



### 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.

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- Prof. Harish Ojha

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## PROF. DR. GAJANAN NAGARE

HEAD OF DEPARTMENT, BIOMEDICAL ENGINEERING

I would like to welcome my students and faculty to new semester. Your academics will start from second week of July 2023.

As all of you are aware that our Institute has got Autonomous Status by UGC starting from Academic Year 2022-23. This semester onwards we will be implementing our autonomous curriculum for the second-year students.

We have planned couple of activities in coming semester like Visit to Cancer Research Centre in collaboration with Society for Radiation Research (SRR), Several technical events organized by BMSA and BMESI student chapters. Students and Faculty members are expected to participate in all these events with full spirit.

This semester we have invited eminent national & international speakers as visiting faculties for the course Human Anatomy & Physiology, Bioinformatics & Tissue Engineering. This will benefit our students and get new experience in the learning process.

Thank you



“Success is not final, failure is not fatal, it is the courage to continue that counts  
-Winston Churchill”

## Faculty Development Program on “Digital Health” organized by Capgemini Engineering

Department of Biomedical Engineering at VIT is active MoU partner with Capgemini Engineering. The purpose of this MoU is to foster students' placements, internship, skill development and faculty enrichment. In this effort a faculty development program was organized by Capgemini Engineering on the theme of “Digital Health”. The FDP was arranged in hybrid mode where faculty visited the medical labs at Capgemini Engineering on 8<sup>th</sup> June 2023 and rest of the session were conducted in online mode from 13<sup>th</sup> to 16<sup>th</sup> June 2023.

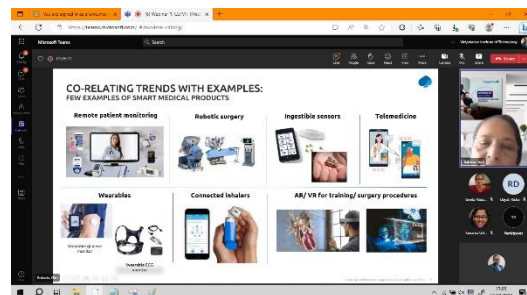
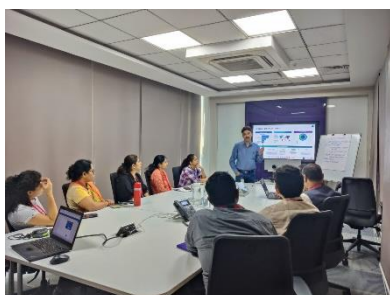
All faculty from the department visited medical lab facility at Capgemini campus at Airoli. Mr. Atul Kurani (VP-Capgemini Engineering & Head of Medical and IoT Business) gave a crisp presentation on overview of medical device business at Capgemini Engineering. Ms. Gita Babaria (CTO-Medical Practice) gave an overview on different medical device projects handled by Capgemini for their clients. This was followed by visit to their labs-Abbott lab, IoT Lab & Analytical Lab. The lab visit was also coordinated by Ms. Dimple Tandel (Project Manager) and Ms. Anam Shrivastava (Associate Consultant).

Online part of the FDP comprised on sessions by Capgemini Technology experts on different topics. Ms. Gita spoke on Digital Health Architecture, Dr. Richa Dayal (Medical and Healthcare Solutions) spoke on overview of Artificial Intelligence and Machine Learning concepts, Dr. Saphagirivasan V. (Sr. Manager-Engg. R&D Medical Life Sciences) spoke on specific applications on use of AI/ML for healthcare purpose with live case studies, Mr Narendra Singh (Principal Consultant-Medical Devices, SaMD & IoMT) spoke on Software as a medical device (SAMD) and the last session was delivered by Mr. Pradeep Kolankari (Sr. Director Solutions-Medical Devices and Healthcare Practices) spoke on overview of Digital Health.

All the sessions and lab visits were well coordinated and appreciated by our faculties. We are also grateful to SPOC-Prof. Arunkumar Ram and SPOC-Dr. Richa Dayal for coordinating the FDP.



Biomedical Department Faculty at Capgemini Campus



Glimpse of the Online Session

### Department Staff

PROF. ARUNKUMAR RAM  
ASSISTANT PROFESSOR



**EDUCATION QUALIFICATION:**  
ME-BIOMEDICAL ENGINEERING

**TEACHING EXPERIENCE:**  
12 YEARS

**AREA OF SPECIALIZATION:**  
BIOMEDICAL INSTRUMENTATION,  
MEDICAL IMAGING  
BIOMATERIALS

PROF. HARISH OJHA  
ASSISTANT PROFESSOR



**EDUCATION QUALIFICATION:**  
M.TECH-ELECTRONICS ENGINEERING

**TEACHING EXPERIENCE:**  
12 YEARS

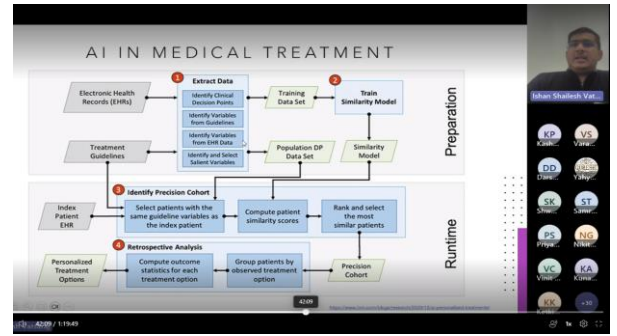
**AREA OF SPECIALIZATION:**  
ELECTRONIC DEVICES  
DIGITAL CIRCUITS  
MICROCONTROLLERS

## Guest Lecture Series and Industrial Visits organized by the Department

### Guest Lectures (02)



**Python and its Applications (13<sup>th</sup> April 2023)**  
 Speaker: Mr. Anand Panchal  
 (Sr. Software Engineer at Moneycontrol)



**Recent advancements in AI (04<sup>th</sup> May 2023)**  
 Speaker: Mr. Ishan Vatsaraj  
 (Masters candidate at John Hopkins University)

### Industrial Visits (02)



**Visit to Nanofabrication Lab at IIT Bombay**  
 11<sup>th</sup> April 2023



**Visit to All India Institute of Physical Medicine and Rehabilitation**  
 11<sup>th</sup> April 2023

## Know an Alumnus

**Mr. Ajay Wagh (2013 Batch)**



Ajay Wagh is an alumnus of VIT, passed out in the year 2013 from the Biomedical Engineering Department.

