SCHOLASTIC VIEWPOINT

ENGINEERING THE FUTURE

By V.S. Rao, President, NIIT University

Engineering will lead the careersof the future. Prof. V S Rao explains why and how to gear up for it Gear up! The Robots are coming!

On how many occasions have you heard of the 'man vs machine' debate lately and that the robots will take up all our jobs soon? Sure enough times to scare young minds who haven't even stepped into the professional world. While it's true that a lot of the jobs that exist today will be automated by 2030 (a report by McKinsey Global says as many as 800 million jobs), I'd say, you should be excited about the future, not scared of it.If robots are going to take charge anyway, why fret? We may as well learn to be their masters. In fact you must thank God (or science) that the machines will take away all those odd, boring jobs which no one wants to do in the first place. This means that there will be more time on hand to explore some interesting, creative and meaningful jobs.However, invariably, all of them will be linked to technology.

Think of it this way:today, our whole life is inundated with technology but, none of these tools and gadgets even existed 15 years ago.That's how rapidly things are changing. Every product and service - in banking, finance, health and infrastructure – has been developed, adapted, and reshaped with technology to cater to our ever-increasing demands.

So what will be the real careers over the next decades? For starters, as the fourth industrial revolution unfolds, there will be a massive demand for science and technology graduates worldwide. They will experience the lowest unemployment rates. A degree in engineering will open up a variety of career paths toward high-paying, in-demand jobs - across the board.

Streams of opportunity

Let's take a look at engineering careers for the future. With the rise of the Internet of Things, mechanical engineering looks like a lucrative field. Biomedical engineers will have a robust career outlook into the 2020s, trying to meet the needs of ageing populations around the world with advanced medical technologies. More electrical engineers will be required to design and build robust communications systems. We'd be seeing a steep demand for environmental engineers with expertise in water conversation and green energy systems. Computational engineers will provide solutions in various fields using statistical modeling and algorithms derived from large data sets. The software sector is rapidly evolving and engineering graduates with mobile expertise and cyber-security skills are doing swell. As populations continue to grow, so will our infrastructure needs – that's why civil engineering will remain a critical field.

V.S. Rao

In recent years, Virtual and augmented reality engineering has picked pace in the field of gaming and advertising. In fact, Research firm Mar-

kets and Markets has estimated that the VR market alone could be worth $33.9 billion by 2022. Also, Robotics engineers are set to be in significant demand with experts required in robot design, application and behavior control and maintenance.

Prepare for the future

The one streak common in all of the current and future jobs involve technology, knowledge, creation and innovation. Therefore the accountability of educating the next-gen would lie in the hands of institutions that are foresighted and whose training is industry-linked, technology-based, research-driven and seamless. It is now more important than before to encourage students to explore and connect with the multiple dimensions of today's technology and business environment. A 4-year B Tech programme must be blended with Humanities and Social Sciences, laboratories, R&D projects, Industry Practice, and other co-curricular components. Only then will we develop holistic and responsible leaders with life-long learning capability who are trained to operate in tomorrow's complex technology-oriented business environment.

Besides gaining proficiency in the domain area, students must look to acquire interdisciplinary knowledge and develop an analytical ability with a strong research bent of mind. The curriculum must build seamlessness with the world of work through Industry-work or Industry-oriented research.

Let's get real

For success in the world of work, one needs more than knowledge domain. The non-academic qualities possessed by an individual - such as collaboration and team work, ability to withstand the time pressure without loss of focus, planning and organizing abilities, and leadership - must be developed through co-curricular activities undertaken during college. Think arts, photography, robotics, drama and clubs at the university. These must be linked to survival in the professional world and academic credits must be given to these activity-based courses. Also, universities must provide students with an opportunity to gain experience working in interdisciplinary teams on real assignments.

Based on these principals and methods, the NIIT University's (NU) B Tech programme offers courses in Computer Science and Engineering, Electronics and Communication Engineering (ECE) and Biotechnology (BT). A Minor programme in areas of study other than the discipline runs in parallel to the degree programmeallowing students to acquire expertise in complementary disciplines thus expanding their horizons and adding value in the industry.

Chart your career

Students must know that their skills, experiences, and capabilities are valuable assets that must be used to choose the path toward their career goals. With many exciting Engineering roles available, you can find a course that spurs your interests and intellect. With the right institute, you can gain a competitive edge to drive your career forward. And remember, in the future, anything is possible because the jobs of the future will actually be more interesting than those of the past.