

Department of Biomedical Engineering
KPR Institute of Engineering and Technology



KPR Institute of Engineering and Technology

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"We are Engineers for Doctors"

Biomedical Engineering is one of the premier Engineering disciplines among technocrats since it merges Healthcare Technology with Electronics and Software technologies including Artificial Intelligence, Machine Learning, Robotics in Medicine, Bioinformatics, Prosthetic Engineering etc. to serve better to the human community with advance and continuously upgrading technologies. In KPRIET, we nourish our students with advance laboratories like Bio-signal processing, Diagnostics and Therapeutic Equipment, Human Anatomy and Physiology, Biomedical Instrumentation to learn by practicing. Hospital training and internship are arranged with leading multispecialty hospitals and biomedical industries to facilitate the students for better career. Research activities are vibrant with publications and patents in the recent trends.

Dr. K. S. Tamilselvan HoD/BME

Highlights of this month

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Quarterly Newsletter: Department of Biomedical Engineering

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About KPRIET

KPR Institute of Engineering and Technology (KPRIET), founded by Dr. K. P. Ramasamy, is one of the leading institutions of academic excellence by imparting technical, intellectual and professional skills to students. The Institution is ranked 100-150 band by NIRF. The institute, with its diverse and energetic community of students offers a distinguishing blend of some of the premium graduate, undergraduate and research programs, talented faculty, world class amenities and a residential campus set on a sprawling 150 acres of lush green campus.

While students at KPRIET immerse themselves in academics, the institute has a lot in store for them outside the classroom. Student life includes participation in sports, co-curricular activities and cultural. In short, at KPRIET, students will find an academic and social environment where everyone- from faculty members to peer's support shape their future. KPRIET is a home to artistically designed buildings with state of the-art computer and internet facilities, modern workshops, seminar halls, auditoriums and well stocked libraries, sports and games fields in addition to an indoor badminton court and gymnasium.

KPRIET has a faculty strength of 265 with a faculty student ratio of 1:15. Out of the total, 139 faculty members PhDs. and 95 are in the process of completing their PhDs. As an exemplary institution of learning, KPRIET follows an admission policy that strongly favours merit, even as it enables access to education for students from all strata of society through appropriate scholarships. The Institution boasts of a strong alumni network with alumni events held every year serving as a platform for past students to give back to KPRIET and share their experiences with its present fellow students.

About the Department

The Department of Biomedical Engineering of KPR Institute of Engineering and Technology, Coimbatore was established in the year 2017 with an annual intake of 60 students. The Department has highly qualified faculty members with Ph. D. and M.E. / M. Tech / M.S. under various specialize such as Biomedical Signal and Image Processing, Medical Electronics, Healthcare Data Analytics, Biomaterials, Regenerative medicine and Nanoscience. The total strength of the faculty members in the Department is thirteen. Out of which, 60% of the faculty Members (8 Faculty members) have completed their PhD and three faculty members are pursuing their PhD. The Department is accredited with Tier-1 NBA on July 03, 2024 for three years.

The faculty members contribute to academic development by publishing books / journals, products, patent filing and presenting papers in International and National Conferences. The Department of Biomedical Engineering signed MoUs with the reputed industries like Silicon systems, Royal Care Super Speciality Hospital, Aravind Eye Care Hospital, GEM Hospitals, Masonic Medical Centre for children and ALERT (NGO) to bridge the gap between theory and field practices.

The Department also provides an opportunity for students in improving practical knowledge in the field of Biomedical Engineering and Software skills like MATLAB, LabVIEW, Wokwi simulation through Centre of Excellence, in addition to Communication and Presentation skills. The students have to undergo Industrial Training and Industrial Visit to facilitate them to take up industrial live projects to understand the industry needs. The Students from Biomedical Engineering as well as faculty members has membership in various Professional Societies like BMESI and IEEE (EMBS) to gain knowledge through various programs conducted by these bodies across the Nation.

Vision of the Department

To be the **centre of excellence** for **dissemination of knowledge, research and development** in biomedical engineering to serve **society with moral values**.

Mission of the Department

The **Mission** of the Department is to

- Impart **value-based education** in biomedical engineering using **modern equipment and tools**.
- Build an **integrated team** of biomedical engineers to foster technologies through **research, development and innovation**.
- Provide **healthcare industries** with solutions imbibed **through lifelong learning** with **ethics and moral values**

Program Specific Outcomes

- PSO 1: Design and evaluate medical solutions using **biosensors, biomaterials, biomechanics, and diagnostic and therapeutic equipment** for the healthcare industries.
- PSO 2: Identify, analyze, solve and develop algorithms for addressing **healthcare** problems using the software skills acquired through **bio-signal and image** processing advancements.

