

JERUSALEM COLLEGE OF ENGINEERING
(An Autonomous Institution, Affiliated to Anna University & Accredited by NAAC 'A' Grade)

DEPARTMENT OF BIOMEDICAL ENGINEERING
(Accredited by NBA)

7TH BOARD OF STUDIES MEETING

MINUTES OF THE MEETING

Date: 9 May, 2025 (Friday)

Venue: Conference Room, First Floor, Main Block,
Jerusalem College of Engineering,
Pallikaranai, Chennai - 600100.

Board: Biomedical Engineering

Agenda:

1. Approval of **Syllabi** of courses offered in III & IV year under **R-23**
2. Revised list of **External & Internal Examiners**
3. **Best Practices** followed by the Department

7th Board of Studies meeting for the Department of Biomedical Engineering was held at the JCE campus on 9 May, 2025 (Friday) by 10.00 a.m. The members of boards of BME and ECE are mentioned below.

S.no	Name of the Member	Role Description	
1	Dr. J. Samuel Manoharan Head of the Department	Department of Biomedical Engineering, Jerusalem College of Engineering, Pallikaranai, Chennai - 600100.	Chairperson
2	Dr. M. Manikandan Professor	Department of Electronics Engineering, MIT Campus, Anna University, Chennai - 600044.	Anna University Nominee
3	Dr. K. Thayalan Principal	Radiation Physics Department, Dr. Kamakshi Institute of Medical Sciences & Research, Pallikaranai, Chennai - 600100.	Subject Expert
4	Dr. C. Tharini Professor & Dean	School of Electrical & Communication, Crescent Institute of Science and Technology, Vandalur, Chennai - 600048.	Subject Expert
5	Mr. Ganesh Balasubramanian Senior Deputy Director	Amphenol Antenna Solutions Inc., Chennai - 603209.	Industry Expert
6	Ms.P.N.Saranya Senior Project Manager	Siemens Technology and Services Pvt Ltd, DLF Corporate Park, GST Road, Perungudi, Chennai - 600091.	Alumni - BME (2010-14)

The Chairman - BME welcomed the Distinguished Board Members, Principal, Deans and Heads, Faculty members for the 7th Board of Studies meeting.

1. Consideration and Approval of Syllabus offered in semester 5 to 8, under R-2023

The Chairman listed syllabus of the courses to be offered in the 3rd and 4th year under R-2023 for B.E. Biomedical Engineering.

The following points were suggested by the board members:

Semester 5 - Diagnostics and Therapeutic Equipment

- Dr.M.Manikandan suggested that recent reference books shall be added
- Dr.K.Thayalan suggested that department-wise applications shall be added in any of the 5 units
- Dr.C.Tharini suggested to frame course outcome according to the contents that is framed in the syllabus

Semester 5 - Biomedical Signal Processing

- Dr.C.Tharini suggested that basic waveform generation shall be listed as the first experiment and filter based experiments shall also be added.
- Ms.P.N.Saranya suggested that topics on applications of IIR/FIR in Cath Lab can be added
- Dr.M.Manikandan advised to add text books/ reference books and syllabus specifically for biomedical signal processing.
- It was suggested that while adding NPTEL course links, the name of the course shall also be specified.

Semester 5 - Medical Physics

- Dr.K.Thayalan suggested that the topics related to Ultrasound Instrumentation shall be addressed in DTE and related applications in this subject. Also, he advised to add regulatory aspects in unit 5 and to add the topic 'KERMA' in unit 1.
- Dr.M.Manikandan suggested to reframe the course outcome in this subject and to add more recent editions in reference list.

Semester 5 – Microprocessors and Microcontrollers

- Mr. Immanuel Rajkumar suggested to add 32-bit processors in unit 1.

Semester 6 – Medical Image Processing

- Dr.C.Tharini suggested some AI based topics shall be added in the list of experiments.
- Dr.K.Thayalan suggested that topics on recent technological applications in imaging in unit 5 shall be added.
- Dr.M.Manikandan suggested some domain specific experiments shall be added in the list of experiments
- Dr.K.Thayalan suggested that fusion technology shall also be added as recent topics

Semester 6 – Radiological Equipment

- Dr. K.Thayalan suggested that the title of unit 4, as nuclear medicine imaging. Also, topics under hybrid imaging shall be elaborated.

