Chief Patron:
Prof. Pramod Kumar Jain
Director, IIT(BHU), Varanasi

Patron:
Prof. B. K. Srivastava, Chairman, QIP Cell

Chairman:
Prof. T. Som
Head, Department of Mathematical Sciences,
IIT(BHU), Varanasi

Advisory Committee:

Prof. Satyajit Roy, IIT-Madras
Prof. Shishir Gupta, IIT(ISM)- Dhanbad
Prof. Alok Nath Chakraborty, IISC- Bangalore
Prof. S. Ghorai, IIT-Kanpur
Prof. S. Chakraverty, NIT- Rourkela
Prof. T. Som, IIT (BHU)
Prof. P Ghosh, IIT(BHU)

Course Coordinator:
Prof. Santwana Mukhopadhyay
Co-Coordinators:
Prof. Subir Das
Dr. P.R. Maiti, Dept. of Civil Eng. IIT(BHU)

Organizing Committee:
Prof. T. Som, HoD
Prof. R. Srivastava
Prof. L.P. Singh
Prof. S.K. Pandey
Prof. S. Mukhopadhyay
Prof. S.K. Upadhyay
Prof. S. Das
Prof. M.K.Vemuri
Dr. A. Gupta
Dr. Rajeev
Dr. V.K. Singh
Dr. R.K. Pandey
Dr. Sunil Kumar
Dr. A. Banerjee
Dr. D. Ghosh
Dr. S. Lavanya

About the city

The holy city of Varanasi is known as the city of temples and oriental learning. It is a place of great historical and cultural importance. This religious capital of India is situated on the bank of the holy river, Ganges and is famous for temples of Lord Shiva, Buddha (at Sarnath), Sankat Mochan, etc. Varanasi is the premiere most place of oriental learning also. Simultaneously it is keeping pace with modern advanced knowledge. The city is reputed for silk fabrics, perfumes, artistic brass and copper wares and a variety of handicrafts. This vibrant city with multiple dimensions of knowledge and liberation has a magnetic attraction for people all over the world.

Route to Varanasi

The city of Varanasi is well connected by road, rail and air with all the important places of India. Regular flights are there from Varanasi to Delhi, Mumbai, Chennai, Bangalore, Kolkata and Lucknow. The Indian Institute of Technology (Banaras Hindu University) campus is only 8 Km from Varanasi Cant, 20Km from Deen Dayal Upadhyaya railway station and 35 Km from the airport.

AICTE Sponsored
QIP-Short Term Course
On
*Mathematical Modeling
and Analysis on Continuum Mechanics*
(*MMACM – 2019*)

September 09-15, 2019

Organized by
**Department of Mathematical Sciences
Indian Institute of Technology
(Banaras Hindu University)
Varanasi –221 005, India**

AICTE Sponsored QIP- Short Term Course on "Mathematical Modeling and Analysis on Continuum Mechanics" (MMACM-2019)

The QIP-Short Term Course on "**Mathematical modeling and analysis on continuum mechanics**" is scheduled at Dept. of Mathematical Sciences, IIT (BHU), Varanasi during *September 09-15, 2019* under the aegis of the QIP cell of Indian Institute of Technology (BHU). This course is aimed at providing an opportunity to young faculty members of AICTE approved Engineering Colleges of India to the theoretical aspects and real-life practical experience of world level scholars in the field of continuum mechanics. **They will get an opportunity to interact with eminent speakers and to improve their knowledge in the aspects of mathematical modeling on continuum mechanics.**

Objectives

The objective of the present short-term course program is to introduce the fundamental concepts of continuum mechanics and illustrate how many of the important partial differential equations of applied mathematics arise from continuum modeling principles. It will provide a comprehensive foundation for mathematical models used in solid mechanics, fracture mechanics, fluid mechanics and in heat transfer in biological system. It will also include the introduction of an approach to multi-constituent continua based on mixture theory to illustrate how phenomena, such as diffusion and porous-media flow obey continuum-mechanical principles. Both Mathematical and computational analysis of phenomena and algorithms will be discussed. Recent advancements in the field and newly introduced mathematical approaches for solving the problems of continuum mechanics will be addressed.

About the Department

The Department of Mathematical Sciences, IIT (BHU), Varanasi, earlier known as Applied Mathematics, has been functioning since 1968, caters to the needs of the undergraduate as well as postgraduate students of the Institute and the five years Integrated Dual Degree course in Mathematics and Computing of the department. The Department has an encouraging record in research work and guidance with more than 300 Ph.D.s and over 3000 research publications in the journals of national and international repute.

