



# Atal Bihari Vajpayee-Indian Institute of Information Technology and Management, Gwalior

(An Institute of National Importance, Ministry of Education, Govt. of India)



## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

SERB Sponsored Workshop (Hybrid mode)

on

## Emerging Tools and Techniques for 6G Wireless Communication

FEBRUARY 21-25, 2025

### About the Institute

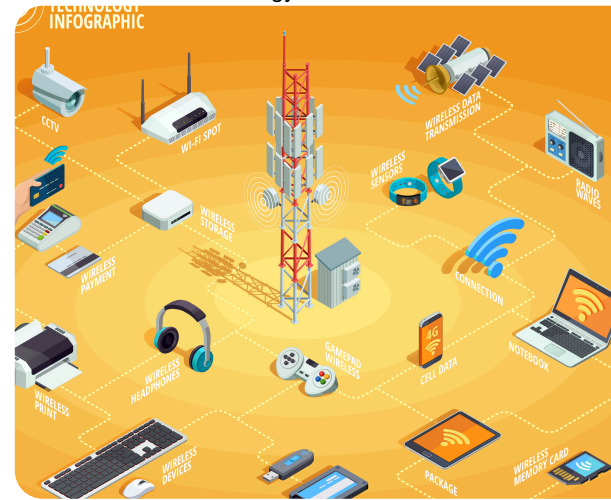
Atal Bihari Vajpayee-Indian Institute of Information Technology and Management, Gwalior, is a premier institution for higher education and research in the fields of information technology and management. Established by the Government of India, it focuses on grooming professionals with a blend of technical expertise and managerial skills. The institute offers undergraduate, postgraduate, and doctoral programs, fostering innovation and entrepreneurship among its students. With state-of-the-art facilities, experienced faculty, and industry collaborations, ABV-IIITM Gwalior aims to produce leaders capable of addressing contemporary challenges in technology and management domains.

### About the Course

The current era has witnessed the application of wireless technology in different sectors of the society in terms of smart healthcare, connected cars, unmanned aerial vehicle (UAV), Internet of things (IoT) etc. Such exponential growth in use of wireless based application resulted large number of nodes. 5G technology evolved to provide connectivity for such a large variety of wireless technology. However, even with the advancement of 5G technologies, billions of nodes remain disconnected from reliable and high-quality internet services. This is primarily because of a lack of convergence in technologies that provide robust and resilient connectivity solutions. This workshop aims to address these challenges by focusing on the recent development of 6G technologies and the use of machine learning. Several key technologies, such as Intelligent reflecting surface (IRS), machine learning, cognitive radio, and novel multiple access techniques, will be covered in this workshop. Primarily, the focus of this workshop is to appraise the knowledge of faculty, students, researchers, and industry persons with the fundamentals of these emerging wireless technologies to be employed in 6G and beyond 6G networks.

### About the Department

The Department of Electrical and Electronics Engineering, established in 2022, is dedicated to fulfilling the institute's mission. Engaged in teaching and research, it focuses on various areas including VLSI, SoC design, AI Chip design, IoT, wireless communication, and power system. Currently offering M.Tech. in VLSI and Embedded Systems, and Ph.D. programs in diverse fields such as signal processing and wireless communication. Faculty members actively participate in outreach activities, organizing workshops, conferences, and collaborations. The department is involved in numerous government-sponsored research projects, contributing significantly to the advancement of technology.



### Topics to be covered

- Fundamentals of Wireless Communication
- 6G architecture and standard
- Fundamentals of Machine Learning
- Machine Learning Applications in Wireless Communication

- Cognitive Radio Networks
- Multiple Access Techniques
- IRS assisted Wireless Communication
- Deep Learning for Channel Estimation
- Recent Development in Antenna Design

### Who Can Apply?

This is a program designed for students, research scholars, professionals, faculty members, and others with an interest in wireless communication and the application of machine learning in communication. The applicants are also welcome but not limited to B.E./B.Tech. (Final Year), M.Sc., M.E./M.Tech., Ph.D., working professionals from start-ups, MSMEs, and others.

### Resource Persons

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

### Course Detail

**Mode of the course:**  
Online/Hybrid

#### Timing:

From 21st to 25th Feb.  
Session 1: 11:00 – 12:30 PM  
Session 2: 02:30 – 04:00 PM

E-Certificate will be provided to all the participants.

**Last date of registration is**  
**19 February, 2025**

#### Chief Patron

**Prof. S. N. Singh**

Director ABV-IIITM Gwalior

#### Patron

**Prof. Manisha Pattanaik**

HoD, Dept. of Electrical and Electronics Engineering

#### Program Coordinator

**Dr. Binod Prasad**

Assistant Professor  
Dept. of Electrical and Electronics Engineering  
ABV-IIITM Gwalior

#### Program Co-coordinator

**Dr. Vinal Patel**

Assistant Professor  
Dept. of Electrical and Electronics Engineering  
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**Dr. Pragya Swami**

Assistant Professor  
Dept. of Electrical and Electronics Engineering  
ABV-IIITM Gwalior

#### Contact us:

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### Registration Link:

<https://forms.gle/qVzDKSemXRoLZutw7>

**There is no registration charge to attend the program.**



**Scan to Register**