Semester 6 – Virtual Instrumentation Laboratory

- Dr. K.Thayalan suggested that the title of unit 4, as nuclear medicine imaging. Also, topics
- Ms.P.N.Saranya suggested that topics on fundamentals of Biopython can be implemented in any of the theory subject, as Biopython is preferred for 40% of biosignals analysis, compared to IIR/FIR filters.

Semester 6 – Product Development Laboratory

- Dr.C.Tharini suggested some topics can be made as mini project based, as the students will get exposed to hands-on working. Also she suggested that Module 2 shall concentrate on fundamentals of designing.

The suggestions listed by the board members were incorporated in the respective subjects.

Annexure 1: Syllabus of Semester 5 to 8 offered under R-2023

2. Ratification and Approval of revised panel of Internal and External examiners to be forwarded to the Academic Council

The Chairperson presented the list of internal and external examiners to the members.

- Dr.M.Manikandan suggested to add around 50 faculty members from various universities, across the nation.

Annexure 2: List of Internal and External Examiners

3. Best Practices followed in the Department

The Chairperson listed out different pedagogical initiatives and innovative methods for teaching and evaluation along with the list of activities which were completed during the last academic year.

End Remarks:

Ms.P.N.Saranya that students be more extensively exposed to industry-related curriculum to ensure their skills are continually updated and aligned with industry requirements. Additionally, career guidance sessions conducted by industry professionals should be integrated into the course to better prepare students for employment.

Mr. Immanuel Rajkumar suggested that the curriculum should be designed to be industry-ready, focusing on hands-on learning and product development. This approach will enhance their practical skills and prepare them for real-world engineering challenges

Dr. K.Thayalan suggested that students be encouraged to gain hands-on experience with a wide range of biomedical devices. To support this, institutions may consider procuring outdated or decommissioned medical equipment from hospitals for educational purposes, enabling students to observe and study real systems in detail. Regular visits to medical equipment manufacturing and installation facilities should be arranged each semester to provide students with exposure to industry

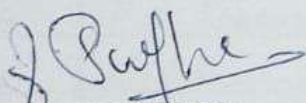
practices. He also suggested that establishment of a radiation laboratory within the Biomedical Engineering department for experience related to radiological technologies and safety

Dr.C.Tharini suggested that faculty and students can undergo more certified programs on Entrepreneurship Development course, so that faculty from the same department can handle the paper. She also suggested industry specific core training shall also be planned.

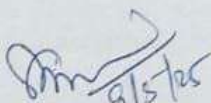
Dr.M.Manikandan suggested that e-lectures/seminars/guest lectures shall be delivered by alumni for knowledge on core specific fields. He also encouraged more alumni from industry shall be invited for sharing their experience.

Additional Remarks:

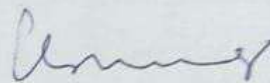
The meeting concluded with the Chairperson expressing gratitude to all members for their presence and valuable suggestions, assuring them that these would be incorporated and forwarded to the Academic Council.



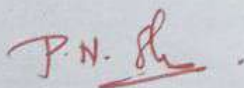
CHAIRPERSON
(Dr. J. Samuel Manoharan)



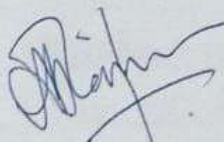
SUBJECT EXPERT 1
(Dr.C.Tharini)



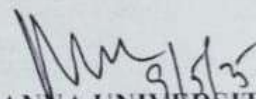
SUBJECT EXPERT 2
(Dr. K. Thayalan)



ALUMNI EXPERT
(Ms. Saranya P.N)



INDUSTRY EXPERT
(Mr. Immanuel)



**ANNA UNIVERSITY
NOMINEE**
(Dr.M.Manikandan)