VIT Vidyalankar Institute of Technology
Accredited A+ by NAAC
An Autonomous Institute Affiliated to University of Mumbai

MEDITRONICS

DEPARTMENT OF BIOMEDICAL ENGINEERING

JANUARY-2025 • VOLUME XVI • ISSUE 2

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. GAJANAN NAGARE

HEAD OF DEPARTMENT, BIOMEDICAL ENGINEERING

Biomedical Engineering, field thrives on bold decisions, risk-taking, and the continuous pursuit of making groundbreaking innovations "right" for society. From developing advanced medical devices to improving diagnostic tools, and enhancing patient care, each decision we make leads to a better world.

Recently our department received CSR fund from Powerica Ltd. for strengthening our lab facility for conducting research in the domain of biomedical signal acquisition and artificial intelligence/machine learning. Prof. Suvarna Udgire as the head of Industry Institute Interaction Cell have been experimental in getting this funds.

We are starting our new term for even semester of A.Y. 2024-25 from first week of January-2025. Our Autonomy students from semester-VI will have opportunity to select a Honours/Minors degree of their choice from this semester.

I wish my students all the best for new semester and Happy Learning!

"If something is important enough, even if the odds are against you, you should still do it"-Elon Musk

Hands-on lecture series on "Anatomy and Physiology" at Seth G.S. Medical College, Parel

A hands-on lecture series was organized to the Anatomy & Physiology Department of G.S. Medical College aimed to deepen second year biomedical engineering students' understanding of human systems and their functions. The lecture series was conducted from 26th September 2024 to 3rd October 2024 by doctors of Seth G.S. Medical College and KEM Hospital. The visit also highlighted anatomy and physiology's relevance in use and design of medical equipment. Organized with approvals from department heads and college authorities, the schedule included sessions on the skeletal, muscular, respiratory, cardiovascular, alimentary, urinary, reproductive, and nervous systems, as well as practical physiology topics like blood cell counts and hemoglobin estimation. The lecture series was very well received by students and faculty members of the department. This lecture series was coordinated by Prof. Bhavika Khatri and Prof. Komal Shinde from the department.






Department Staff

PROF. KOMAL LAWAND
ASSISTANT PROFESSOR

EDUCATION QUALIFICATION:
ME-INSTRUMENTATION

TEACHING EXPERIENCE:
12 YEARS

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

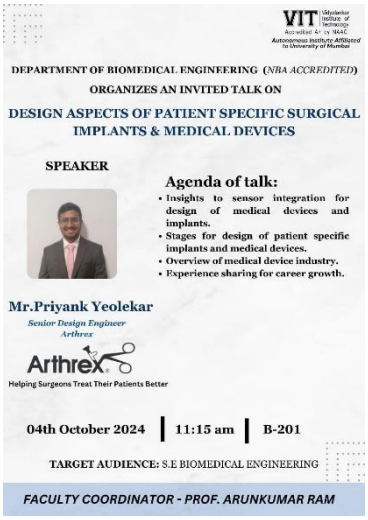
Ms. BHAGYASHREE SHINDE
DEPARTMENT EXECUTIVE

EDUCATION QUALIFICATION:
MBA FINANCE

TOTAL EXPERIENCE:
09 YEARS

AREA OF SPECIALIZATION:
ACCOUNTS & FINANCE

Expert talk on "Design Aspects of Patient Specific Surgical Implants and Medical Devices"



On 4th October 2024, an expert talk on "Design Aspects of Patient Specific Surgical Implants and Medical Devices" was organized, This session was coordinated by Prof. Arunkumar Ram. The speaker, Mr. Priyank Yeolekar, Senior Design Engineer at Arthrex, shared insights on sensor integration, design stages for patient-specific implants, and an overview of the medical devices industry, along with career growth advice.

Mr. Yeolekar highlighted Arthrex's innovative contributions to orthopedic devices and discussed the importance of sensors in improving patient outcomes. He detailed the iterative design process of implants and emphasized collaboration, testing, and regulatory compliance in the medical devices industry. Additionally, he shared personal experiences, encouraging students to pursue continuous learning and networking for career advancement.

The session was meticulously planned, with approvals secured and students informed beforehand. Feedback collected showed an excellent response, with an average score of 4.69 out of 5. The event provided valuable knowledge on medical device innovation and professional development, enhancing students' understanding of the field and inspiring them to excel in their careers.

Know an Alumnus
Mr. Samar Mandke (2010 Batch)

Samar is an alumnus of VIT , passed out in the year 2010 from the Biomedical Engineering Department.

