

NUS to fire up engineers with new curriculum

Revamps in teaching of subject, more hands-on work and specialisation paths aim to keep more in the profession

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About 1,500 engineers graduate from the National University of Singapore (NUS) a year, but the estimate is that only half of them stay in the profession. The others go into finance, marketing and sales.

To arrest this leakage, the university is revamping its curriculum and

teaching to get undergraduates excited about engineering and the diverse career paths engineers can pursue – from research and development to entrepreneurship.

Currently, first-year engineering students take modules in mathematics and physics to build a strong foundation.

Only in the second year do they get to see how mathematics and the sciences are applied in engineering.

From this year, electrical and me-

chanical engineering students will take two modules on engineering principles and practice in the first year, and be shown the engineering behind the building of drones.

They will take apart drones to look at how they are built and then attempt to build their own.

NUS engineering dean Chua Kee Chaing said the university hopes to get students excited about the profession from the start.

“Right now, we focus on giving them a strong foundation in maths and physics in the first year.

“So for many students, it is a continuation of their junior college years. It all seems very theoretical.

“But with the new hands-on modules, we hope they will get a taste of what it is that engineers do from the word go – it is the application of science to solve problems.”

He said besides training students for chosen fields in engineering, from mechanical to environmental, NUS will open up two specialisation tracks for students – in research and development, and in the design and innovation aspects of engineering.

The design and innovation track is suited for students keen on developing new ideas and products or who are interested in exploring entrepreneurship opportunities in engineering.

This multi-disciplinary pathway aims to help them acquire the knowledge, skills and tools to design user-oriented products.

Students will be able to go on working stints with start-ups. Professor Chua expects 30 per cent of each cohort to pick this pathway.

The research track is suitable for those who hope to pursue a career in research and development in industry or a research institute.

Students on this pathway will have opportunities to take postgraduate modules and acquire research experience through internships in research laboratories and institutes.

They are expected to pursue a master’s or PhD in engineering after graduation. NUS Engineering expects 10 per cent of each cohort to opt for this pathway.

Incoming engineering students welcomed the specialisations.

Ms Tammy Tsang, 19, said: “My physics tutor in secondary school kindled my interest in alternative forms of energy and it will be great if I can take up courses that will help me design and innovate in this field.”

Former River Valley High student Yeo Jin Yan, 19, has done research stints in various laboratories and will be studying electrical engineering.

She said: “Research and development excites me because it is the heart of engineering – finding solutions to real-life problems.”

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