MEDITRONICS

DEPARTMENT OF BIOMEDICAL ENGINEERING

OCTOBER-2022 • VOLUME XIV • ISSUE 1

Vision of the Department

To be a globally recognized centre of excellence in the field of biomedical engineering where learners are nurtured in a scholarly environment to evolve into competent professionals to benefit society

Mission of the Department

- Evolve a curriculum which emphasizes on strong engineering fundamentals with the flexibility to choose advanced courses of interest and gain exposure to tools and techniques in Biomedical Engineering.
- Encourage a teaching-learning process in which highly competent faculty share a symbiotic association with the institutes of repute.
- Facilitate creation and dissemination of biomedical engineering knowledge through a digitally-enabled learning environment.
- Develop academic and infrastructural facilities with modern equipment and other learning resources and encourage reciprocal sharing with other institutes through networking.
- Establish a centre of excellence to enhance academia – biomedical industry partnership and work on collaborative projects.

Programme Educational Objectives (PEO)

- To enable the pursuit of knowledge in the field of Biomedical Engineering and contribute to the profession and employability of the students.
- To engage in research, generate the employment through entrepreneurship and work effectively in multidisciplinary environment.
- To understand the human, social, ethical and environmental context of their profession and contribute positively to the needs of individuals and society.

WHAT'S INSIDE

PROF. DR. JITENDRA TORAVI

HEAD OF DEPARTMENT, BIOMEDICAL ENGINEERING

Hello Everyone,

I am happy to inform all our readers that Department of Biomedical Engineering has signed a MoU with Capgemini Engineering. This MoU is a step for us to foster collaboration to promote Industrial and Academic Interaction with an objective of improving Internships and Placements.

Also, it has been resolved by University of Mumbai that Semester-V students will be offered Honors/ Minor Degree Program in the areas of Internet of Things (IoT), Artificial Intelligence(AI)/Machine Learning (ML) and Data Science. All eligible students will be benefitted by this initiative. And will get an edge to learn cutting edge technologies.

As per the academic calendar, End Semester Examination (ESE) will start from 14th November 2022, and this will be followed by Oral/Practical Examination. Students are requested to check the schedule from the department office.

I wish all the best for the upcoming examinations.

> " Live as if you were to die tomorrow. Learn as if you were to live forever.
> -Mahatma Gandhi "

Workshop on "Advancements in Radio-Diagnostic and Radiotherapy Equipment"

A workshop was conducted on the topic "Advancements in Radio-Diagnostic and Radiotherapy Equipment" The workshop was jointly organized by the Society for Radiation Research (SRR) and Vidyalankar Institute of Technology, Mumbai. The workshop was conducted on 6th August, 2022 at Advanced Centre for Radiation Oncology, Nanavati Max Super Speciality Hospital. The workshop was joint effort of SRR and Nanavati Hospital. Dr. Badri Pandey (Secretary-SRR) and Dr. Nagaraj Huilgol (Chief Radiation Oncologist- Nanavati Hospital) were the chief mentors in organizing the workshop. Prog. Geetha N., Prof. Priyanka S. and Prof. Arunkumar R. coordinated the workshop for VIT Participants.

The workshop was attended by Faculty and Students from the Department. Some of the sessions conducted-Radiation-its implications and Hormesis, Cancer and Radiation Treatment, Introduction to Radiation Treatment Machine, Advances in Radiation Treatment Techniques, Demonstration of Treatment Planning Systems and Software and Importance and Demonstration of Immobilization Devices for Treatment Planning.

Faculty and Student Participants

Live Demonstrations

Department Staff

DR. JITENDRA TORAVI
PROFESSOR AND HEAD

EDUCATION QUALIFICATION:
PHD-BIOMEDICAL ENGINEERING

TEACHING EXPERIENCE:
05 YEARS
INDUSTRIAL EXPERIENCE:
19 YEARS

AREA OF SPECIALIZATION:
BIOMEDICAL INSTRUMENTATION
HOSPITAL MANAGEMENT
ERGONOMICS

PROF. KOMAL SHINDE
ASSISTANT PROFESSOR

EDUCATION QUALIFICATION:
ME-INSTRUMENTATION

TEACHING EXPERIENCE:
10 YEARS

AREA OF SPECIALIZATION:
MEDICAL IMAGING
HUMAN ANATOMY & PHYSIOLOGY
DIGITAL ELECTRONICS

Workshop on "Cardiopulmonary Resuscitation (CPR)"

A Workshop on "Cardiopulmonary Resuscitation (CPR)" was jointly conducted by BMESI-VIT Chapter and BMSA VIT Chapter. The workshop was organized on 17th September 2022 in the Department of Biomedical Engineering. The speaker for this workshop was Mr. Pandurang Tekawade, who is a Trained Respiratory Therapist at P. D. Hinduja Hospital, Mahim. He has an experience of over 25+ years and is also a Basic Life Support Trainer. He was accompanied by Mr. Vivek Tambe (Anesthesia Technologist) and Mr. Madhukar from Rescare Medisystems Logistics.

