Advanced Radar System Design and Signal Processing

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Overview

A course on radar systems is very pertinent in the current phase of technical development both nationally and internationally. Internationally many interesting radar systems are being designed. These are mostly systems that have been in conceptual phase. Fall in hardware prices and the advent of many open-source initiative has made it possible to bring down the design costs and hence this new upsurge in the investigation of new radar systems. Internationally, there has also been an increased interest in launching radar satellites. Almost every major space agency is planning to launch a radar satellite in the next five years. In the national arena, radar system design has been one of the fortes of DRDO and ISRO. DRDO has designed some of the earliest phased array radar systems in the world. Systems like short-range radar (BFSR-SR) have been in the international media. Similarly ISRO's Radar Imaging Satellite (RISAT) has taken India to the elite club of very few countries possessing a radar imaging satellite. In addition to this again because of fall in the price of RF components many studies are going on to invent new uses of radar system predominantly in civilian applications.

This course is a follow-up course of an introductory course named "Radar System Design & Signal Processing" which was run through a GIAN funding at IIT Hyderabad in January 2016. Later scientists from a range of aerospace related DRDO laboratories and industries have expressed interest in running an advanced course in radar system design and signal processing. This is the motivation behind the current course. It is aimed at experienced and practicing engineers working in the domain of aerospace, students who have attended the introductory course, postgraduate students and teaching faculties from other engineering colleges.

Modules	**A: Revision of Radar Signal Processing : December 18-19** **B: Synthetic Aperture Radar & MIMO Radar : December 20-21** **C: Automatic Target Recognition : December 22** **Number of participants for the course will be limited to fifty.**
You Should Attend If…	▪ you are an electronics engineer or research scientist interested in designing radar for any usage. ▪ you are an entrepreneur and want to venture into the design of radar systems. ▪ you are a postgraduate student or faculty from academic institution interested in learning how to do research on radar system or subsystem. ▪ you are an undergraduate student desirous of gathering some exciting knowledge and some hands-on design experience over the winter vacation.
Learning Outcomes	By the end of the course, the attendees will be able to: • Appreciate the major signal processing steps that happen in most of the common radar systems; • Design the blocks of a synthetic aperture radar system given its user requirements; • Appreciate the challenges and potentials of MIMO radar Know some algorithms used in recognising targets from radar return Design target recognition algorithms for radar signal based target recognition
Fees	The participation fees for taking the course is as follows: **Participants from abroad : US $500** **Industry/ Research Organizations: Rs 20,000** **Academic Institutions: Rs 5,000** **Students: Rs 2,000** The above fee includes all instructional materials, computer use for tutorials and assignments, laboratory equipment usage charges, 24 hr free internet facility. The participants will be provided with accommodation on payment basis. Also, group discount is available for groups of 3 or more persons.

The Faculty

Prof. Amit Kumar Mishra has been a radar researcher since 2003. He has worked in different organizations and projects (both in India and abroad) related to radar system design and signal processing. He has taught postgraduate level course on radar system design and signal processing for more than six years in South Africa (University of Cape Town) and Australia (Australian National University). In his eight years of academic career he has published more than 18 journal papers in the area of radar system design and signal processing and is inventor or co-inventor in more than six patents.

Course Co-ordinator

A/Prof. Vimal Bhatia
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Registration

For registration send a mail to above address with subject "GIAN course on Radar".
The registration fees can be paid to
Account Name: IIT Indore Project & Consultancy A/c
Account Number: 1476101027440
IFSC code: CNRB0001476
Name of the Bank: Canara Bank
Account type: Savings
and a scanned copy of the receipt should be included in the registration mail along with the registration form.
Last date for registration is 15th December **2017 and acceptance is on first-come-first basis.**
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