



7-DAYS SELF-SPONSORED HYBRID MODE SHORT-TERM COURSE  
“HANDS-ON MACHINE LEARNING FOR BIOMEDICAL SIGNAL  
PROCESSING” 24 JUNE - 30 JUNE 2024

### About ABV-IIITM Gwalior

ABV-IIITM Gwalior is a premier institute incepted by MHRD, Government of India, in the year 1997 as a center of excellence in the field of Information Technology and Management. It is NAAC 'A' certified and has also been declared as an institute of national importance by the Government of India. It is located in the city of Gwalior in the northern part of the state of Madhya Pradesh, India. The Institute's activities aim to develop a culture of inquiry and research through a highly competitive academic environment and close interaction between the Institute and the corporate world. For more information, please visit: <https://iiitm.ac.in/>

### About the Department

The department of Electrical Engineering is established with the vision to design technologies and nurture technologists for diverse and sustainable growth in electrical engineering, leading to wealth and welfare of humanity. The department offers various UG and PG programmes with the mission to develop a platform for forging students as technocrats in line with cutting-edge academic, research and modern industrial practices, and enhancing their aptness in any technical sectors across the globe.

### Objective of the Course

The objective of this course is to acquaint students with the foundational principles of machine learning (ML) techniques applicable across diverse biomedical signal processing scenarios. It will cover a range of mathematical methodologies intrinsic to ML, empowering students to construct and refine their own models effectively. Emphasizing mathematical principles, the lectures will incorporate coding assignments for practical implementation. **No prior familiarity with ML is necessary.** The course will concentrate on biomedical signal processing and its applications, aligning theoretical discussions accordingly.

### Who can Attend?

This is a program designed for students, research scholars, professionals, faculty members, and others with an interest in machine learning and biomedical signal processing. The applicants are also welcome but not limited to B.E./B.Tech., B.Sc./M.Sc., BCA/MCA, BBA/MBA, M.E./M.Tech., Ph.D., Academicians and working professionals from start-ups, MSMEs, and others.

### Topics to be Covered (but not limited to)

- Introduction to Machine Learning Fundamentals for Biomedical Signal Processing
- Supervised Learning Techniques for Biomedical Signal Classification
- Unsupervised Learning Methods for Biomedical Signal Clustering and Analysis
- Deep Learning Architectures for Biomedical Signal Feature Extraction
- Feature Engineering and Selection Strategies for Biomedical Signal Data
- Model Evaluation and Performance Metrics in Biomedical Signal Processing
- Time-Frequency Analysis and Spectral Methods in Biomedical Signal Processing
- Anomaly Detection and Abnormality Identification in Biomedical Signal Data
- Transfer Learning Approaches for Biomedical Signal Processing Tasks
- Optimization Techniques for Enhancing Machine Learning Models in Biomedical Signal Processing
- Integration of Machine Learning with Traditional Biomedical Signal Processing Techniques
- Real-Time Biomedical Signal Processing Using Machine Learning Algorithms
- Case Studies: Machine Learning Applications in Biomedical Signal Processing
- Ethical Considerations and Privacy Issues in Machine Learning for Biomedical Signal Processing

### Course Details

Mode of the course: Online/Hybrid

Timings:

Session 1: 11:00 AM - 12:30 PM

Session 2: 2:30 PM - 4:00 PM

E-Certificate will be provided to all the participants

### Bank Details

#### Bank Account Details

Account Name: Director, ABV-IIITM, Gwalior

Account Number: 945210110009380

Name of the Bank: Bank of India

IFSC Code: BKID0009462

Bank address and Branch IIITM branch, Gwalior

#### Chief Patron:

Prof. Sri Niwas Singh  
Director, ABV-IIITM Gwalior

#### Patron:

Prof. Manisha Pattanaik  
HOD, Dept of EEE

#### Course Coordinators:

Dr. I. A. Ansari, ABV-IIITM Gwalior

Dr. Vinal Patel, ABV-IIITM Gwalior

Dr. Binod Prasad, ABV-IIITM Gwalior

### Resource Persons

Faculty members from IITs, IIITs and NITs etc. and Industry experts shall deliver lectures and hands-on.

### Registration Details

Registration Link:

[https://docs.google.com/forms/d/e/1FAIpQLSc\\_W7HndicofoOGcp4y-x4zI7Jentf54kLhGuVcO-BHhWi5rg/viewform?usp=sf\\_link](https://docs.google.com/forms/d/e/1FAIpQLSc_W7HndicofoOGcp4y-x4zI7Jentf54kLhGuVcO-BHhWi5rg/viewform?usp=sf_link)

### Registration Fee\*:

- Students (UG/PG/PhD): INR 500/- (Online)
- Academicians/Faculty Members: INR 800/- (Online)
- Industry Person: 1500/- (Online)
- Offline Participants: 5000/- (Offline mode-Including food and accommodation)

\*GST is included in the registration fee.

### Contact us:

Email: [jaansari@iiitm.ac.in](mailto:jaansari@iiitm.ac.in), [vp@iiitm.ac.in](mailto:vp@iiitm.ac.in), [binod@iiitm.ac.in](mailto:binod@iiitm.ac.in),

Phone No.: +91-9109106995, +91-9586288218, +91-7001940890

**REGISTRATION IS OPEN**