

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. D. Ganesh kumar HoD/BME

Highlights of this month

Events

Guest Lecture on 08.03.2024 titled "Women's Health and Wellness"

Workshop on 22.03.2024 titled "MEDUINO'24": ARDUINO-LABVIEW INTEGRATION FOR MEDICAL DEVICE PROTOTYPING"

Fiesta – Department Events

Students' Achievement/ Participation

Faculty - Professional Development Activities

Monthly 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 (9 Faculty) have completed their PhD and four faculty members are pursuing their PhD.

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, Aravind Eye Care Hospital, GEM Hospitals, Ganga Medical Center and Hospital, 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 imbued **through lifelong learning** with **ethics and moral values**

Industry visits by the Department during March 2024

S. No.	Date of Visit	Name of the Industry visited by the faculty
1.	04.03.2024	Keltron Controls, Kerela
2.	06.03.2024	Medmall-Fastpill Healthcare Pvt Ltd.
3.	20.03.2024	Masonic Medical Centre for Children

	<p>Keltron Controls, Kerela</p>
	<p>Medmall, Arasur</p>
	<p>Masonic Hospital</p>

EVENT - 1**Guest Lecture on WOMEN'S HEALTH AND WELLNESS**

The Department of Biomedical Engineering in association with the Women Empowerment Cell (WEC) is celebrating International Women's Day by organizing an Expert Lecture by Dr. Kalaivani Logesh, Consultant Obstetrician and Gynaecologist, Royal Care Super Speciality Hospital, Coimbatore titled 'Women's Health and Wellness' on 8th of March, 2024. Dr. Kalaivani Logesh delivered an engaging and informative guest lecture on women's health and wellness, shedding light on crucial aspects for maintaining a healthy and balanced lifestyle. The lecture aimed to empower the audience with knowledge and promote proactive healthcare practices. She emphasized the importance of a holistic approach to women's health, considering physical, mental, and emotional aspects. The lecture covered various aspects of reproductive health, addressing topics such as menstrual health, proper diet and the importance of regular Gynaecological check-ups. Dr. Kalaivani Logesh stressed the need for open communication and awareness of vaccination for cervical cancer. She began by highlighting the importance of cervical cancer awareness. The lecture covered the risk factors, symptoms, and the significance of regular screenings, such as Pap smears and HPV vaccinations, in preventing cervical cancer. Attendees were educated on the early detection and treatment options available. She discussed about normal menstrual cycles, common issues, and when to seek medical advice. The importance of maintaining menstrual hygiene was emphasized, promoting overall reproductive health.



EVENT - 2**Workshop on “MEDUINO’24” : ARDUINO-LABVIEW INTEGRATION FOR MEDICAL DEVICE PROTOTYPING**

The workshop 'MEDUINO'24' aimed to provide participants with practical skills and insights into the integration of Arduino and LabVIEW for medical device prototyping. The hands-on sessions of the workshop were conducted with enthusiasm and engagement from all participants. The workshop commenced with an overview of Arduino microcontrollers and LabVIEW software, highlighting their applications in biomedical engineering and medical device development. Through guided tutorials and practical exercises, attendees were introduced to Arduino programming, LabVIEW interface development, and the seamless integration of these platforms for medical device prototyping. Participants gained a solid understanding of Arduino and LabVIEW, as well as their integration for medical device prototyping. Attendees developed practical skills in hardware-software integration, sensor interfacing, data acquisition, and signal processing. Feedback from participants was overwhelmingly positive, highlighted the workshop's effectiveness in enhancing their skills and understanding of Arduino-LabVIEW integration for medical device prototyping. The workshop concluded with participants leaving with enhanced skills, confidence in their abilities, and a deeper understanding of Arduino-LabVIEW integration in healthcare technology. Overall, 'MEDUINO'24' facilitated a dynamic learning environment, promoting innovation and knowledge exchange in biomedical engineering.



EVENT – 3 Fiesta Events

Fiestaa'24 – A techno cultural Institute level event was conducted on 27th and 28th of March, 2024. In phase of the same, each department had organized few technical events on their core domain for the external students.