I am enrolled in a full-time certification program focused on Quality Management & Regulatory Affairs. Starting in July 2023, I will embark on a new journey as a Quality Assurance Specialist in a multinational company based in Germany. After the successful completion of my M.Sc, I worked as a Research Associate specializing in Tissue Engineering at OvGU, Germany. My research has involved the development of a lung tumor model as a viable alternative to animal testing.

From my perspective, VIT not only helped me achieve my academic goals but also provided a solid foundation for learning and personal growth. The presence of industry experts and engaging seminars and training programs greatly benefited my professional career, both in India and Germany. VIT played a pivotal role in instilling in me a strong passion for continuous learning and fostering a growth mindset. It encouraged me to actively seek out new knowledge, stay updated with the latest innovations and trends in the field of Biomedical Engineering, and adapt to the ever-evolving information landscape. This mindset has been instrumental in continuously enhancing my abilities and ensuring that I provide up-to-date and relevant information to others.

First and foremost, consider yourself fortunate to be a part of VIT, an institution renowned for its exceptional infrastructure, highly qualified faculty, and inclusive environment. Embrace this opportunity and make the most of it. Focus on acquiring transferable skills that will benefit you beyond your academic journey. While you spend your four years at VIT, actively participate in various activities, festivals, and events. This will allow you to build a well-rounded college experience and cherish enjoyable moments along the way. To gain practical experience, engage in internships that align with your interests. Set SMART (Specific, Measurable, Achievable, Relevant, and Time-bound) goals to guide your academic and professional growth.

Having resided in Germany for over 7 years and attaining a high level of fluency in German (C1), I possess a robust background in Biomedical Engineering along with extensive research experience. For individuals interested in pursuing their academic and professional endeavors in Germany, I am delighted to offer my assistance. You can reach out to me through the VIT Mentorship platform or by sending an email to [ajay.wagh7@gmail.com](mailto:ajay.wagh7@gmail.com). I look forward to providing guidance and support in your journey towards success in Germany.



STUDENT ARTICLE



“Revolutionizing healthcare with UI/UX”  
Ms. Yadnyesha Rane(T.E. Biomedical)

Technology is changing the way to aid mankind, UI/UX is a new member in health tech and a very welcoming one as well. The health-tech sector is among the fastest-growing in the world today, making the stakes super high. Investments in healthcare AI software, hardware, and service market will reach \$34 Billion Worldwide by 2025. Here are several new technological trends emerging in healthcare being in different levels one of them is UI/UX.

There is no commonly accepted definition of UI/UX but explaining in layman terms your responsibility as UI/UX designer it to make sure that software which your user is interacting with should be easy to understand from their end. UX as a word stands for user experience which is not just restricted to apps or software but also to any physical products. UI/UX is an intersection between technology and creativity.

With the increase in digital transformation in healthcare, the need to offer a positive user experience has also grown. Modern technology in the healthcare system provides patients with better, more comfortable, and safer service. But for this to work, the technology needs to be user-friendly. User-friendliness holds the key to the success of these apps and gadgets in the long run. Henceforth, UI/UX designers and researchers are brought together to understand and work on how the app and gadgets can be well designed and solve user’s problem.

UI/UX designer in healthcare does not differ from UI/UX designer from other domain but their ultimate goal is to create a positive user experience that will lead to stronger user engagement on the product or service. The only significant difference is that UI/UX designers play a significant role in helping hospitals, medical agencies, nonprofits, businesses, and other healthcare institutions effectively and efficiently serve their customers and patients. Good healthcare UI/UX design can connect patients with professionals to make more informed decisions and strengthened the relationship between patient and physician, giving the patient a clear upper hand to win their fight against disease. Moreover it can also reduce human errors via improvements in diagnosis such as better analysis of scans, images, and test results. Here are some of the examples for top 10 trends in 2023 for UX healthcare - digital products for mental health and telepsychology, medical wearables, Telehealth (Telemedicine + Remote patient monitoring), virtual and Augmented Reality, Voice User Interfaces and many more.

Various new technology are being introduced in the healthcare market, their presence and importance will continue to increase in the healthcare industry. No matter on what your product or service is focusing on, a good user experience is essential for its success and integrity in improving the well-being of people. However, the UX design itself can still make or break the experience. If you want to develop a comprehensive user experience that invites in previously underserved audiences and give them value in the form of care options, then you must consider adaptability as well as accessibility.

Faculty and Student Achievements



S.E. students Mr. Megh Mhatre, Mr. Tejas Panchal and Ms. Anvita Agarkar participated in Medical Device Hackathon (MEDHA-2023).

Tejas along with this group members consisting of doctors and design engineers won the first prize in the competition.

1. S.E. students Ms. Naushin Qureshi and Ms. Shravani Desai participated Wellness and Medical Value Tourism Conclave on 14<sup>th</sup> June 2023.
2. Prof. Geetha Narayanan completed a workshop on Circuit design using Cadence Virtuoso.

THE EDITORIAL TEAM

PROF. ARUNKUMAR RAM  
Chief Editor