

## **Biomedical engineering education for improved human health**

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### **Abstract**

New diagnostic and therapeutic technologies, screening possibilities and pharmaceuticals continuously reshape the health care sector. Biomedical engineers, who are the driving force in innovation and development, are playing an extremely critical role in this scene. The growing demand for advanced services results also in growing health costs and most countries face a challenge in terms of budgets, but also possible shortages in employment and skills. Given this dynamic situation, biomedical engineers today should be prepared to meet existing or forecasted needs by means of knowledge, skills and attitudes that address the demands of the work environment in the broader health care sector all over the world. This involves academia, medical industry, hospital facilities, as well as administration and, in turn, it imposes new challenges for advanced education in the field. However apart from biomedical engineers, all health related professionals, involved in the use of medical technology, should nowadays receive biomedical engineering education in order to be able to take full advancement of this progress for the benefit of the patient. Especially medical doctors and nurses should be educated and trained in the potential of new technologies, their limitations and the safety issues associated in their use. Lack of appropriate knowledge and training can lead to decreased efficiency of operation, false diagnosis, wrong treatment, adverse incidents for the health of the patient, the user or other persons and deterioration of the devices themselves. Safety has been recognised as one of the most critical factor in health care delivery today. WHO has recently put patient safety as a priority and the proper use of technology is directly related to this issue. It is therefore very important to incorporate basic biomedical engineering courses in the curricula of medical doctors and nursing education that will greatly improved efficacy, efficiency and safety in the use of modern medical technology.