SMART MATERIALS AND INTELLIGENT SYSTEM DESIGN

PROF. BISHAKH BHATTACHARYA
Department of Mechanical Engineering
IIT Kanpur

TYPE OF COURSE : Rerun | Elective | UG/PG
COURSE DURATION : 4 weeks (21 Feb'22 - 18 Mar'22)
EXAM DATE : 24 Apr 2021

INTENDED AUDIENCE : People aiming to explore advance areas.
PRE-REQUISITES : Basics of Nature and Properties of Materials, Linear algebra
INDUSTRIES APPLICABLE TO : Aerospace, Automobile, Manufacturing industries

COURSE OUTLINE :

Smart Structures and Intelligent System are becoming an integral part of new aerospace and automobile systems due to high performance and fast response potential. Knowledge in this field is multi-disciplinary in nature involving materials, composites, basic electronics, control system and informatics. In this short course, I intend to convey the core flavor of the field by introducing the basic concepts behind such system along with some industrial applications developed in the SMSS laboratory of IIT Kanpur.

ABOUT INSTRUCTOR :

Prof. Bishakh Bhattacharya is currently Dr. Gurumukh D. Mehta and Veena M. Mehta Chair Professor at the Department of Mechanical Engineering and joint faculty at Cognitive Science and Technology, IIT Kanpur. His research interest primarily lies in vibration control, structural health monitoring, energy harvesting system, intelligent system design and Child-Reconfigurable Robot Interaction. He is the coordinator of Space Technology Cell, IIT Kanpur and head of the SMSS (Smart Materials, Structures and Systems) Laboratory.
http://home.iitk.ac.in/~bishakh/

COURSE PLAN :

Week 01 : Introduction to Smart Materials
Week 02 : Mechanics of Composite Materials
Week 03 : Induced Strain Actuation Mechanisms
Week 04 : Intelligent System Design