Mr. Tekawade started the event by giving the outline of the workshop. He explained the importance of knowing how to perform CPR. He further went on to explain how a cardiac arrest happens in a person, which factors make a person more prone to getting a cardiac arrest. The physiology o blood vessel was also highlighted as it is an important factor which causes cardiac arrests.

This was followed by the hands-on session in which attendees were asked to perform the CPR practically. The attendees were divided in pair of two and all were given a chance to perform CPR on a digital mannequin. The workshop was well received by all the participants which included students, faculty, nonteaching staff and security personnel from the institute.

Know an Alumna

Ms. Richa Bhujbal (2021 Batch)

Richa Bhujbal is an alumna of VIT , passed out in the year 2021 from the Biomedical Engineering Department.

To begin with, I have always wanted to pursue higher education after my bachelor's degree. In this, my journey at Vidyalankar Institute of Technology has been one of the most enriching experiences of my life. Throughout my master's program in Biomedical Engineering at The University of Illinois Chicago, I have come to realize and appreciate just how much the four years of engineering at VIT have given me in the form of experienced professors, application-based study and a college life with incredible memories.

Owing to this, not only have I felt more confident throughout my master's study here, I have also gained several extracurricular skills and knowledge which was made possible by the opportunities at VIT. Most of all, it has helped me become academically proficient and prepared me for the next chapter of my career, for which I will always be grateful.

To the juniors reading this, regardless of whether you plan on working or pursuing higher education, participate in activities offered at VIT because the interpersonal skills built here will stay a long way with you even outside of academics. In time, the memories that you make here will be reminiscent of some the best times of your life.

STUDENT ARTICLE

"Bridging the Gap between AI and Healthcare"
Ms. Freny Babaria (T.E. Biomedical)

Artificial Intelligence(AI) is versatile and has lot of applications in the Healthcare domain. There are numerous research indicating that AI is already performing better than humans in various fields of healthcare. Algorithms are already surpassing radiologists in terms of detecting dangerous tumors and advising researchers on how to build cohorts for expensive clinical trials. There are plentitude of places in healthcare where AI is applied, one of which is Machine Learning. Machine Learning is widely used for precision medicine and requires a database to tutor. In a more complex form, it is also used for deep learning or neural network models which have various levels to predict certain outcomes. AI is also used in the administrative department of HealthCare, Natural language processing, diagnosis and treatment etc.

AI will play a significant role in future healthcare products. It will be capable in the growth and development of precision medicine and enhance the radiology and pathology imaging machines. Text and speech recognitions are already in use for better communication with the patient. The most difficult hurdle for AI in many healthcare fields is assuring its acceptance in daily clinical practice, not whether the technologies are capable enough to be useful. There are several steps to be taken before an AI based product can completely practiced. It will take about 8 to 10 years to overcome these hurdles. By now, we have established that the world is never entirely going to be replaced by AI when it comes to healthcare, sooner or later more number of clinicians will accept the AI Technology as an assistive tool. Some researchers also say that the use of AI in the future would make the clinicians more empathetic and persuasive which leads to the betterment of humanity.

Faculty Achievement: Prof. Geetha Narayanan

Prof. Geetha Narayanan from the department delivered an online session on "Virtual Lab Development" on 23rd September 2022 at K.J Somaiya Institute of Technology, Mumbai. Virtual Labs project is an initiative of Ministry of Human Resource Development (MHRD), Government of India under the aegis of National Mission on Education through Information and Communication Technology (NMEICT). The session was delivered through VLabsDev Initiative of IIT Bombay. The session focused on the components of Ideation Canvas template that is used for the development of new virtual lab.
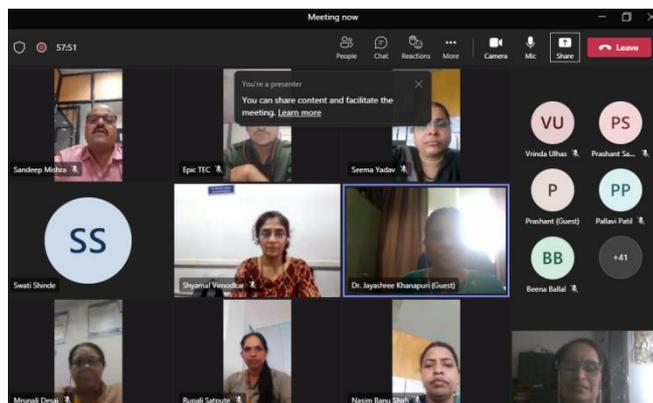
THE
Editorial Team

PROF. ARUNKUMAR RAM
Chief Editor