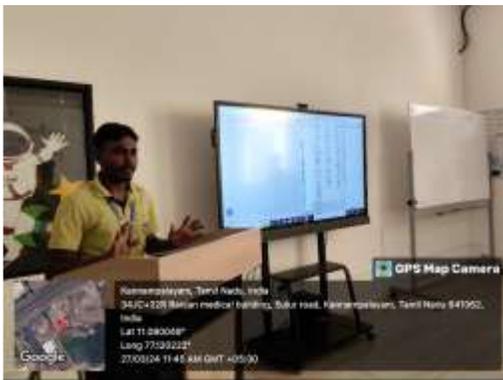
Event 1 – Paper Presentation

The Department of Biomedical Engineering organized the paper presentation event, The event started on 27.03.2024 by 9.45 am, totally six teams participated and three teams secured I II III places and cash awards worth of total 6000 were given to all the three teams. The first prize Rs.3000, Second prize Rs 2000 and the third prize Rs.1000. Mr.P.Vytheeshwar IV BME act as Student co-ordinator and Dr.D.Sudarvizhi and Dr.N.Rajasingam act as juries for the event. The first prize was awarded to Mr.D.Sarathy belong to Dr.Mahalingam college of Engineering and Technology, Pollachi and the second prize bagged by Mr.Gallis Raymond and Logapriyan P.B and they belong to Mahendra Engineering college and finally the third place was awarded to Mr.N.Ragunath, V.Srimathan and N.Dharaneeshwaran of SNS College of Technology, Coimbatore. The event was well organized and the feedback was collected by the participants and the winners were honored by cash awards and certificates by the Head of the department and All the registered participants were provided with the participation certificates.



Event 2 – Paper Presentation

The workshop began with an introduction to LabVIEW software, highlighting its features, capabilities, and applications in data visualization and analysis. Participants engaged in hands-on sessions where they learned to create various types of graphs and charts using LabVIEW. These sessions included practical exercises and demonstrations to reinforce learning objectives. Attendees learned techniques for visualizing data in real-time, including plotting data points on graphs, customizing graph appearance, and adding annotations and labels. Through hands-on sessions, attendees were guided through the process of creating dynamic graphs, charts, and visual representations of data using LabVIEW's powerful graphical programming interface. The workshop emphasized the importance of data visualization in research, industry, and academic settings, highlighting its role in facilitating data analysis and decision-making processes. Post-workshop feedback highlighted the effectiveness of the sessions in enhancing participants' ability to visualize and interpret data effectively using LabVIEW. The workshop 'GraphXperience using LabVIEW' provided participants with valuable skills and knowledge in graphical data visualization and analysis using LabVIEW. The hands-on sessions, practical exercises, and demonstrations facilitated active learning and skill development, empowering attendees to apply these techniques in their respective fields of work or study.



Event 3 – Project Expo

The department of biomedical engineering organized project presentation in FIESTAA 2024 on 28.04.2024 at KPR Institute of Engineering and Technology. The students effectively communicated the research objectives, methodology, and findings. The team demonstrated thorough understanding of the subject matter and engaged the audience with clear visuals and concise explanations. Commencing with a succinct introduction, they swiftly outlined the project's objectives and the methodologies employed. Throughout the presentation, they adeptly navigated complex technical concepts, employing a blend of clear visuals and articulate explanations to convey their findings comprehensively. Demonstrating a deep understanding of the subject matter, they seamlessly integrated theoretical frameworks with practical applications, captivating the audience's attention. Feedback from peers and instructors highlighted the project's originality and potential for further exploration. Key strengths included rigorous data analysis and well-supported conclusions. Overall, the presentation showcased the students' dedication and academic proficiency. The students adeptly navigated through intricate technical details, using clear visuals and engaging explanations to convey their findings effectively. The presentation concluded on a high note, leaving a lasting impression of the students' academic prowess and potential for future contributions in their respective fields.



