BACKGROUND

Advanced composite materials with high specific stiffness and strength are widely being used for aerospace applications and other high performance engineering structures. In addition to the advanced composites, the concept of the smart structures incorporating piezoelectric, magneto-restrictive materials & Shape memory alloy has appeared to enhance the structural performance. In recent years, micro-devices utilizing piezoelectric effects have been widely used in many electromechanical applications. The performance of such devices usually depends on static & dynamic behaviors of piezoelectric elements or structures significantly. However, due to coupling effect between electrical and mechanical fields, the problems of piezoelectric smart structures are more complicated than pure mechanical ones. Numerous modeling and analyses have been performed to investigate the response of smart structures.

The participants will be benefited after attending state-of-the-art lecturers and hands-on experience covering both the theoretical and computational aspects of smart composite structures. The course will enable the participants to understand fundamentals of elasticity, composite materials & structures and enrich their knowledge about the recent developments and future trends in this field. This will help them to improve their teaching and research capabilities in these areas.

COURSE CONTENTS

Stability & Dynamics of Smart Composite Structures

- Analysis of 3-D Stress & Strain, Constitutive relations
- Mechanics of Composite Materials
- Smart Materials
- Stability of Composite Structures
- Dynamic Analysis of Composite Structures
- Smart Composite Structures
- Analytical Methods & Numerical Methods (FEM) of Analysis of Smart Composite Structures
- Software Application
- Future Research Directions

The course contents will be covered through power-point presentations, interactive sessions, group discussions, brain storming sessions, *etc.* Laboratory classes shall be conducted to provide hands-on experience on ANSYS software.

RESOURCE PERSONS

Faculty from MNNIT- Allahabad, guest resource persons from other premier institutions/ research organizations will deliver lectures.

COURSE MATERIAL

Lecture notes and reference material will be provided either in printed form/ CD-ROM.

IMPORTANT DATES

- Receipt of application by: **June 23, 2008.**
- Intimation about selection by: **July 30, 2008.** (On Institute web site: www.mnnit.ac.in)
- Confirmation by the participants: **July 05, 2008.** (by e-mail to course coordinator)

ELIGIBILITY

The candidate should have B.E./ B.Tech. in Civil, Mechanical, Production & Industrial, Aerospace Engg., Material science & Engg., Biomedical Engg. Preference will be given to the candidates having higher qualifications.

COURSE FEE

No course fee will be charged from the faculty members of AICTE recognized Engineering Colleges/ Institutions. However, they have to send a Demand Draft of Rs.200/- for registration which is **fully refundable** unless they fail to attend the course.

Professionals from industry are welcome to participate with payment of Rs. 7000/- for the course.

All payments should be made through **demand draft** payable at Allahabad and drawn in favour of **Director, M.N.N.I.T., Allahabad**.

TA/ DA AND ACCOMMODATION

Eligible teacher candidates would be provided TA limited to 3rd AC by shortest route for attending the programme as per AICTE norms. Suitable arrangement will be made to accommodate these participants at MNNIT Campus free of cost. TA/DA, boarding and lodging will have to be borne by the industry participants.

APPLICATION FORM

AICTE/ MHRD Sponsored SDP

on

Stability & Dynamics of Smart Composite Structures (SDSCS)

July 14 – 26, 2008

Name: ……

Destination: ……

Department: ……..

Institute/
Organization: ……

……

Experience (in Years): .....

Address: ....…….....

……..……..……

Tel. No.: …….

Mobile No.: ….……

e-mail: .....……...

Educational Background (B.E./ B.Tech. onwards):

Degree	Branch	Institute	Marks	Year
……..	……..	……	…….	..….
……..	……..	……	…….	..….
……..	……..	……	…….	..….

Areas of Research Interests:

Kindly register me for SDP on **Stability & Dynamics of Smart Composite Structures** to be held at MNNIT- Allahabad during July 14-26, 2008.

Place: ……
Date: ……. **Signature of Applicant**

Interested candidates can pre-register by sending the filled application form by e-mail in advance to course coordinator, if they anticipate delay in sending the form through proper channel.

SPONSORSHIP CERTIFICATE

Mr./Ms./Dr. ……., an employee of our institute/ organization is sponsored to attend the summer school on **Stability & Dynamics of Smart Composite Structures** from July 14-26, 2008 at MNNIT Allahabad .

Signature of Sponsoring Authority
Office Seal

Name:
Designation:

PAYMENT DETAILS

DD No.: …….. dated: ……
Amount: ……..
Drawn at: …….

ADDRESS FOR COMMUNICATION

Dr. K.K.Shukla
Course Coordinator, SDP on SDSCS
Professor, Department of Applied Mechanics
Motilal Nehru National Institute of Technology
Allahabad- 211 004. U.P.
Tel: 0532- 2271206 (O). Fax: 0532- 2271200.
Mobile: +919415317139.
e-mail: kkshukla@mnnit.ac.in

OR

Prof. A.K. Mishra
Course Director, Summer Schools
School of Non Formal and Continuing Education
Motilal Nehru National Institute of Technology
Allahabad- 211 004. U.P.

For further updates, please visit to:
http://www.mnnit.ac.in/advertisment/snfce_fdp.htm

About MNNIT

Founded as Motilal Nehru Regional Engineering College by Pt. Jawahar Lal Nehru in 1961 as providers of high quality technical manpower especially to Indian industry and to be pace-setting institution for development of technical education in the region. It has constantly grown and crossed many milestones during its journey of more than four decades towards academic excellence. Now, it has been reincarnated as Motilal Nehru National Institute of Technology, a Deemed University in 2002 with a view to set higher standards of academic performance, become a lead institution with international recognition in technical education. It offers nine undergraduate courses and 22 postgraduate courses in engineering and technology, besides MMS and MCA and doctoral programmes in wide areas of specialization. The institute possesses several modern facilities and offers a congenial environment for research and development activities in almost all the major fields of engineering. MNNIT campus is situated at about 8 km from main railway station on Allahabad-Lucknow highway.

About Department of Applied Mechanics

The Department of Applied Mechanics offers four M.Tech. programmes including M.Tech. Aplied Mechanics as weell as Ph.D. programme in the field of Composite Structures, Solid Mechanics, Materials Science, Fluid Mechanics and allied areas.

About ALLAHABAD

The *Kumbh nagri* Prayag, known as Allahabad is situated at the confluence of the sacred rivers the Ganga, the Yamuna and legendary Saraswati. The present name was given to the city by the Mughal Emperor Akbar in 1583. This city enjoys a glory of its own in the religious, cultural, education and political history. Its grandeur has attracted throughout the ages, not only the common people, but also great monarchs, religious leaders, philosophers and scholars. Allahabad has number of places of cultural and historical importance like Sangam, Bhardwaj Asharam, Fort, Khushroo Bagh, Alfred park, Anand Bhawan, Museum etc. It is on Delhi–Howrah rail link and NH-2. Allahabad is main junction of North Central Railway having direct links to Delhi, Howrah and Mumbai.

AICTE/ MHRD Sponsored

Staff Development Programme

On

Stability & Dynamics of Smart Composite Structures

July 14 –26, 2008

Patron:
Prof. Arun Baran Samaddar
Director

Chairman:
Prof. Rakesh Mathur
Head, Department of Applied Mechanics

Course Coordinator:
Dr. K.K.Shukla
Professor, Department of Applied Mechanics

Organised by

Department of Applied Mechanics
Motilal Nehru National Institute of Technology
Allahabad (U.P.)- 211004, India