What is Biomedical Engineering?

and

What is biomedical Engineer?
The field of Biomedical Engineering is by no means new. Many instruments were developed as early as the 19th century. Electrocardiograph. The discovery of op-amps and other electronic components after the world war II encouraged engineers to experiment with and modify existing equipments for medical use. (During the 1950’s) Disappointing results
Experimenters recognized that physiological parameters can not be measured the same way as physical parameters.

Communication problems encountered with medical profession.

In 1960’s many medical manufacturers entered the field of medical instrumentation, but with high development costs, also medical staffs were suspicious about its use and often uncooperative.
During the same period some companies decided to design medical equipment for medical use rather than modifying existing ones.

Equipment analysis and design were applied directly to medical problems.

The government of USA represented mainly by NASA provided a large deal of help, because space programs needed accurate physiological monitoring for astronauts. Consequently, much research and money went into this area.
History

- Some of the concepts and features of patient monitoring systems presently in use in hospitals evolved from the aerospace medicine programs.
- Also, during the 1960’s the awareness of the need for engineers and technicians to work with the medical profession developed.
- Engineering societies formed the Engineering Medicine and biology, biomedical Engineering Society. Most importantly, universities started to offer courses and curricula in biomedical Engineering.
Definition of Biomedical Engineering

- The prefix bio- means something connected with life.
- When you say, for example Biomechanics you mean the application of mechanical engineering area to living components. Also, Biomedical instrumentation involves measurement of biological variables.
- Bioengineering is the application of the knowledge gained by a cross fertilization of engineering and the biological sciences so that both will be more fully utilized for the benefit of man.
Definition of Biomedical Engineer

- Biomedical engineer (also, known as hospital engineer, medical engineer.) is a person working in research or development in the interface area of medicine and engineering.

- Clinical Engineer (AAMI definition) is a professional who brings to health care facilities a level of education, experience and accomplishment, which will enable him responsibly, effectively, and safely mange and interface with medical devices, instruments and systems and the use thereof during patient care, and who can, because of this level of competence, responsibly and directly serve the patient and physician, nurse and other health care professionals relative to their use of and other contact with medical instrumentation.
The Biomedical Equipment Maintenance Technician

- BMET (AAMI) is an individual who is knowledgeable about the theory of operation, the underlying physiologic principles and the practical, safe clinical application of biomedical equipment.

- Capable of: Installation, calibration, inspection, preventive maintenance and repair of general biomedical and related technical equipment, operation and supervision of equipment control, safety and maintenance programs and systems.
Definition of Biomedical Engineer

No matter what term you prefer to use, the biomedical engineering, as an interdisciplinary field, provides us with tools to help fight the effects of body malfunctions and diseases.