CEP Short Term Course
on

Advanced Composites: Mechanics and Applications

12th–14thDecember 2017

Organized By

Department of Civil Engineering
Indian Institute of Technology (BHU),
Varanasi-221005

Course Coordinator

Dr. Rosalin Sahoo
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Department of Civil Engineering
IIT (BHU), Varanasi-221005
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COURSE OBJECTIVE

The unique flexibility in design tailoring, high specific strength/stiffness, corrosion resistance and durability have increased the demand of composite materials in thin walled structural components of aircrafts, submarines, civil, automobiles and other high performance application areas where weight minimization is a major challenge. The applications of composite are huge in aircraft manufacturing, long span roof structures, tanks and bridges.

This course introduces students/faculties/professionals to obtain optimum performance from fiber-reinforced composite materials through efficient use of fibers within a laminate, based on the fundamental principles of mechanics. The development of structural composites, their analysis as well as the practical applications of advance composites in civil engineering field are also emphasized. *By the end of this program, participants will have a comprehensive understanding of mechanics, modelling and structural analysis of composite structures.The knowledge of composites will allow engineers to understand the issues associated with these materials, as well as to gain insight into how their usage differs from metals, and ultimately be able to use composites to their fullest potential.*

COURSE CONTENT

12th Dec'17
1st session: *Basic Concept, Configuration of Lamina and Laminate, Manufacturing of Composites*
2nd session: *Micromechanics of Fibre-reinforced Lamina*
3rd session: *Macromechanics of Laminate*
4th session: *Mathematical Modelling of Laminated Composites*

13th Dec'17
1st session: *Static and Buckling Analysis of Composites*
2nd session: *Dynamic Analysis of Composites*
3rd session: *Smart Laminated Composite Structures and Its Applications*
4th session: *Application of FEM for the Analysis of Composite*

14th Dec'17
1st session: *Practical applications of Composites in Civil Engineering field: Bamboo Reinforced Concrete Composite*
2nd session: *Fibre Reinforced Concrete: Its Applications*
3rd session: *Modelling and Analysis of Composite Laminate Considering Inter-laminar Continuity Effect*
4th session: *Transient Analysis of Laminated Composite using FEM*

REGISTRATION FEE

- IIT (BHU) student: Rs. 1000/-
- Non-IIT (BHU) student: Rs. 2500/-
- Faculty member/ Industry professional: Rs. 5,000/-

The course fee includes course material in soft copy, course kit and working lunch. Extra 500/- will be charged for the registration after **02nd Dec'17**.

INVITED SPEAKERS:

• Prof. B. N. Singh
Professor, Dean (HR), Former Head of the Department, Department of Aerospace Engineering, IIT Kharagpur

• Prof. D. K. Maiti
Professor, Head of the Department, Department of Aerospace Engineering, IIT Kharagpur

• Prof. D. Maity
Professor, Department of Civil Engineering, IIT Kharagpur

YOU SHOULD ATTEND IF..

• You are **a student (Graduate/under graduate)/faculty/engineer** from **Civil, Aerospace, Mechanical, Structural, Automotive and Construction** interested in obtaining improved knowledge for the conceptual of advanced composite structures and its mechanics and detailed modeling, buckling, vibration analysis of advanced composite structures.

CERTIFICATE

A certificate of successfully completion of the course would be provided to all the participants.

CIVIL ENGINEERING DEPARTMENT

The Civil Engineering Department was established in 1949 (then known as Civil and Municipal Engineering) in BENCO (Banaras Engineering College) which was a part of BHU. The department was rechristened to the present name in the year 1975. The department has been involved in activities supporting our national ambitions in the field of Civil Engineering. For further details, visit to http://www.iitbhu.ac.in/civ/

VARANASI

Varanasi, the oldest holy city in the world, is also known as "older than history". The religious and cultural capital of India is situated in the bank of holy river Ganges and is famous for Ganga Aarti, temple of Lord Shiva, Dashaswamedha Ghat, Budha (Sarnath), Sankat Mochan etc. This vibrant city of art and culture has attracted number of tourists from all over the world.

HOW TO REACH

Varanasi Railway Station and Airport are well connected to almost all parts of the India. Also it is well connected via Air to Delhi, Mumbai, Kolkata, Hyderabad, and Bengaluru. The Institute is located in the extreme south of the Varanasi city and about 7 km away from Varanasi railway station, 20 km from Mughalsarai railway station and 30 km from the Babatpur (Varanasi) airport.

IMPORTANT DATES

Last date of registration: **Dec 02, 2017**
Course Date: **12th – 14thDec'2017**.

ACCOMMODATION

Efforts will be made to provide shared accommodation in the IIT guest house on payment basis on first-come first-served.

REGISTRATION PROCESS

• The registration fee is to be paid in the form of either Demand Draft (DD)/Cheque or through account transfer. Registration fee or proof of fee payment along with completed registration form is to be sent to "**Dr. Rosalin Sahoo, Course Coordinator, ACMA, Department of Civil Engineering, IIT (BHU), Varanasi-221005, Uttar Pradesh, India**".The scanned copies of the two are also to be sent to the e-mail id: **rosalin.civ@iitbhu.ac.in; reachacma@gmail.com**

Account transfer:
Account Name: ACMA, Account No.: 37235877027, Account type: Current, Bank: State Bank of India, Branch: IT-BHU, Branch code: 11445, IFSC code: SBIN0011445
DD: In favour of: ACMA, Payable at Varanasi.
DD/Cheque should be sent to:
Dr. Rosalin Sahoo
Course Coordinator- ACMA
Civil Engineering Department
IIT (BHU), Varanasi-221005

COMMITTEES

Patron:
Honourable Professor Rajeev Sangal, Director, IIT (BHU)

Prof. A.S.K. Sinha, Dean, Academic Affairs, IIT (BHU)

Chairman:
Prof. P. K. Singh, Head of the Department, Civil Engineering Department, IIT (BHU)

Organizing/Advisory committee,IIT (BHU):
Prof. Veerender Kumar
Prof. Devendra Mohan
Prof. P. K. Singh Dixit
Prof. S. Mandal
Prof. Rajesh Kumar
Prof. S. B. Dwivedi
Prof. Arun Prasad
Prof. K. K. Pathak
Prof. B. Kumar
Dr. P. R. Maiti
Dr. Anurag Ohri

Treasurer:
Prof. K. K. Pathak

Registration Form

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12th – 14th December 2017

Department of Civil Engineering,
Indian Institute of Technology (Banaras Hindu University), Varanasi – 221 005

Name (CAPITALS):

Organization:

Designation:

Address for communication:

Mob. No.:
E-mail:

Highest academic qualification:
Experience (Years)

A) **Teaching:**
B) **Industrial:**

Accommodation required (Yes/No):
Payment Details (Bank address, code, phone no.)

RTGS :
D.D.:

Amount:

Amount in words:

Please register me for the ACMA to be held during 12th to 14th December, 2017 at IIT (BHU), Varanasi.

Date:
Place:

Signature of the Applicant