

# Smart Material, Adaptive Structures and Intelligent Mechanical Systems - IITK - Web course

## COURSE OUTLINE

Module 1: Overview of Smart Materials  
Module 2: Modelling of Smart Materials  
Module 3: An introduction to Composite Materials  
Module 4: Mechanics of Composite Materials  
Module 5: Actuators & Sensors based on HBLS Smart Materials  
Module 6: Intelligent Devices based on Smart Materials

## COURSE DETAIL

NIL

## References:

- Gauenzi, P., Smart Structures, Wiley, 2009
- Cady, W. G., Piezoelectricity, Dover Publication, 1950
- Crawley, E. F., Intelligent Structures for Aerospace: a technology overview and assessment, AIAA, 33 (8), 1994, pp. 1689-1699
- Analysis and Performance of Fiber Composites, Agarwal, B.D. and Broutman, L. J., JohnWiley & Sons.
- Mechanics of Composite Materials, Jones, R. M., McGraw Hill
- Structural Analysis of Laminated Composites, Whitney, J. M., Technomic
- Nonlinear Analysis of Plates, Chia, C., McGraw-Hill International Book Company



NP-TEL

# NPTEL

<http://nptel.iitm.ac.in>

## Mechanical Engineering

### Pre-requisites:

Solid mechanics, control systems

### Coordinators:

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