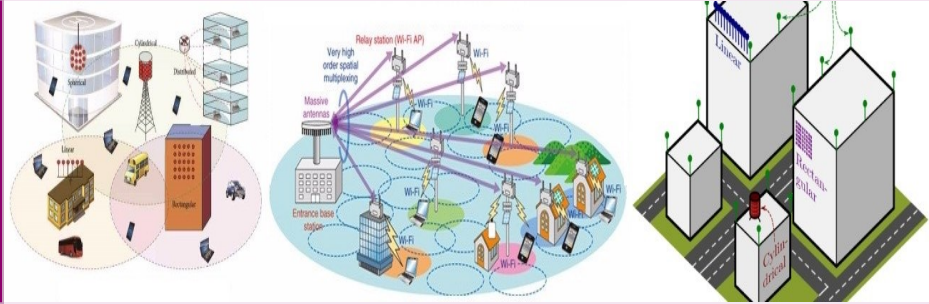


Organized by Prof. Aditya K. Jagannatham, EE Department , IIT Kanpur in association with
ECE Department, Andhra University College of Engineering, Visakhapatnam

January 6th - 10th , 2020

MATLAB Project Course on Massive MIMO, Cooperative Communication and Cognitive Radio for 5G in Visakhapatnam



Important Dates

Course Dates
January 6th - 10th , 2020

Last Date for Registration
December 19th , 2019

Venue

ECE Department
University College of
Engineering
Andhra University
Visakhapatnam - 530003

Contact

Prof. Aditya K. Jagannatham
Department of
Electrical Engineering
IIT Kanpur
Kanpur 208016
UP, India

E-mail

iitk5G.vizag@gmail.com

5G wireless technology aims to provide extremely high data rates with support for massive device density and ultra-low latency. **Massive Multiple-Input Multiple-Output (Massive MIMO)** is a cutting edge technology that can significantly enhance the throughput while also supporting a large number of users. In addition, **Cooperative Communication** systems have been shown to achieve significantly high communication rates in high speed broadband wireless systems due to their ability to form virtual (MIMO) transmit and receive arrays. Further, **Cognitive Radio (CR)** systems and networks are a revolutionary concept in wireless communications, which allow a set of unlicensed/ secondary users to opportunistically access unused spectrum bands licensed to primary users. CR is designed to meet the spectrum scarcity caused by the proliferation of devices and applications. Together these technologies can achieve multiple goals such as higher speeds, increased connectivity, range extension and dynamic spectrum allocation in 5G networks.

This 5-day course will provide engineers, faculty members, under-graduate/post-graduate students and research scholars with an in depth technical exposure to 5G Massive MIMO, Cooperative Communication and Cognitive Radio technologies. The modular approach will provide the participants with a comprehensive introduction to various concepts such as Massive MIMO, Precoding/ Beamforming, Channel Estimation, Pilot-Contamination, Spatial Modulation, Cooperative Diversity, Optimal Power Allocation, Spectrum Sensing, CR Transmission, Game Theory and others. All the classes will be conducted in “classroom” style towards building up the various theoretical aspects beginning with the fundamentals, together with problem solving sessions to further enhance and consolidate understanding. Also, a full day interactive **MATLAB implementation module** will introduce the participants to the practical implementation and simulation aspects of such systems, especially from the perspective of conducting research.

Target Audience

- Ph.D. scholars pursuing research in 5G technologies.
- M.Tech/ B.Tech students undertaking thesis/ projects in 5G technology.
- Faculty members of Engineering Institutions/ Universities.
- Engineers from Wireless Industry and R&D Organizations.

For more details and registration information, visit the website
<http://www.iitk.ac.in/mwn/vizag/>