

## INTRODUCTION

An exhaustive course on **STRUCTURAL INTEGRITY AND RELIABILITY** is offered from December 23-27, 2019 at Motilal Nehru National Institute of Technology Allahabad. It is sponsored by Technical Education Quality Improvement Programme – Phase - III (TEQIP-III) under twinning activity. The course is designed to cater the needs of teachers from Engineering Colleges, Scientists and Practicing Engineers from industries. This programme will be beneficial for persons who are concerned with either teaching and / or industrial applications of life prediction and reliability of structural components under service conditions.

## OBJECTIVES

Structural integrity is the science and technology of the margin between safety and disaster. Proper evaluation of the structural integrity and safe life of any structure (aircraft, ship, railways, bridges, gas and oil transmission pipelines, etc.) is important to ensure the public safety, environmental protection, and economical aspects. Catastrophic failure of any structure can be avoided if structural integrity is assessed and necessary precautions are taken appropriately.

Structural integrity of engineering components and structures in power, defence, aerospace, chemical and other industries is important, as it entails determining the performance, durability and safety of components under operating conditions. By proper structural integrity assessment, safety, reliability and cost saving can be achieved. Structural integrity domain is highly multi-disciplinary encompassing, design, materials evaluation, material selection, stress analysis, fabrication, joining, quality assurance, microstructure characterization, corrosion, non-destructive evaluation, damage mechanics, failure analysis etc.

## COURSE CONTENTS

- Material Selection for Design
- Material Characterization.
- Numerical modelling and validation
- Structural Integrity Assessment
- Fatigue and fracture mechanics
- Thermo-Mechanical Fatigue
- Creep and creep-fatigue interaction
- Fabrication technology of composite and polymers
- Corrosion and coatings
- Non-destructive evaluation and quality assurance
- In-service inspection, remote handling and robotics
- Structural health and condition monitoring
- Reliability and regulatory aspects
- Life prediction and life extension

In addition to the lectures, the program shall also have Industry visit, MNNIT Labs visit and group discussion.

## SPEAKERS

The faculty will be drawn from MNNIT, IITs, other premier institutions and industries.

## About MNNIT Allahabad

Conforming to its motto 'SIDDHIRBHAWATI KARMAJA' Motilal Nehru National Institute of Technology Allahabad is churning out engineers entrepreneurs and social scientists of sterling worth. Today MNNIT stands as an epitome of excellence, knowledge and achievements. The foundation stone of the Institute was laid by Late Pd. Jawaharlal Nehru, the first Prime Minister of India on May 3, 1961 and inaugurated by Late Shri Lal Bahadur Shastri, the second Prime Minister of India on April 18, 1965. Situated at the confluence of three mighty Indian rivers: Ganga, Yamuna and Saraswati, MNNIT boasts of a rich and diverse cross-cultural environment with students coming across the national and

around the globe for various undergraduate, post graduate and doctoral programmes. The Institute has been selected as a Lead Institution under World Bank Funded Government of India Project on Technical Education Quality Improvement Programme (TEQIP) (2002-2007). KNIT Sultanpur a state level institution is networked with MNNIT Allahabad under this project.

## About KNIT Sultanpur

KNIT was initially established as the Faculty of Technology in the year 1976 by Kamla Nehru Memorial Trust. Later, in the year 1983 it was registered as a separate society and renamed as the Kamla Nehru Institute of Technology. The Institute is one of the leading technical Institutions of the region and produces top-grade engineers with skill sets comparable with the best in the world. Being fully aware of its social responsibilities and the addressing the issue of application of technology to industry, it also renders the testing and consultancy services to the neighbouring industries and various other agencies. The Institute is academically autonomous institute, affiliated to Dr. A.P.J. Abdul Kalam Technical University (formerly Uttar Pradesh Technical University) Lucknow.

## SELECTION & COURSE FEE

Participants: Faculties, Research Scholars, M.Tech., B.Tech. students and personnel from industries.