Tentative Speakers

Prof. Satyajit Roy, IIT-Madras
Prof. S. Gupta, IIT(ISM)
Prof. S. Ghorai, IIT-Kanpur
Prof. S. Chakraverty, NIT-Rourkella
Prof. P. Ghosh, IIT(BHU)
Prof. Santwana Mukhopadhyay, IIT(BHU)
Prof. Subir Das, IIT(BHU)
Dr. P.R. Maiti, IIT(BHU)

Topics to be covered

- Fundamental concepts on tensor analysis;
- General continuum mechanics related to solid Mechanics: Motion and deformation Lagrangian and Eulerian description; Basic principles and laws;
- Concepts of thermal stresses and modeling on coupled thermoelasticity, viscoelasticity and plasticity;
- Continuum modeling on fracture mechanics; Seismic wave propagation;
- Concepts on general continuum mechanics related to fluid Mechanics: Boundary layer flows; Full Navier-Stokes equations and applications to cavity problems; Numerical solutions;
- Mathematical modeling on porous medium;
- Continuum biomechanics: Continuum mechanics applied to biological systems; Modeling on bio-heat transfer;

Registration Process:

Eligibility of Participants: Faculty members from University/ Engineering colleges approved by AICTE who are working/interested in the area of Applied Mathematics and other related areas like Mechanical/Civil Engineering are eligible to attend this course.

Registration fee: The caution money (refundable security deposit) is to be paid in the form of a Demand Draft of Rs. 2000 in favor of "Registrar, IIT (BHU), Varanasi" payable at Varanasi (Branch Code: 11445).

The DD along with completed application form is to be sent to the course coordinators latest by ~~August 5, 2019~~. The date is extended till *August 16, 2019.*

Confirmation for the participation shall be communicated on the first-come-first-served basis to facilitate the participants to book the reservation in time. Since the number of seats is limited, the participants are advised not to wait for the last moment. Selected participants will be eligible for to and fro railway fare via the shortest route in III-AC class and free lodging and boarding in the Institute guest house/hostels during the course period. Candidates attending the course in full only will be eligible for TA. If your candidacy is being sponsored by your institute, a formal letter will be provided.

Invitation to selected participants will be sent by *August 16, 2019.*

Address for sending application & contact details:

Prof. Santwana Mukhopadhyay
CC/Coordinator (MMACM-2019)
Department of Mathematical Sciences
IIT (BHU), Varanasi, India
Cell: 8765617753
E-mail: mmacm.stc2019@gmail.com

Department of Mathematical Sciences
Indian Institute of Technology (BHU), Varanasi

Registration Form
"Mathematical Modeling and Analysis on Continuum Mechanics"
(MMACM-2019)

September 09-15, 2019

1. Name……………………………………………………………………………………………
2. (a) Age……………………………………….. (b) Sex: M/F…………………………………………
3. Designation…………………………………………………………………………………..
4. Organization…………………………………………………………………………………
5. Address for correspondence
……………………………………………………………………………………………………
……………………………………………………………………………………………………
Email……………………………………….Phone/Mobile……………………………………..
6. Highest academic qualification……………………………………………............................
7. Specialization …………………………………………………………………………………
8. Category of participant
   - Sponsored participant from AICTE approved institutions   Yes   No
9. IIT (BHU) accommodation required   Yes   No
10. Payment details
    - Amount (Rs.)………………………………………………………………………………..
    - Demand Draft number…………………………………………………………………...
11. *Bank A/c no. & Branch Name…………………………… & ……………………………………
12. *IFSC Code of Bank………………………………………………………………………………
13. PAN No. ………………………………………………………………………………………..

Please register me for the course on "*Mathematical Modeling and Analysis on Continuum Mechanics"* to be held at the Department of Mathematical Sciences, IIT (BHU) Varanasi.

Date………………….
Place ………………..   Signature of the Participant

SPONSORSHIP

Prof./Dr./Mr./Ms./Mrs./…………………………….is an employee of our institute and his/her application is hereby sponsored. The applicant will be permitted to attend the short-term course on "*Mathematical Modeling and Analysis on Continuum Mechanics*" at IIT (BHU) Varanasi during date of MMACM-2019, if selected.

Date: Signature of Sponsoring Authority
Designation:
Official Seal:

(*Required for Online payment of TA/DA)

Note: The participants are required to carry with them two passport size photographs and submit to the coordinator.