



About Prof Sumit Roy

Prof. Sumit Roy (Fellow IEEE) received the B. Tech. degree from the Indian Institute of Technology (Kanpur) in 1983, and the M. S. and Ph. D. degrees from the University of California (Santa Barbara), all in Electrical Engineering in 1985 and 1988 respectively, as well as an M. A. in Statistics and Applied Probability in 1988. His previous academic appointments were at the Moore School of Electrical Engineering, University of Pennsylvania, and at the University of Texas, San Antonio; presently he is Integrated Systems Prof. of Electrical Engineering, Univ. of Washington where his research interests include analysis/design of communication systems/networks, with a diverse emphasis on various technologies: wireless LANs (802.11) and emerging 4G and beyond 4G standards, multi-standard wireless inter-networking/coexistence and cognitive radio platforms, vehicular and underwater networks, and sensor networking involving RFID technology.

He spent 2001-03 on academic leave at Intel Wireless Technology Lab as a Senior Researcher engaged in research and standards development for ultra-wideband systems (Wireless PANs) and next generation high-speed wireless LANs. He served as Science Foundation of Ireland Isaac Walton Fellow during a sabbatical at University College, Dublin (Jan-Jun 2008) and was the recipient of a Royal Acad. Engineering (UK) Distinguished Visiting Fellowship during summer 2011. He has published over 100 archival journal and 140 conference publications and his research has been consistently funded by various US agencies and industrial organizations. He was elevated to IEEE Fellow by Communications Society in 2007 for his "contributions to multi-user communications theory and cross-layer design of wireless networking standards". His activities for the IEEE Communications Society includes membership of several technical and conference program committees (notably Technical Committee on Cognitive Networks). He has served as Associate Editor for all the major ComSoc publications in his area at various times, including the IEEE Trans. Communications and IEEE Trans. on Wireless Communications and currently serves on the Editorial Board for IEEE Trans. Circuits & Systems-II Express Briefs. His other notable professional activities include reviewing proposals for various international research panels (Singapore, HongKong, Qatar, Greece, Portugal etc.) and serving as external examiner for Ph.D. thesis (Singapore, Australia, Israel, Canada etc.).

About IIT Hyderabad

Inventions and innovations are key words on which the foundation of IITH is based. One of India's eight new IITs – IITH started functioning in August 2008. Currently it has 1050 students in total and offers undergraduate programs in four disciplines, M.Sc in Chemistry and Physics, M.Tech in six disciplines and PhD in 11 disciplines.

The first faculty at IITH joined in 2009 and as of today IITH has 150 faculty members. In a short span of three years, IITH has developed state-of-the-art infrastructure for advanced research and produced more than 400 publications in internationally reputed journals.

Research is a culture among the faculty and students of IITH. This is evident from the several research projects that are ongoing at IITH. On top of the gamut of sponsored projects from various funding agencies, IITH has active collaboration with industry as well.

IITH also has an innovative academic program where the students are offered fractional credits and the first semester undergraduates are allowed to do a project of their choice. Many more innovations in the academic front are in the offing. IITH always strives to offer an innovative environment where one is not afraid to experiment with high-risk ideas.

<http://www.iith.ac.in/>

For details please contact:

Prof. Mohammed Zafar Ali Khan
Coordinator - GIAN Course on Spectrum Sharing in Next Generation Wireless Networks



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GLOBAL INITIATIVE ON ACADEMIC NETWORK (GIAN)

5 Days Course on

Spectrum Sharing In Next Generation Wireless Networks

5th to 9th September 2016

Venue



INDIAN INSTITUTE OF TECHNOLOGY HYDERABAD
<http://www.iith.ac.in/~gian/>

Overview

The course will be novel in the Indian context as it will provide a new take on next generation wireless networks from the perspectives of Spectrum Sharing. As such, it will achieve multiple objectives: **Provide sufficient in-depth introduction to the following next-generation networking technologies:** 4G and Beyond 4G Cellular Networking Concepts (LTE-Advanced, Massive MIMO, Gigabit Wireless LANs, Heterogeneous Networks) **Introduce principles and methods of Coexistence/Spectrum Sharing:** Cognitive Networking: Software Defined Radios, Dynamic Spectrum Access and finally tying the above together with

Case Studies of Spectrum Co-existence

- TV White Space Networking
- LTE/LAA 802.11 Co-existence
- Radar 802.11 Co-existence

Course Objectives

The course is intended for a cross-section of academic post-graduate students and research staff as well as industry/research labs personnel whose businesses and technologies intersect with these topics of growing significance. As such, it will introduce research scholars to research themes that will dominate academic scholarship for the foreseeable future. Simultaneously, this is a time of rapid technology evolution on multiple fronts in wireless networking, and there is a great need in India to provide such timely information that track emerging global standards and network architecture evolution trends for working engineers in industry and Govt. labs. This course is thus expected to have **multiple** benefits – suggest more technologically relevant problems for post-graduate research so as to synchronize and benchmark Indian academic outputs globally, and improve future workforce with a view to enable contributions to global (telecommunications) standards via IP creation.

Profile and Number of Participants

The course is aimed at post graduate students, Scientist from DRDO labs, Engineers from the armed services and Faculties from local engineering colleges. The maximum number of participants for the course shall be limited to 50.

Benefits of Attending the Course

Persons who have attended the course and followed the material should benefit in strengthening their background in the following areas:

- a) Provide sufficient in-depth introduction to the following next-generation networking technologies:
4G and Beyond 4G Cellular Networking Concepts (LTE-Advanced, Massive MIMO, Gigabit Wireless LANs, Heterogeneous Networks)
- b) Introduce principles and methods of Coexistence/Spectrum Sharing:
Cognitive Networking: Software Defined Radios, Dynamic Spectrum Access and finally tying the above together with
- c) Case Studies of Spectrum Co-existence
 - TV White Space Networking
 - LTE/LAA 802.11 Co-existence
 - Radar 802.11 Co-existence

Evaluation and Grading

There will be evaluations on the understanding of the concepts by the participant made during the course. Based on the evaluations finally a letter grade will be awarded to the participant. A completion certificate shall also be issued.

Course Contents

Review of Fundamentals of Wireless Networks:
Propagation/Channel Models, Link and Network Design

System architecture for 4G and beyond cellular networks, Small Cells and Heterogeneous Networks, Gigabit WLANs

Principles and Methods of Spectrum Sharing:
Dynamic Spectrum Access and Cognitive Radios

Course will comprise of some in-class exercises that amplify the course material - based on instructor provided problem (some papers/references will be provided on Day 1 for attendees to read) along with software and potentially involving Internet search for next steps etc.

Attendees will identify ONE possible problem in this space relevant to their interests, conduct initial exploration and present a short report on final day.

Important Dates

Last date for receiving applications	01 Sept 2016
Intimation to participants	05 Sept 2016
Course Dates	05-09 Sept 2016

Registration Fee**

Faculty from Academic Institution :	Rs 10,000
For participants from industry :	Rs 20,000
For students*	Rs 1,000
Foreign Delegates	USD 500

(*ID proof to be submitted)

Registration

For registration send a mail to above address with subject "GIAN course Spectrum Sharing in Next Generation Wireless Networks: Principles, Analysis & Case Studies".

The registration fees can be paid to
Account Name: IIT Hyderabad R&D
Account Number: 30859878032
IFSC code:SBIN0014182
Name of the Bank:SBI
Account type: Current

A scanned copy of the receipt should be included in the registration mail along with the registration form.

Last date for registration is 1st September 2016 and acceptance is on first-come-first basis.

Course Co-ordinator: Prof. Mohammed Zafar Ali Khan

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