



B.M.S. College of Engineering, Bengaluru-19

(Autonomous Institute, Affiliated to VTU)

Department of Medical Electronics Engineering

Value Added Course Report



A comprehensive Project-Based Value Added Course on “Computational Learning of Programming, Signal Processing, Code Generation, App Building with MATLAB and Simulink” held between October and December 2025. The program spanned three months, aimed at bridging the gap between academic theory and industrial application in medical instrumentation and signal processing.

The course was designed to provide students with hands-on expertise in using MathWorks tools specifically for healthcare technology.

- **Duration:** October 2025 – December 2025
- **Target Audience:** Students of Medical Electronics Engineering
- **Resource Organization:** MathWorks Training Services
- **Total Participants:** 53 Students

Key Modules Covered:

- **Medical Signal Processing:** Filtering and analyzing ECG, EEG, and PPG signals.

- **Medical Imaging Toolbox:** 3D image segmentation and registration of MRI/CT scans.
- **Model-Based Design:** Developing control logic for therapeutic devices like ventilators and infusion pumps.
- **Regulatory Compliance:** Understanding IEC 62304 standards for medical device software.

The concluding ceremony was held on **March 10, 2026**, at the Department Computer Lab. The event celebrated the hard work of the students and their proficiency in the software suite.

- **Certification:** Certificates of Completion were awarded to all students who maintained 80% attendance and successfully passed the final assessment.
- **Keynote Address:** **Dr Anand Mukhopadhyay** highlighted the importance of simulation in reducing clinical trial risks and evaluated the projects

Awards and Recognition

As part of the course, students were required to submit a capstone project. On **March 10, 2026**, the following winners were announced based on innovation, technical depth, and practical feasibility:

Top 3 Best Projects

Rank	Project Title	Team Members
1st	Intelligent Posture Monitoring System	Aisiri prasad Yuvraj Jain Sadashiv
2nd	Joint Angle Signal Analysis - Rehabilitation Progress Tracker	Prapthi Prabhakar Venkat
3rd	Smart early stress detector	Tisha Hereford Swasthik G Achar

In recognition of their commendable effort and creative approach, two teams received consolation prizes:

1. **Project:** Drug Infusion Control System– Sriharshaa Padmakumar and MD Maaz Nabeel
2. **Project:** Fault Detection and Protection of Transmission Lines Using Simulink.– Aditya Sri Vasishta and Manasi M

The Value-Added Course has significantly enhanced the technical competency of our students, making them more industry-ready for the biomedical sector. The collaboration with MathWorks provided students with insights into professional-grade simulation and validation workflows.