The 37th JUACEP Seminar

第 37 回 名古屋大学日米協働教育プログラムセミナー

Date: Oct. 25 (Tue), 2016 13:00-

Venue: Lecture Room 231, Eng.Bldg-2

Engineering Education: The Next Frontiers

Prof. Shaker A. Meguid

Mechanics and Aerospace Design Laboratory
University of Toronto, Canada

Mechanical Engineering is experiencing a tremendous and rapid change in content, approach and programme specialisations. As Engineering Educators, we are faced with numerous challenges. The curricula are updated regularly with new specialisations, programmes and topics being introduced and others being truncated or eliminated all together not only to attract the most talented to the profession but also to create the engineer of the future. Gone are the days when professors used 10 years old notes/slides/transparencies with the same typographical errors and analytical mistakes in a structured lecture series. The pressures imposed upon us are the result of not only time commitment to our research endeavours, but also the demands made by our pay masters, society and the current student population. They expect us to be more involved and that the subject matter to be more engaging, stimulating and more importantly relevant to the job market. Issues such as lateral thinking, open-ended problems, integrated approach to engineering, leadership qualities, and awareness of market economy and appreciation of the duties to society have all been brought to the forefront and are being implemented in different engineering schools. It used to be that students seeking a Mechanical Engineering degree used that degree to look for a job of their liking. As a result of a highly competitive environment, the situation has changed dramatically. The driving force now is the market place and what companies need and can afford not the desire of our prospective graduates. Hence, the introduction of options such as Mechatronics, Robotics, Systems Engineering, Environmental Engineering, Bioengineering, Micromachines, among others, to cater to these students/companies.

In view of his active participation and involvement in course renewal/development in many universities, the author has recently embarked on major changes to the delivery of his engineering subjects. In this presentation, the author will focus on recent developments in the electronic delivery of his lectures and his desire to significantly enhance and dynamically update the undergraduate/postgraduate teaching, learning and assimilation environments in any engineering school. The use of this recent technology not only enabled the introduction of complementary team-based real world case studies, but also allowed the introduction of important legal and ethical issues surrounding tort, contract law and liability in engineering practice. In his presentation, the author will also demonstrate that the open-ended nature of the selected case studies helps the students to develop the appropriate skills in communication, time management, conflict resolution, literature search, and the ability to delegate responsibilities, discriminate and prioritise the different tasks in a real engineering environment. More importantly, it provides a sense of realism into the entire learning experience.

Inquiry: JUACEP Office 日米協働教育プログラム (Ext. 2799)

JUACEP: Japan-US Advanced Collaborative Education Program, Graduate School of Engineering