Course fee (excluding lodging fee)

Students: ₹ 1500/-;

Academicians: ₹2,500/-;

Persons from Industry: ₹5,000/-

The applications should reach the course coordinator latest by November 30, 2019. All payments should be made through bank transfer (NEFT/RTGS) in favour of "STC-SIR2019". The list of the selected candidates will be displayed on the MNNIT website. Selected candidates will also be informed through email.

**REGISTRATION FORM**  
**Motilal Nehru National Institute of**  
**Technology Allahabad**

**A Course on**  
**STRUCTURAL**  
**INTEGRITY AND**  
**RELIABILITY**  
**December 23 to 27, 2019**

Name: .....

Designation: .....

Department: .....

Institution/Organization: .....

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Years of Experience: .....

Address: .....

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E-mail: .....

Telephone No.: .....

Fax No. : .....

Mob. No.: .....

Qualification (Highest Degree): .....

Area of Research Interest: .....

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**Payment Details**

Account Name: STC-SIR2019,

Account No. 718401013000015

IFSC: VIJB0007184, Vijaya Bank,

MNNIT Allahabad Branch.

Date & Ref. No. of Bank Transfer .....

.....

Amount in Rs.....

**Sponsored / Forwarded by**

Name .....

Designation .....

Organization .....

➤ Signature of applicant .....

Signature of Head of the Institution/  
Head of the Department with seal



**PATRON (S)**

Prof. Rajeev Tripathi, Director, MNNIT  
Allahabad

Prof. J. P. Pandey, Director, KNIT  
Sultanpur

**CHAIRMAN (S)**

Prof. A. D. Bhatt, Head, Department of  
Mechanical Engineering, MNNIT  
Allahabad

Prof. J. P. Pandey, Head, Department of  
Mechanical Engineering, KNIT  
Sultanpur

**COURSE CONVENER (S)**

Prof. Kailash Narayan Pandey,  
Department of Mechanical Engineering,  
MNNIT Allahabad

Dr. Akhilesh Kumar Chauhan,  
Department of Mechanical Engineering,  
KNIT Sultanpur

**COURSE COORDINATOR (S)**

Dr. Dharmendra Kumar Shukla, MNNIT  
Allahabad

Dr. Sunil K. Gupta, MNNIT Allahabad

Dr. Amit Medhavi, KNIT Sultanpur

**IMPORTANT DATES**

➤ Last date of receipts of application:  
November 30, 2019

➤ Intimation about selection:  
December 01, 2019

**ADDRESS FOR COMMUNICATION**

Dr. Dharmendra Kumar Shukla,  
Associate Professor, Department of  
Mechanical Engineering, MNNIT  
Allahabad-211004

Phone:(0532) 2271524(O),  
9452695306 (Mo)

Fax:+91-532-24455101;+91-532-  
2445077

Email: sir2019med@gmail.com

**Accommodation**

*Accommodation may be provided on  
availability and payment basis in  
Institute EDC/ Hostels of MNNIT for the  
outstation participants on prior  
information.*

**Short Term Training**  
**Programme**

on

**STRUCTURAL**  
**INTEGRITY AND**  
**RELIABILITY**  
**[SIR2019]**

**For Faculty members of**  
**Engineering Colleges, Practicing**  
**Engineers and Scientists**

**December 23 to 27, 2019**

**Sponsored by**

**TEQIP – III under twinning activity**

**Course Convener (s)**

Prof. Kailash Narayan Pandey  
Dr. Akhilesh Kumar Chauhan

**Course Coordinator (s)**

Dr. Dharmendra Kumar Shukla  
Dr. Sunil Kumar Gupta  
Dr. Amit Medhavi



**Venue**

**Department of Mechanical**  
**Engineering**  
**Motilal Nehru National Institute of**  
**Technology Allahabad-211 004,**  
**INDIA**

**Jointly organized**

**by**

**Department of Mechanical Engineering**  
**Motilal Nehru National Institute of**  
**Technology Allahabad**

**&**

**Department of Mechanical Engineering**  
**Kailash Institute of**  
**Technology, Sultanpur**