Program Educational Objectives

Graduates of Biomedical Engineering, four years after graduation, will;

- PEO 1: Apply the knowledge gained from **biomedical engineering** to help solve the **technological problems in industries**
- PEO 2: Design and develop **healthcare products** and processes through continuous **skill upgradation and research**
- PEO 3: Demonstrate **professional and ethical standards** of behavior and commit to **lifelong learning** to meet the needs of society

Industry visits by the Department during August 2024

S. No.	Date of Visit	Name of the Industry visited by the faculty
1.	02.08.2024	ARIES BIOMED
2.	05.08.2024	FULFILL ELECTRIC CORPORATION
3.	14.08.2024	EMGLITZ TECHNOLOGIES
4.	17.08.2024	KOVAI MEDICAL CENTRE HOSPITAL
5.	21.08.2024	ARAVIND EYE HOSPITAL



EVENT - 1**INAUGURATION OF MEDICOSAPIENS AND BMESI FOR AY: 2024-25**

The Department of Biomedical Engineering The event "Inauguration of MedicoSapiens and BMESI for AY: 2024-25" was successfully held on 10.08.2024, marking the official start of the academic year's activities for both the MedicoSapiens student association and the Biomedical Engineering Society of India (BMESI) chapter. The inauguration included keynote speech on biomedical innovations, and discussions on the role of biomedical engineering in healthcare. The event highlighted the importance of interdisciplinary collaboration in advancing biomedical research and technology. The key outcomes are the emphasis on student participation in upcoming conferences, workshops, and projects to foster innovation and cooperation among scientists and engineers. The event served as a platform for students to connect with experts in the field, setting the stage for a year of active engagement in biomedical engineering initiatives.

**EVENT – 2****CONCLAVE ON MEDICAL SYSTEMS 2024**

Department of Biomedical Engineering conducted Medical Conclave on 10.08.2024 between 3pm and 4pm for the Students of Biomedical Engineering to enhance their Academic and Career knowledge. The Sessions were conducted at three venues with Guests from various hospitals in Coimbatore. Domains such as Gynaecology, Ophthalmology and General Medicine were discussed in the conclave. The Guests Dr. K.T. Manisenthilkumar, Chief Operating Officer of, Dr.R.Priyavadhana, Consultant Physiatrist & Rehabilitation Incharge, Royal Care Super Speciality Hospitals Dr. S. Sunetha, Medical Director at Ranjan Medical Centre and Hospitals and Dr. Ram Rammohan, Head of the Division of Laboratory Services at Aravind Eye Hospital, Coimbatore have interacted with students and shared their insights and expertise.



EVENT – 3

DESIGN THINKING CONTEST

The Engineering in Medicine and Biology Society (EMBS) of Institute of Electrical and Electronics Engineers (IEEE) KPRIET STUDENT BRANCH organized a Design Thinking Contest at KPR Institute of Engineering and Technology campus, Coimbatore for students from II and III year from different discipline from August 2, 2024, to August 9, 2024 through online. An event to showcase your innovative solutions and creative thinking skills through online mode gain insights from a distinguished expert.. The students were tasked to generate innovative solutions through Poster design and upload it in drive through Google form. The event was conducted in offline mode with 20 participants on 10.08.2024 at Biomechanics Laboratory. The Jury members Dr. Allwyn Gnanadas, Associate Head/BM and Dr. P. Arunkumar, Assistant Professor (Sr. G.), evaluated the Posters. The Winners and the Runner-up were announced at the event and awarded shields to them. The e-certificates were distributed to all the participants. Feedbacks were collected from students at the end of the event through google form, it will be incorporated into future events to enhance the effectiveness of the society.



Event-4

PREVENTING GASTRO AND LIVER ILLNESSES DOABLE PRACTICES

The Department of Biomedical Engineering in association with Indian Society for Technical Education Student Chapter (ISTE) and Industry Institute Partnership Cell (IIPC) organized a Guest Lecture on Preventing Gastro and Liver Illness - Doable practices by Dr.S.Soundappan, Consultant - Gastro Minimally Invasive and Liver Transplant Surgery, Royal Care Super Speciality Hospital, Coimbatore on 17.08.2024 at 10.30 AM for II BME students. The Session was very helpful and the Doctor had shared insightful knowledge and doable preventative steps to avoid Liver diseases. The students had an interactive session with the Guest and the feedback were collected from the students.



