11. MEDICAL ENGINEERING SERVICES:

The Medical Engineering Department of AUB has been providing its services to the Medical Center (AUBMC), the Faculty of Medicine, the Faculty of Arts and Sciences (including Geology, Physics, Chemistry, and Biology) including the core lab facilities and the Environmental Lab. and offering occasional support to the Faculty of Agriculture and Food Sciences and the Faculty of Health Sciences and external consultations to Universities, Hospitals, Governments, Government Agencies/, Ministry of Health, International Agencies, UN/ WHO and pharmaceutical industries

Our services cover the following

- **Technology Transfer - With Management Processes and Systems**
  - Assessment of new or existing technologies and advising on replacement of existing technologies
  - Planning of facilities (including budgeting) including new constructions or remodeling
  - Development of policies, procedures, and administrative systems
  - Development of bid specifications and evaluation of bids
  - Purchasing negotiations
  - Equipment-specific site planning and equipment installations
  - Advising on software systems for laboratory, radiology, medical records, scheduling, etc...

- **Technology Management Services**
  - Development and implementation of systems to meet international and/or local standards including JCI, AAMI, AHA, NFPA, CSA, UL, CAP, FDA, ACR, etc. at AUBMC. Implement the required fundamentals for ISO 9001:2008 in other labs
  - Development of policies and procedures and optimize workflow of repair, predictive, preventive and corrective maintenance.
  - Implementation of equipment management and maintenance programs/ software
  - Balancing in-house vs. outside maintenance and service agreements
  - Negotiation of service agreements
  - Development of safety programs
  - Development of calibration protocols
  - Development of proper asset tracking and equipment repair/ cost/ history files
  - Development of Quality assurance and control systems
  - Assessment of the effectiveness and efficiency of the above
  - Continuous improvement via PI programs
  - Implementing a computerized equipment management program
  - Supply chain management of needed spare parts
  - Developing and optimizing Methods and Protocols
  - Establishing and developing Standard Operating Procedures
  - Helping in Results interpretation
  - Helping in Troubleshooting sources for incorrect results

- **Medical IT Services**
  - Medical Equipment cyber-security:
  - Medical Networking/ connectivity issues
  - Medical data & medical programs backup
  - Remote monitoring of medical equipment and computers
  - Programming: Medical projects and all Medical Engineering needed IT projects/ programs (i.e. but not limited to Medical Video Imaging and Streaming, OR automation)
  - Dynamic Medical Engineering WEB site to include service manuals, operating manuals, user troubleshooting/ common problems
  - Simulation software support for Medicine, Nursing and basic sciences

- **Educational Programs & HR related issues**
  - Training of nursing staff and support teams on the proper use and care of equipment
  - Technical training of users in different university and medical center laboratories
  - Application training
  - Development of training material including interactive and video based material
  - Training of biomedical engineers and technicians
  - Technology management and transfer practices for administrators and clinical and nursing senior management
  - Training on electrical safety
  - Specific technology presentations to medical and nursing staff
  - Develop job descriptions and competencies for the staff
  - Develop and implement training on technical and soft skills to have service staff acquire international certification

- **Medical and Science Research**
  - Applying to research grants as co-investigators
  - Participating in medical or science procedures/experiments as support or as co-investigators
  - Modifying existing equipment for special research purposes
  - Designing new equipment and software for special research purposes
  - Offering consultancy services in certain research activities