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27th December, 2018

Dear HOD/ Professor

A short course titled "**Mini-Project Course in Hyderabad on MU-MIMO, Massive MIMO and OFDM Technologies for 5G Networks**" is being organized by IIT Kanpur from 27th to 30th March 2019, *in association with ECE Department., University College of Engineering, Osmania University, Hyderabad.* Multi-User MIMO, Massive MIMO and OFDM are key technologies for the realization of 5G wireless networks. This course is geared towards B.Tech/ M.Tech/ Ph.D. students, faculty members and industry participants. The course program includes detailed lecture/ tutorial modules together with Mini-projects in MATLAB. Lecture notes, tutorial assignments, solutions and MATLAB code will be provided to the participants. A partial list of topics intended to be covered is given below

1. Introduction to MIMO Systems
2. Channel Estimation for MIMO Systems
3. Multi-user MIMO Wireless Systems
4. Introduction to Massive MIMO
5. Generalized Spatial Modulation
6. Rate Scaling/ Spectral Efficiency of Massive MIMO
7. Channel Estimation for Massive MIMO
8. Spectral Efficiency with Imperfect CSI
9. Multi-Cell Massive MIMO, Pilot Contamination
10. Introduction to OFDM Technology
11. IFFT/ FFT Processing for OFDM
12. MIMO OFDM and Transceiver Architecture
13. PAPR Techniques for OFDM Systems
14. Mini Project 1: Channel Modeling and BER Performance
15. Mini Project 2: Multi-Antenna Wireless Systems, Multi-User MIMO
16. Mini Project 3: Massive MIMO Systems, Spatial Modulation
17. Mini Project 4: OFDM, IFFT/ FFT Processing, MIMO-OFDM

I request to kindly display the enclosed course flyer in your institution. More details regarding the course can be found at URL below

https://www.iitk.ac.in/mwn/hyderabad/index.html

Thanking you,

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