EVENT – 5

FIX A CIRCUIT

The Department of Biomedical Engineering, in collaboration with the Biomedical Engineering Society, successfully hosted the event "Build and Fix a Circuit" on 17th August 2024 at the DIC Lab. The event was designed to challenge participants' ingenuity and foster teamwork, aligning with the department's goals of practical learning and skill development. The event drew significant interest from students across various departments, with 38 students participating, grouped into 19 teams (each team comprising 2 members). The challenge tested students' ability to quickly and effectively build and troubleshoot electronic circuits. The event saw enthusiastic participation, with students demonstrating impressive problem-solving abilities. Teams collaborated effectively under pressure, showcasing the importance of teamwork in engineering challenges. The atmosphere in the DIC Lab was energetic, with teams working diligently to meet the circuit-building challenges.



EVENT – 6

SOLVE-A-THON

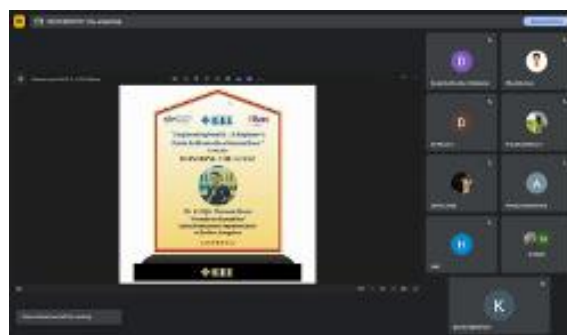
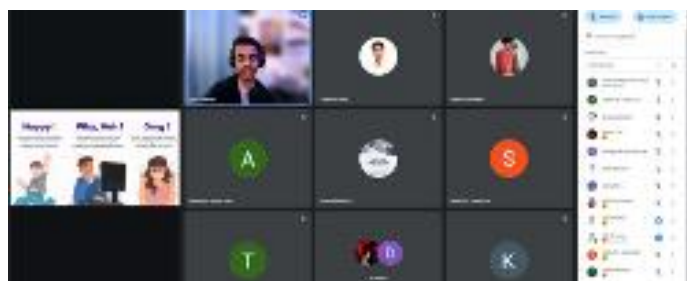
Department of Biomedical Engineering conducted Solve-A-Thon event on 31.08.2024 for Students of all branches of KPRIET. The Event started with delivery of instruction and the Questions with equal weightage to all the teams were provided. The teams were given one hour to complete the competition and Jury reviewed their work and evaluated based on four criteria. The final winner is announced immediately and awarded cash prize to the winner team.



EVENT – 7

WEBINAR ON ENGINEERING HEALTH: A BEGINNER'S GUIDE TO BIOMEDICAL INNOVATION

The event concluded with a discussion on the importance of GATE exams for career advancement in biomedical engineering. The ENGINEERING IN MEDICINE AND BIOLOGY SCIENCE SOCIETY OF IEEE KPRIET STUDENT BRANCH organized a webinar session on “Engineering Health: A Beginner’s Guide to Biomedical Innovations” on August 31, 2024, from 2:15 PM to 3:45 PM. The event was conducted in online mode and saw around 26 participants. Mr. Er Sijin Thomas Ninan, Founder of Biomed Bro and Sales Development Representative at ZocDoc, Bangalore, provided an insightful overview of the biomedical engineering field, discussing its significance and the various career opportunities it offers. The session provided a comprehensive overview of the essential core skills required for successful placements. He highlighted the importance of GATE exams for career advancement in this field. The lecture was covering various aspects, including biomechanics, biomaterials, bioimaging, tissue engineering, biomedical devices, biosignal processing, and neuroengineering. The guest speaker was honoured with an e-memento, and feedback was collected from participants to improve future events.



EVENT-8

TEACHER'S DAY CELEBRATION

Department of Biomedical Engineering celebrated Teacher's Day *September 5th) at Gitam Hall from 03:00 pm to 04:00 pm. The event started by welcoming the gathering, then with dance performance by students, fun games and video for faculty members, and the event came to end by a token of love from the students.



EVENT – 9CREATIVE CANVAS

IEEE EMBS conducted a Poster Designing event titled "Creative Canvas" on the occasion of Engineer's Day. The Competition was conducted through Online mode for almost 10 days from 06.09.2024 to 14.09.2024. The students are asked to submit a Poster based on SDG theme and submit it through Google form. A total of 25 teams have participated for the first round and out of which, 10 teams were shortlisted for the first round. The second round was conducted through online and posters are asked to send like first round. The Winner and Runner-up among the ten teams was selected by Prof. Manikandan Ponnusamy, Assistant Professor - Civil Engineering, Head - AWESOME, KPRIET. The Winners are provided with e-certificates by the IEEE EMBS Advisor Prof. R. Krishna Kumar, Assistant Professor/BM, KPRIET. The Shield for the Awardees are planned to give on IEEE day. The e-certificates for participants are provided and feedback was collected.



