

Questions and Answers: Smith Engineering and the Future of Engineering Education

What is this new direction all about? Why does engineering education have to change?

The nature of the world's problems is evolving. The problems are becoming more complex and more urgent, and the evolution of engineering education has not kept pace.

Now it is time to truly re-imagine engineering education at scale. To solve complex, multi-disciplinary, societal challenges, engineers and future leaders need to develop skills to address complex, multidisciplinary, global challenges with deep technical knowledge and awareness of societal factors in their educational foundation.

Queen's envisions a new model of engineering education to achieve this, one that is technically rigorous, experientially focused, socially conscious and creatively inspired.

Wasn't Queen's Engineering already an excellent program?

This is movement from good to even better -- while we are a top program for the problems of today, we can see that the world's challenges are growing ever more complex. We're evolving to meet those new needs, but without forgetting that we are building on over 130 years of excellence and leadership in engineering education.

Why did we rename the Faculty?

The initiative to re-imagine engineering education will change the direction of the Faculty in a way that will have powerful and positive lasting impacts to society. The size of the donation reflects the incredible support of this vision and the scale

of the opportunity our Faculty has before us. This level of support and the impact that this change will have is deserving of a named Faculty.

Does the donor now have a say in what the Faculty does?

We're fortunate to have a donor who believes in the Dean and our academic team's vision for changing engineering education. We've shared details of the plan, and what we intend to do, which he endorses through this donation – but he is not dictating what we do, or how we do it. Stephen Smith's trust in us is what led to this gift.

Does this solve our budget issues? Is this a "bailout" for our deficit?

This is new funding for the Faculty specifically to support the transformation of engineering education, and will be disbursed over a number of years. The money will benefit the entire Faculty by creating new resources, tools and ideas specifically for the goals of re-imagining engineering education – but is not operational funding for our current deficit.

Will this result in substantially more work for staff and faculty?

Our phased approach over time means that we have small changes in the immediate future as our academic team researches and plans. Any changes will be part of a consultative process with our departments, and doing things differently will not necessarily mean we are doing more. Any growth will be appropriately resourced.

How will we find space for these new experiential and competency-based components?

We recognize that space on campus is already tight and we are actively seeking long term solutions. Part of our exploration phase is how to manage our space needs, while finding new ways to optimize existing space.

Does this focus on education mean research is being de-emphasized?

Smith Engineering will maintain research as a top priority for our Faculty and part of our plan will involve hiring more faculty, and continuing to increase the

intensity and impact of our research with an growing focus on finding solutions to the world's grand challenges.

We are excited by the opportunities this plan presents to more closely make research part of the undergraduate experience, and to allow our researchers more opportunities and access to bring their world-leading work into the classroom. We want to excite and enthuse our students with our discoveries and include inquiry as one of the experiential learning opportunities core to our programs.

Will professors have to change the way they teach?

Smith Engineering is transforming engineering education to prepare graduates to address the world's greatest challenges and to make both local and global impact. Our professors will serve as the foundation of this new approach to engineering education.

Today's extraordinary donation will enable Queen's to create new chairs and professorships; help attract leading researchers and educators from around the world; attract new world-class faculty members whose teaching and research are designed for impact; and significantly increase resources in the classroom in support of our students. This opportunity will provide the necessary resources for program development, innovative teaching and research with competitive student/faculty ratios for an optimal learning environment.

As they have been for generations, technical skills and foundational knowledge will remain critical – as will a commitment to building on the Faculty's well-earned reputation as one of Canada's foremost engineering programs.

Will students get a different education than what they expected when they chose Queen's?

Smith Engineering is still mapping out a plan to implement the changes we envision. Some elements that contribute to these ideas – like our Engineering Career Accelerator Program (ECAP), and the integration of professional development into core courses – are already moving from pilots to real-world implementation, but for the most part, future changes will happen only after lengthy consultation and planning.

Will this change accreditation, P.Eng. qualifications, or how students get an iron ring?

Your program will be accredited and the Iron Ring tradition lives on, symbolizing the pride which engineers have in their profession and reminding them of their humility.

Will undergraduate degrees change?

No - students will still graduate with a BSc or graduate engineering degree from Queen's University.