Hello readers currently I am working as Field Service Engineer 3 at Intuitive India Surgical Pvt Ltd working on Davinci Surgical products supporting states like Maharashtra, Goa, Chhattisgarh. Expertise in delivering one of the best services in healthcare Industry even in Tier 2 and Tier 3 cities within 24 hours. I am also responsible for various projects utilizing my data analytics (Python, SQL) and visualization skills (Tableau/Power Bi) at global level viz:

- Improving predictive / proactive service aiming for reduction of breakdown during surgeries
- KPI improvisation for service team in Europe and APAC countries
- Improving customer and patient experience
- Transfer of error codes/system events into human readable form

I started my career as installation specialist for MRI (one of the complex imaging modality) in GE healthcare installing around 50 MRI during my tenure. A special thanks to Prof. Uma Jayashankar who laid the foundation of MRI basics right from my final year of engineering. I was also one of the member experimental in starting the Biomedical Student Association (BMSA) in 2007 under guidance of Dr. Arun Chavan. The Guidance of Dr. Chavan taught us the importance of time management, optimizing available resources without affecting the core job. This has enabled me to take additional responsibility during my career which helped me to grow in my professional career. I would also like to thank all my teachers, mentors, and friends who has helped me to grow in healthcare industry.

I will suggest my juniors to Identify their area of interest, hobby and start focusing on strong foundational concepts, actively seeking practical experience through projects, develop problem solving skills, mastering relevant software tools, cultivating communication teamwork abilities, and stay updated with industry trends. College life may be stressful at times, so find the time for your hobbies, interest and participate in sports, extra-curricular activities to gain confidence at various levels. College life is the best time of your life. Try to utilize it by having healthy conversation with teachers, mentors, and seniors. Do not hesitate to try something new. come with new ideas, try to implement it .

STUDENT & FACULTY ACHIEVEMENTS

Finalist for Smart India Hackathon-2024 in Hardware Edition

Department is proud to highlight participation of our third year students at Smart India Hackathon-2024 in hardware edition organized by All India Council of Technical Education (AICTE), Ministry of Education (MoE), & MoEs Innovation Cell. Their problem statement on "Detection of Intraocular Pressure (IOP) in Glaucoma patients using No Contact Method" was shortlisted for final rounds held at KCT Tech Park, Coimbatore. From 11th to 15th December 2024. The team was selected out of total 49,892 teams nominated by several institutes across India. The team comprised of our students-Ms. Chrysanna Fernandes, Ms. Bhumika Lingait, Ms. Mrudula Wani, Ms. Ameya Ghadge, Mr. Mustafa Challawala & Mr. Durvesh Sawant and faculty mentor-Prof. Arunkumar Ram.

Best student paper award to Mr. Megh Mhatre at INSPECT 2024

Our final year student Mr. Megh Mhatre has been awarded best student paper award at 2024 IEEE International Conference on Intelligent Signal Processing and Effective Communication Technologies (INSPECT) organized by Atal Bihari Vajpayee - Indian Institute of Information Technology and Management, Gwalior, Madhya Pradesh. His research work titled "Comparative analysis of fPCG denoising using Wavelet Transform and Peak Extraction". This research work was mentored by Prof. Geetha Narayanan and Dr. Anjali Deshpande.

Students and Faculty Mentor at finals of SIH 2024 at KCT Tech Park Coimbatore

Mr. Megh Mhatre receiving award at INSPECT 2024

Student and Faculty Publications

1. Bhavik Kanekar, Jay Sawant, Niti Chikhale, Paras Dhotre, Sushil Savant, Gajanan Nagare, Kshitij Jadhav, "Classification of Cutaneous Diseases: A Systematic Study on Real-Time Captured Images Using Deep Learning", 27th International Conference on Pattern Recognition (Springer- ICPR), Kolkata, India, 1st- 5th December- 2024.
2. Nishant Patil, Ghanshyam D. Jindal, B Sanjeev Rai, Gajanan D. Nagare, "Radial Pulse Pattern Recognition Using Deep Learning", Third International Conference on Data Analytics and Learning-2024 (Springer), Nanded, India, 27th -29th December 2024.
3. Copyright (Reg. No.- L-158016/2024), IoT-Enabled Wheelchair with Integrated Stand-Assist Mechanism. Date of Registratiopn-09th December 2024. Authors-Mr. Abhinav Paniketty, Ms. Shruti Jha, Ms. Sania Ayare, Mr. Calix Jangul and Shri. Arunkumar Ram.

Course Completed by Faculty

Prof. Geetha Narayanan completed following courses offered by National Institute of Technical Teachers' Training and Research

1. Internet of Things Sensors and Actuators
2. AI ML in Robotic Applications
3. Generative AI in Pedagogy
4. Modern Software Tools usage in Electrical and Electronics Engineering

THE

EDITORIAL TEAM

PROF. ARUNKUMAR RAM
Chief Editor