

Organized by : Department of Electrical Engineering, IIT Kanpur
&
BSNL-IITK Telecom Center of Excellence, IIT Kanpur

**Short Course
on
Optimization for
Communications &
Machine Learning**



Important Dates

Course Dates

March. 28th - 30^h 2018

Last Date for Registration

Feb. 28th, 2018

Venue

*Seminar Hall
Pioneer Batch Building
IIT Kanpur*

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Convex Optimization has emerged as a powerful tool for a wide variety of applications in wireless communications and networks. It has attracted a significant interest in research and industry due to the development of advanced techniques such as interior-point methods, which have resulted in reliable and efficient procedures to solve large scale complex optimization problems. Recently, several novel convex optimization techniques have been successfully developed for cutting edge wireless communication applications which have led to a significant impact in the context of MIMO/ OFDM based 4G/5G wireless systems, Cellular Network Optimization, Compressive Sensing, Sensor Selection/ Localization for Wireless Sensor Networks amongst others.

The aim of this course is to provide an in depth exposure to practicing engineers, faculty members and graduate students to the latest research and applications of convex optimization techniques, specifically in the area of modern wireless communications, signal processing and networking research. Beginning with a brief overview of the basic concepts of convex sets, functions and duality, this course will comprehensively cover several new applications of convex optimization in wireless communications such as power control for CDMA networks, Beamforming for MIMO wireless systems, Compressive Sensing, Rate Maximization etc. A key aim of the course is to enable students to recognize convex optimization problems arising in these areas and develop low-complexity solutions for problems frequently encountered in practical scenarios. A MATLAB based demonstration session will introduce the participants to the tools and techniques available in modern convex optimization solvers for the above applications.

Target Audience

- Practicing wireless system engineers.
- Graduate students pursuing research in wireless communications.
- Teachers of government and private engineering colleges.

For more details and registration information, visit the website

<http://www.iitk.ac.in/ee/convex>