Event 4 – Technical Quiz – ‘Pro-The Medico Data’

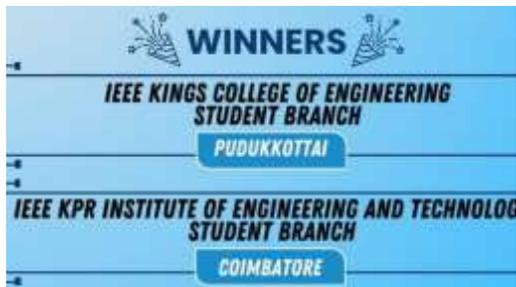
The Department of Biomedical Engineering at KPRIET organized the Pro-The Medico Data quiz competition on March 28, 2024, as part of the larger institute-level event, 'Fiestaa'24'. The competition attracted 24 participants who engaged in a rigorous challenge comprising 25 multiple-choice questions spanning general, engineering, and biomedical knowledge domains. After the initial round, the field narrowed down to 12 students forming 6 teams, showcasing their prowess in the second round. The intensity escalated as the top 6 teams advanced to the third and final round, where they battled for top honors. Judging was based on a combination of scores from both the second and third rounds. The competition culminated with the announcement of winners. The first, second, and third prize winners were awarded cash prizes of 1500, 1000, and 500, respectively. Additionally, all participants received certificates of achievement and participation as tokens of appreciation for their dedication and efforts. Through such initiatives, the Department aimed not only to promote healthy competition but also to cultivate a passion for biomedical engineering among students, encouraging them to delve deeper into the field and contribute to its advancements.



Students' Achievements – Technical / Non-Technical/Sports

S. No.	Name of the Student	Year	Detail about the Achievement
1.	Ms. Neha Nesnas B	IV	Won I prize in Elevate YP – presentation event conducted by IEEE Madras
2.	Ms. Lithyashree V	III	Won III prize in Volleyball Tournament conducted at Sri Eshwar College of Engineering, Coimbatore
3.	Ms. Priyadharshini K Ms. Rayma R S		Won III Prize in STARTUP IDEA PRESENTATION at Karpagam Institute of Technology, Coimbatore
4.	Mr. Valli Nayagam V Mr. Kishore Kumar M Mr. Mohammed Irfan	II	Won I prize in INFINIX PAVILION and MASTERSTROKE MARKETPLACE events conducted by Sri Krishna College of Technology, Coimbatore
5.	Mr. Bishnu Thakur Mr. Bijaya Niroula Mr. Rahul Kumar Yadav		Won III prize in MEDRINO2K24 event conducted by Rajalakshmi Engineering College, Chennai
6.	Ms. Bhavatarini D Ms. Karthi Srinithi V		Won I prize in ACUMEN'24 - A National Level Technical Symposium conducted by Kongu Engineering College, Coimbatore
7.	Ms. Aishwarya K		Won III prize in VARUNAH 24 event conducted by Kathir college of Engineering, Coimbatore
8.	Mr. Ragul V		Won I prize in Power lifting conducted by Rathinam Institute of Engineering and Technology, Coimbatore
9.	Mr. Valli Nayagam V		Won I prize in Mini Mod Sim event conducted by NGP Institute of Technology, Coimbatore

Gallery



Ms. Neha Nesnas B, IV BM



**Ms. K. Priyadharshini, III BM,
Ms. R S Rayma, III BM**



Ms. V. Lithyashree, III BM



**Ms. Bhavatarini D, II BM
Ms. Karthi Srinithi V, II BM**



**Mr. Bishnu Thakur
Mr. Bijaya Niroula
Mr. Rahul Kumar Yadav**



**Mr. Valli Nayagam V, II BM
Mr. Kishore Kumar M, II BM
Mr. Mohammed Irfan, II BM**

Faculty -Professional Development Activities

S.No.	Name of the Faculty member	Activity
1.	Mr. R. Krishna Kumar, Assistant Professor/BM	Presented Paper on Second International Conference on Artificial Intelligence And Machine Learning Applications (AIMLA)