Institute of Space Technology, Islamabad

Offers Intensive Workshop in collaboration with

University of Arkansas, Little Rock, USA in

Engineering Design Optimization

01-09 Aug, 2018 (0900-1700hrs) - Video Conference Room, IST

Overview

Engineering design process translates customer requirements into product development having optimal performance. This involves problem definition, design proposal and timely implementation through application of analytical, mathematical and computational techniques. This workshop will address cover the engineering design process with emphasis on mathematical modeling, simulation and optimization through variables/constants. This involves description of the problem statement into set of mathematical statements in which the performance variables are subjected to set of constraints. The final outcome is the optimal design solution that best describes the electrical, mechanical, materials and aerospace systems i.e UAVs etc. in operational environments.

Learning Objectives

- Engineering design process from conception to completion/ casting into mathematical optimization problems.
- Linear/ non-linear, convex and other optimization problems through mathematical modeling/ numerical techniques.
- Engineering optimization problems having constraints using computer algorithm.

Topics Covered

- Design goals and specifications
- Engineering design process
- Design for optimization
- Formulating the optimization problem
- Linear/ nonlinear, convex and other problems
- Computational algorithm for optimization
- Optimization with discreet variables.
- Particle swarm optimization
- System optimization
- Case studies and examples of industrial systems

Principle Speaker and Chief Coordinator*:

- **Professor Kamran Iqbal** (UoA) obtained his PhD and MS degrees in Electrical Engineering from Ohio State University and BE degree in Avionics Engineering from NUST-CAE. He has held several academic positions at NUST, GIKI, Ohio State University, Northwestern University, University of California, and University of Arkansas. His research interests include control and dynamic systems and computational intelligence, syen.ualr.edu/kxiqbal/.

- **Professor Zaffar M. Khan*** (IST) obtained his Postdoc, PhD, MS in aerospace composites from Iowa State, Salford University and Wichita State University in collaboration with British Aerospace, Aerospatiale and NASA. He has held several academic/ research positions at Iowa State University, Salford University, NUST and NESCOM. He is presently Professor and Director General (Research, Innovation and Commercialization) at IST, www.ist.edu.pk/cacss

Who can attend?

This course will be held for graduate students in electrical, mechanical, and aeronautical engineering, as well as practicing engineers, scientists and project managers having strong background in linear algebraic method.
Note: *This workshop carries 1.0 CPD Point for Engineers*

Registration Fees. *Rs. 20,000/ person for professionals, Rs. 5,000/ person for students through online registration at www.ist.edu.pk/oric/pdc*

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