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WORKSHOP - Signal Processing Applications using MATLAB

The department of **Electronics and Communication (Advanced Communication Technology)** organised a **Workshop** titled **Signal Processing Applications using MATLAB** on **23-10-2025** from **10 AM**, in **Room No. 152**.

The resource persons for the workshop were Dr Anand Mukhopadhyay, Senior Engineer - Education Team at MathWorks, Bangalore and Mr Avinash Vulasa, Application Engineer, CoreEL Technologies, Bangalore. A total of 37 students from the Department of Electronics and Communication (Advanced Communication Technology) had attended the workshop.

Objectives of the Event

The primary objectives of the event were:

- To provide practical exposure to signal processing concepts using MATLAB.
- To enable students to analyse, filter, and visualise signals through hands-on exercises.
- To enhance students' technical proficiency in using MATLAB and encourage interactive learning through expert-led sessions and demonstrations.

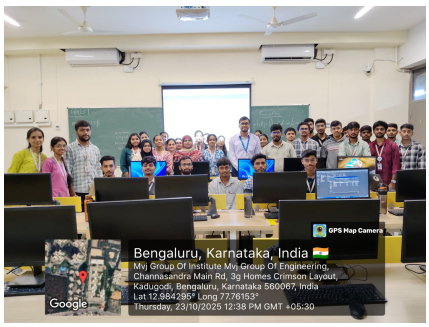
Event Overview

The workshop was organised to provide students with a practical understanding of signal processing concepts using MATLAB. Through hands-on sessions, students gained experience in analysing, filtering, and visualising signals, implementing common digital signal processing (DSP) techniques, and working with real-time data.

The forenoon session commenced at 10:00 AM, led by Dr Anand Mukhopadhyay, Senior Engineer from the Education Team at MathWorks, Bangalore. Dr Mukhopadhyay introduced the fundamentals of signal processing using MATLAB, emphasising the importance of simulation and visualisation in understanding core DSP concepts. He guided students through various MATLAB tools and functions, demonstrating

how to generate and manipulate signals, apply filters, and interpret results effectively.

(a) Dr Anand engaging the forenoon session



(b) Group photo

Figure 1: Forenoon Session

The afternoon session of the workshop was conducted by Mr. Avinash Vulasa, Application Engineer at CoreEL Technologies, Bangalore. This session focused on advanced applications of signal processing using MATLAB. Mr Avinash guided students through a series of hands-on certified modules. Students were engaged in structured exercises aligned with certified training content, enhancing their understanding and boosting their confidence in using MATLAB for engineering tasks.

(a) Mr Avinash's session in the afternoon

Outcomes and Impact

- Students gained hands-on experience in applying signal processing techniques using MATLAB, bridging the gap between theory and practice.
- Completion of certified hands-on modules added value to students' technical profiles

- The workshop encouraged active participation, problem-solving, and collaboration among students.

Conclusions

The MATLAB-based Signal Processing Workshop successfully provided students with a comprehensive and practical understanding of key DSP concepts. Through expert-led sessions and certified hands-on modules, participants were able to bridge the gap between theoretical learning and real-world application. The involvement of industry professionals from MathWorks and CoreEL Technologies enriched the learning experience and offered valuable insights into current trends and tools used in signal processing.

Report by: Prof. Sheher Banu S., Head of the Department -EC(ACT), MVJCE