



145

The Role of Engineering Educational Laboratories at a Thesis Level

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The role of laboratories both in higher vocational - technical school and in undergraduate engineering education is of fundamental importance. For years there has been a one-dimensional direction in curriculum of technological and pedagogical educational institutes where the main objective was to develop technical skills directly applicable to production. Many courses try to sense the demands of market and follow the progress of technology. In the recent years, technological educational institutes managed to turn the gaze also towards basic research. This is due mainly to the increased op-

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portunities for foundations by National and European programmes for research. Through these financial supports the existence laboratories equipment can be upgraded and in some cases totally replaced. At the same time, through these updated laboratories it becomes possible for the new ambitious researchers not only to undertake and complete innovative ideas but also to put forward and organize new updated courses and new applied specializations in a high master's level.

The need for organization of new specialized programs that would be suited to the requirements of modern objects has appeared and then institutions that wish to become leaders to evolutions have to face major difficulties.

Then, a critical enquiry arises: which will be the role of an educational engineering laboratory during the final stage of completion of the postgraduate studies of an already graduated student with his/her thesis. In the example that will be given here, the experience of our department will be presented. The design and growth of a formally educational engineering laboratory in order to meet the needs of postgraduate studies and research of students will be explained.

The student then has in availability a large amount of devices and parameters that he/she can choose to engage with, during the planning of his/her research study. With the help and the guidance of his/her advisor a student can schedule by him/herself the management of his/her project.

As a result of the abovementioned procedure the role of a formally educational laboratory turns to a research one, and then transforms again to an educational tool where each student can obtain a total knowledge not only of the devices that he/she has operated him/herself, but mainly by understanding the majority of the concepts that he/she has dealt with. ■

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