems, using 30-year-old textbooks. It is by knowing, through continuous real-world interaction, the real-world problems engineers are solving, and the processes and tools engineers are using to solve those problems. Our engineers graduate ready to step up and hit the ground running, since we evaluate our four-year

programs continuously. Starting from the freshman year, young engineers are on a path, a continuously-updated path, to make a contribution the first day after graduation. Just what the world needs!

In addition to knowing what engineers need to know, Hofstra professors know how important integration is in our curricula. There is no such thing as a stand-alone course at Hofstra. Each course is viewed as an essential ingredient to becoming an engineer. Mathematics and physics are the foundations of engineering, but physical understanding is paramount, as today, before an engineer cuts a piece of metal or solders a wire, he/she creates a virtual solution to a problem, a virtual computer-simulation prototype, complete with sensors, actuators, electronics, mechanisms, and computer real-time control. When it works virtually, the engineer builds the actual prototype and it will work the first time! That is what innovation-leading companies in the world do today and that is what a 21st-century engineering student learns at Hofstra. Students do this several times during their four years at Hofstra, so that when they graduate and are asked to solve a problem for real, their confident response is "I have done this successfully many times before."

Engineering education is my passion. It is the passion of every engineering professor at Hofstra. Passion is infectious and, in the end, it is all that matters. Become a human being with passion to make a difference. Become An Engineer with Passion at Hofstra.