Students' Achievements & Participation

S. No.	Name of the Student	Year	Detail about the Achievement/ Participation
1.	Mr. VISHNU KRISHNA A	II	Attended Five-day CANVA BOOTCAMP in Let’s Upgrade through Online mode
2.			Participated in BLOOD DONATION at Sri Ramakrishna Hospital, Coimbatore.
3.			Participated in Creative Canvas, a Poster Design event conducted by IEEE – EMBS, KPRIET.
4.			
5.	Ms. AKSHAYA KB	III	Completed AR/VR CRASH COURSE at Machenn Innovations Pvt. Ltd., Coimbatore.
6.			Completed Online Certification course in Alison - BASICS OF MEDICAL BILLING AND CODING.
7.	Ms. THANIYARASI K		Attended AWS WORKSHOP at Reccar private limited through Online mode.
8.			Completed Online certification course in MATLAB - CONTROL DESIGN ONRAMP WITH SIMULINK.
9.	III-year BME Students		73/75 Students have completed Summer Internship In-plant trainings at various Hospitals and Core Industries.
10.	Ms. LITHYASHREE V and TEAM	IV	Won 2 nd prize in volleyball tournament which was conducted by KGiSL Institute of technology
11.	Ms. KAAVIYAH R		Participated in Biomed Nexus Workshop conducted at GKHM Hospital, Coimbatore.
12.			Participated in Independence Day Awareness Quiz conducted by Dhaanish Ahmed Institute of Technology, Coimbatore.
13.			Participated in Medical Equipment Electrical Safety Testing program conducted by World Health Organization (WHO).
14.			Participated in Leadership Development Program conducted by Jeppiar Institute of Technology, Sriperumbudur.
15.			Completed One month Internship at Foretec Electric India Pvt Ltd, Coimbatore.
16.	Ms. Priyadharshini K		Got Placement through Internship at Udhayam Medicare System, Coimbatore.
17.	Ms. Kanimozhi S		Got Placement through Internship at B-Arm Medical Technologies, Coimbatore.
18.	Mr. Sai Karthik V		Got Placement through Internship at MIRRAR Innovation Technologies Private Limited, Chennai.
19.	Mr. Sakthi Kumar K		Got Internship with Stipend at Imedfurns, Chennai.
20.	Ms. Rithan S		

21.	Ms. Naveena S		Got Placement through Internship at Tessolve Semiconductor Pvt Ltd, Coimbatore
22.	Ms. Lavanyashree N		Got Placement through Internship at AVASOFT
23.	Mr. Gowsick		Got Placement through Internship at SAHAYA ANNAI HOSPITAL, Madurai
24.	Mr. Kaliraj Kumar		Got Placement through Internship Melwin Garments, Coimbatore
25.	Mr. Saalsih Sulthan		Undergoing Three-month internship at IIT, Ropar.

Faculty Contribution

S.No.	Name of the Faculty member	Details of Contribution
1.	Dr. Ganeshkumar D, Professor /BM	Completed One Week Internship at Jay Pumps, Coimbatore.
		Attended National level WORKSHOP ON ASTRONOMY & ASTROPHYSICS at REGIONAL SCIENCE CENTRE, Chennai.
2.	Dr. P. Sreelatha, Professor/BM	Completed One Week Internship at Machenn Innovations, Coimbatore.
3.	Dr. T. Gayathri, AP-III/BM	Completed One week Internship at Medsby Healthcare, Coimbatore.
4.	Dr. P. Arunkumar, AP-III/BM	Completed One week Internship at Medsby Healthcare, Coimbatore.
5.	Mr. V. Bharath, AP-II/BM	Completed One week Internship at Silicon Systems, Coimbatore.
6.	Ms. Priya Darshini B. AP-I/BM	Completed One week Internship at Silicon Systems, Coimbatore.
		Completed One Week FDP ON COMPUTATIONAL THINKING AND PROBLEM SOLVING at Amrita Vishwa Vidyapeetham, Coimbatore.
7.	Ms. Kavitha S Senior Office Assistant	Completed Online Certification Course in Great Learning – PYTHON FUNDAMENTALS FOR BEGINNERS CHAT GPT FOR BEGINNERS
8.	Ms. Vincy Mary M, Lab Technician	Completed following Online Certification Course in Great Learning 1. INTRODUCTION TO MACHINE LEARNING 2. FORECASTING HOSPITAL BLOOD REQUIREMENT PART 1