**ENGINEERING PROFESSION**

Engineering is a science of applying knowledge of properties of matter and natural sources of the energy to practical problems of industry. It deals with different things: design and manufacture of tools and machines, cars and trains, equipment for communication and computing, generation and distribution of electricity. X-ray machines and life-support systems, roads and bridges, building of houses and all the services we need in our homes, at work and in many other places. This occupation is very ancient. The first toolmaker who managed to make wheel, the craftsmen who built Egyptian pyramids were the forerunners of modern engineers. But until the nineteenth century all those generally were craftsmen or project organisers, who learned their skills through apprenticeship, or trial and error. As a result of the Industrial Revolution and great increase in scientific knowledge, engineering has grown into a profession of higher level. A profession is one of a limited number of occupations or vocations involving special learning and carrying a certain social prestige.

Nowadays such occupations like law, medicine or engineering require specialised advanced education. Many people spend years studying at universities to gain these professions. One of such universities which offers an extensive range of opportunities for those who want to gain the engineering profession is "Lviv Polytechnic" National University. It is a modem educational, scientific, technical and cultural centre in Western Ukraine which is entering the European and world scene of scientific integration. Curriculum programs at University are realised at 5 Institutes training students for their professional careers.

The programs have been based on experience of the best universities and institutes of technology of the world. According to them, not only Specialists but Bachelors and Masters are trained here. A Bachelor’s degree requires four years, a Specialist’s degree five years and Master’s degree requires a further year of studying.

The University students undergo a continual process of education, and study a lot of different subjects. In the first two years mathematics, physics, chemistry, history, foreign languages and other general subjects are emphasised throughout the curriculum. Mathematics is very important not only for the future engineers but also for economists, managers, social workers, so it is paid much attention to. Because computers and automation have already changed the way we work and what we do. and are now changing the world in which we work, and because there is hardly a branch of engineering which can do without computers, computer programming is now included in almost all engineering curricula. As the systems that engineers produce must be workable not only from a technical but also from an economic and social points of view, a current trend is to require students to take courses in social sciences, economics and languages. Engineers must accommodate their ideas to the financial realities of a project, they must have a good command of language to be able to prepare reports or to sum up their findings for scientific publications.

Those who are doing scientific research must be able to read foreign publications in their subject areas. The aim of the last two years of studying is to equip the students with skills and knowledge within their field of specialisation. For example, the curricula for students of the Economics and Management Institute include the following disciplines: marketing, personnel management, human resource management, business administration and others; students of the Institute of Theoretical Mechanics and Transport study theoretical mechanics, strength of materials, computer aided design, etc.

All University specialised courses and research programmes are designed to provide the highest quality, up-to-date training and experience possible. Employment opportunities exist in different spheres. Professional engineers, trained at the University may work as design engineers, creating new products, products installation engineers installing the new equipment, or production engineers ensuring the efficient production process. Some engineers may also work as sale engineers, and those concerned with electrical grids, power stations, automobiles and other machines may work as maintenance engineers. Graduates of the Institute of Economics and Management find employment in management, and specialists in architecture and arts can work in architectural or construction companies.

In other words, specialists in engineering may work almost in all spheres of industry and social life, and their profession is not only very old, but it is one of the up-to-date occupations as well.