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Editorial

Teaching Engineering

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The presence of Engineering in the life of humanity dates from the most remote ages: The manufacturers of the Egyptian, Aztec, Mayan, Inca pyramids, and their already well-known means of communication; the makers of the Chinese wall; the builders of the great cathedrals throughout the world; all of them had extensive knowledge of Engineering and Astronomy. These two sciences have been developed hand in hand in the long history of human beings.

In the modern times, Military Engineering appeared first, destined to the construction of communication roads and bridges to overcome the rivers; Civil Engineering then flourished with great advances in this magnificent science-art.

The different branches of modern Engineering: Mining, Chemical, Electrical, Mechanical, Industrial, Administrative, Petroleum, Systems, Forestry, and the newest Aeronautics, Nanotechnology, Design, among others, were appearing as time went by to meet the new needs of modern man.

But Engineering is still one, with multiple specialties. As it is not conceivable to say, for instance, School of Oncological Medicine, Faculty of Orthopedic Medicine, Faculty of Ophthalmological Medicine, and others; these are specialties of a science: Medicine. Or it is not common occurrence to say Faculty of Criminal Law, School of Civil Law, and so on; it is the science of law with its many specialties. And so we could continue talking about the other areas of human knowledge.

Engineering is one, and I want to concentrate my comments in its teaching. The training of future engineers must be integral; you cannot conceive its teaching by only giving strength to the knowledge of a trade. It is important to keep in mind that its future professional performance will be among human beings, for which humanistic training must have a preponderance in its curriculum.

Basic Science is very important in the creation of an engineering mentality, but it cannot become a tool to systematically reduce groups of new students. The neo-student must have presence when solving problems of the social environment where they develop

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professionally, therefore, a semester of business practice or compulsory social service is essential in the curriculum.

Professional ethics should not be considered as another subject in the curriculum. The university must bear in mind that the youth group that is forming is malleable and, therefore, should be concerned with having a teaching body that represents true ethical values. It is not enough to have a little box in the curriculum that is called professional ethics. Ethics should not be taught that way. It is the permanent example of teachers what inspires the true spirit of professional ethics. And this imprint marked in the depths of the neo-engineer's being will accompany his professional performance, an accompaniment so indispensable today when values have been lost in professional practice.

At present, engineering students have advanced technological developments, which allows them a better response to the problems that the profession demands.

Practical research must have a presence in the professional training of new engineers. The former role of transmitters of knowledge of teachers is thus transformed into a generator of knowledge.

The purpose of the modern university is redefined in the broad, integral and democratizing formation of young people and in the construction of an important potential to respond to the problems of society. It is not enough to train someone in the secrets of a trade. It is expected that the graduate is also an ethical and socially responsible person.