PROJECT WORK

As an important feature of the programme, the students have to undergo a 4 week training programme in a hospital or a medical device industry which helps the students to take up projects from industry or from the hospitals, those are highly relevant to the society.

Centre for Medical Electronics, an autonomous research centre of Anna University has collaboration with various hospitals and industries. Some of them are

1. Apollo Hospitals
2. Sri Ramachandra University
3. DEBEL, Bangalore
4. Diabetic Footcare, Chennai
5. NIMHANS, Bangalore
6. Sankara Nethralaya
7. TANUVAS
8. Stanley Medical College

The students of M.E Medical Electronics are exposed to excellent research facilities. Through the collaboration of Centre for Medical Electronics with the hospitals, the students are encouraged to take up projects in these hospitals and are provided with opportunities to work in projects specified by the hospitals and projects funded by DST, Govt. of India, Life Sciences Research Board, DRDO and CTDT, Anna University.

CAREER OPPORTUNITIES

Post graduates of M.E Medical Electronics could be employed in Government Departments, various Research Institutes and medical device industry which includes:

1. Ministry of Health and Family Welfare , India
2. Biomedical Industry
3. Rehabilitation Industry
4. Bioengineering Researcher
5. Non Governmental and private Sector
6. National/International Research Organizations and Universities

FOR FURTHER INFORMATION PLEASE CONTACT

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DEPARTMENT OF
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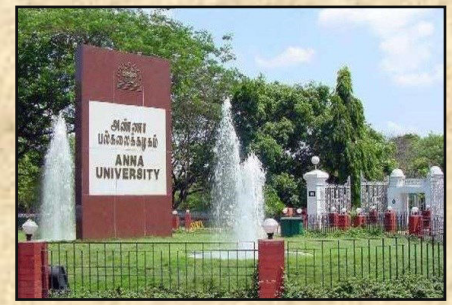

M.E MEDICAL ELECTRONICS

Professor-in-charge: Prof.Dr.S.Nirmala Devi

VISION

To be recognized as a benchmark and trend setter in Electronics and Communication Engineering domain keeping in pace with rapidly changing technologies through effective partnership with reputed academic institutions, research organizations, industries and community.

INTRODUCTION

The core health care science and research in medical sciences will have ever increasing interface with technology areas. The future will not only be dominated by advances in life sciences but will witness the merging of entire technologies and medicine. This synergy is already happening and we should not lack behind. To meet these challenges, a new breed of professionals is required who will be conversant with the medical profession as well as the engineering profession. On a number of occasions, the need to bring closer the scientists/engineers and medical professional has arisen for specific problems and for further advances in medical research and hence more effective healthcare.

EVOLUTION OF THE PROGRAMME

The Department of Electronics and Communication Engineering, College of Engineering has the rare distinction of having a separate Medical Electronics Lab from as early as 1975. A Post Graduate degree specializing in Medical Electronics was introduced in 1993, the first of its kind among the Indian Universities. The alumni are employed in Biomedical Electronics industries and hospitals.

PROGRAMME SPECIFIC OBJECTIVES

- To integrate concepts in mathematics, science and engineering to solve the problems at the interface of engineering and biology.
- To gain knowledge about sensors and measurement techniques to acquire and analyse various vital physiological parameters.
- To understand and analyse the principles of biomedical equipments used in health care.
- To prepare the students to apply their knowledge in design, development, simulation, modeling and research related to biomedical systems.
- To motivate students to become entrepreneurs to develop indigenous biomedical solutions.

COURSE OBJECTIVE

M.E. in Medical Electronics is a Full time four semester programme offered by the Department of Electronics and Communication Engineering, Anna University, Chennai. Medical Electronics Engineers develop devices and procedures that solve medical and health related problems by combining their knowledge of biology and medicine with engineering principles and practices. Many do research, along with scientists from various fields to develop and evaluate systems and products such as artificial organs, prostheses (artificial devices that replace missing body parts) instrumentation and medical information system. Medical Electronics engineers also design devices used in various medical procedures, imaging systems such as ultrasound, Magnetic Resonance Imaging (MRI) and devices for automating insulin injections or controlling body functions.

COURSES OFFERED

The curriculum of the programme is framed such that the students are exposed to important core courses needed for the programme and elective courses covering the latest development in the field of Medical Electronics. Some of them are:

CORE COURSES

1. Human Anatomy and Physiology
2. Bio Medical Instrumentation
3. Biosignal Processing
4. Medical Equipment
5. Medical Image Processing
6. Medical Imaging Systems & Radio Therapy

ELECTIVE COURSES

1. Brain Computer Interface & Applications
2. HealthCare, Hospital and Equipment Management
3. Biomechanics
4. Rehabilitation Engineering
5. Pattern Recognition Techniques & Applications
6. BioMEMS
7. Wearable Body Area Networks

FEATURES OF THE PROGRAMME

The students of this programme are exposed to core life science course so that they can be a bridge between engineering and medicine. The curriculum has the core courses those impart knowledge to understand and develop indigenous healthcare devices, to do research in diverse fields of Medical Electronics. Some of the research fields which the students of this programme are exposed to are :

1. Development of low Cost rehabilitation aids
2. Biosensors and Instrumentation
3. Biosignal processing and Medical Imaging
4. Medical Informatics
5. Brain Electrical Activity Monitoring
6. BCI Applications

FACILITIES

The Department possess state of the Art Infrastructure like Bio signal acquisition systems, Medical Image Processing systems, High End DAQ, Gait Analaysis System, Modeling Softwares, Treadmill, Deep Freezer, Electrical Safety Analyzers to name a few.