**About Biomedical Engineering Program**

The BME program is a multidisciplinary program. It combines courses from the electrical, electronics, and mechanical engineering programs in addition to basic courses from the medical program. It is a 164-credit hour program in which outstanding students may complete their requirements in about 4 years. The aim of the BME program is to provide the market with graduate engineers equipped with both the theoretical and practical skills that make them capable of competing nationally and regionally in the job market.

The BME program utilizes modernly equipped labs in electrical, electronics, mechanical, and computer programs to provide the students with the required laboratory skills needed in their engineering profession. To ensure the hands-on skills, all BME students are required to complete 3 sessions of field training (each 80 hrs.) starting from the summer after 2nd level in fields related to BME internally or externally. The program joined the student exchange program between the Cincinnati University and the Faculty of Engineering and Technology, FUE. Such a program allows the outstanding undergraduate students to study at Cincinnati University in order to develop their intellectual skills and build their overseas network.

The career for BM engineers is growing rapidly. The previous few years showed that there are current and forthcoming job needs for engineers in the clinical and hospital environment capable of dealing with medical equipment and related fields. Thus, BM engineers may have careers in medical equipment companies for development of new equipment/techniques; medical equipment agencies for maintenance, training, and sales purposes; hospitals as medical staff support in surgical suites, planning and following up on maintenance, purchases, and inventory activities; and clinics for maintenance and training purposes.

**The main qualifications that are needed to study “the program”**

The candidate for such program; in addition to academic qualifications; should have

* excellent communication skills to work with various professionals (physicians, nurses, technicians, patients, etc).
* capabilities of adapting to different working environment (hospitals, clinics, medical equipment industry, medical labs, academic or research institutions,
* ethical values toward the profession and the society
* good attention to details
* efficient computer literacy
* excellent problem-solving skills
* ability to work under pressure
* ability to design effective aesthetic products that are cost-effective
* capacity to combine technical knowledge with creativity.
* adequate commercial awareness for analyzing product marketplaces

**The Educational Philosophy**

The philosophical foundation of BME education is to articulate its ethical framework. The philosophy of BME is to expose bioengineers to their ethical and social responsibilities. To achieve the final objectives of bioengineering, both the practical and theoretical knowledge of values must be acquired. The former is essential for invention and innovation; meanwhile the later exposes bioengineers to the integrated discipline of knowledge and values. It, not only inspires BM engineers to acquire the knowledge of the existing world, but also to expose the BM engineers to their ethical and social responsibilities

**Overview of the Program**

The Biomedical Engineering Program is a recently emerged discipline, compared to many other engineering fields. It provides broad principles of scientific backgrounds in basic sciences, mechanical, electrical, and chemical engineering in addition to medical background required to deal with human health needs. BME applies engineering principles and design concepts to medicine and biology. It combines the engineering design and problem-solving skills with medical and biological sciences to improve healthcare environment. It deals with the development of materials, components, and electronic equipment that provides medical staff with efficient tools needed by medical care field.

**Added value for studying “the program” in terms of skills**

Studying biomedical engineering can combine their diverse skills to create solutions to continuing worldwide health issues, helping to change how patients are treated and lowering the cost of care. By deep understanding of the internal body, It can help health professionals truly evaluate, diagnose and treat illnesses. It's an important subject that's essential to improving the health of the world's population.

**Career opportunities (what awaits the student after graduation?)**

The previous few years showed the current and forthcoming needs for engineers capable of dealing with medical equipment. Therefore, the career for BM engineers is growing rapidly. BM engineers are needed in:

* Medical equipment companies for development of new equipments/techniques
* Medical equipment agencies for maintenance, training and sales purposes
* Hospitals for medical staff support in surgical suites, planning and following up on maintenance, purchases and inventory activities.
* Clinics for maintenance and training purposes
* Software houses developing specialized new software for medical equipment companies/agencies

**Students' training and research**

According to the BME program all students are required to complete 3 sessions of training (each 80 hrs) in fields related to BME fields starting from the summer after 2nd level. The training takes place in cooperation with national organization, industries or biomedical equipment agencies in Egypt. In addition, the program recently joined the cooperation with The Cincinnati University student exchange program with the Faculty of Eng. & Tech, Future Univ. in Egypt. Such program allows some undergraduate students to attend some courses at Cincinnati University of Science and Technology in order to develop their intellectual skills and build their overseas network.