

MATCHING CURRICULA TO INDUSTRY NEEDS IN MECHANICAL ENGINEERING

Mr. Duminda Thilakawardena

Thirty years back the role of mechanical engineers was purely technical. Fast growing nature of industry moves their role to areas such as management, marketing and information technology. The state-of-the-art technology replaced most of the mechanical devices by simple electronic gadgets and fast computers created the opportunity to apply their computing power to solve a wide range of engineering problems previously proved to be inefficient and time consuming.

A recent report backed by the European Commission claims, in the next decade, the continent would face one million unfilled vacancies in engineering industries in the area of information technology. As an early solution to this, the UK government has now changed the immigration rules to recruit engineers with IT background, especially from Asian continent to support the growing demand in these areas. This situation is not only confined in to the UK; it is the same everywhere in Europe and the USA.

In the UK universities, more than 60% of the engineering postgraduates spend their first year, learning object oriented designing and software programming languages such as VB and C++ for their research work. Collaboration between industries and Universities is more common in the higher education sector and bulk of the research activities for final year and postgraduate students are funded and closely supervised by the overgrowing industry specialists.

When dealing with syllabus revisions and assessments, close relationships with the industry sector must be encouraged. In order to provide a fast-track solution to the looming shortages and to bridge the technological gap, most of the engineering universities and polytechnic institutions have included extra modules on electronics, CAD/CAM software applications and Information technology, at BSc and MSc levels. Moreover, the importance of presentation and management skills in the areas of technical writing and research projects are recognised by the curriculum to create better opportunities in career prospective. The partnership with industries are further strengthen by organising frequent career recruitment sessions to reap the most eligible graduates for their firms and to introduce the state-of-the-art developments in on going research activities. This is a blessing in disguise for the eligible students to explore their future prospects.

The proposed curriculum for the mechanical stream (UoM) seems to be given enough coverage for management through industrial economics and, electronics with introduction of mechatronic systems respectively. However, less focus is drawn in teaching scientific programming and relevant application software languages (CAD/CAM) to support wider

range of skills expected by rapidly changing industry. Introducing object-oriented languages and programming skills will certainly be beneficial to those who selected to do higher education in the UK and abroad plus reduce the gap between established computer science courses. Teaching of electronics should be commenced at a lower level to give wider coverage of the subject. Introducing industry based CAD/CAM final year projects will allow students to apply their theoretical knowledge and build up confidence with both national and international industries. Addition of these features to the new curriculum will cross the boundaries between disciplines and industries in local and abroad and interaction between education establishments and industrial sector brings more exciting future for young engineers.

Mr. Duminda Thilakawardena B.Sc. Eng.(Hons) (Moratuwa) specialised in Mechanical Engineering. Having worked in industry for over 12 years, presently he is reading for his Ph. D. in Manufacturing Systems Engineering in the Mechatronic Systems and Robotics Research Group of the School of Engineering University of Surrey, UK.

