



Short Term Course on **COMPUTER PROGRAMMING AND STRUCTURAL ANALYSIS(FEM)** ID 198 at

INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR (IIT KGP), INDIA

07—14 JUNE 2019, By Prof. S.C.Pradhan (SCP)

(10 AM of Friday to 5 PM of next Friday]

Course Name **COMPUTER PROGRAMMING AND STRUCTURAL ANALYSIS**(Syllabus appended at the end)

Venue A/C PC LAB / Lecture Room, IIT KHARAGPUR,

PRESENT STATUS: → **Few seats are available**

SHORT LISTING CRITERIA **FIRST FEES PAID WILL BE SERVED FIRST**

Teacher and Course content Prof S.C. Pradhan, AE/IITKGP; has been working / has teaching experience of Computer programming, Finite Element Method, Composite Materials, Fracture Mechanics and Structural Analysis since 1988. (1) Lectures will be based on Basic Programming Techniques, Finite Element Method and Structural Analysis (Content appended at the end)
(2) A/C computer lab classes for the development of Finite Element Code Applied to Structural Analysis
Already conducted a similar course during 21-28 December 2018

Who can Participate: Undergraduates, postgraduate students, teachers and young professionals who are in **Mechanical, Aerospace, Civil and Ocean Engineering and interested in Structural Analysis, Finite Element Method**

FOR BOOKING A SEAT **contact below and go ahead with option (1) online registration and pay fees online or option (2) off line email/send your CV to scp**

and

scp (Prof. S C Pradhan,
Department of Aerospace Engineering,
Indian Institute of Technology Kharagpur,
Post: TECHNOLOGY KHARAGPUR, WEST BENGAL,
INDIA-PIN:721302) registration fee (demand draft)
in name of
“CEP-STC IIT KHARAGPUR” Payable at Kharagpur

SCP Email: scp@aero.iitkgp.ac.in ; scp.aero@gmail.com,

SCP Mobile : (91) 8918027422; (91) 8900244699 during 9AM to 5PM

Registration Fee

₹ 8260/- For Indian residents (7000+18%GST)

US \$ 300 for .foreign residents / participants

(Fee includes

- ❖ **CERTIFICATE** of participants from INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR, INDIA
- ❖ lectures, A/C computer lab classes
- ❖ teaching materials and
- ❖ Food and shelter (accommodation in hostel and basic breakfast, meals @lunch , @dinner during program days)
- ❖ T-shirt with IIT Kharagpur logo

FLOW CHART for online applicants: **Participants** [go to IIT KGP web](#) →

→ 1: APPLY ONLINE FROM IIT WEB → SIGN UP WITH UR EMAIL ID → LOGIN TO UR EMAIL & VERIFY MAIL → LOG IN WITH EMAIL ID & CREATE PWD, & CONFIRM PWD → LOG IN WITH UR EMAIL AND CTREATED PWD → GO TO YOUR LOGIN A/C APPLY FOR THIS COURSE → EDIT PROFILE (Fill ALL Items) → SAVE & NEXT → UPLOAD PHOTO & SIGNATURE. →

Click APPLY NOW under Computer Programming and Structural Analysis course ID -198 & Apply

If you are facing problem to register online please send scanned copy of (i) one page CV with contact email and mobile, (ii) photo (iii) signature (iv) Aadhaar /Passport Number (v) Your Institute ID to scp email/mobile. Skip payment part send a demand draft in favour of “CEP-STC IIT KHARAGPUR”

GET SHORTLISTED FROM SCP / CEP / IITKGP →

→ 2: PAY REGISTRATION FEE to IITKGP CEP STC A/C →

Anyone gets a **successful payment.** message means his/her seat with hostel accommodation is confirmed.

→ **3: WELCOME TO IIT KGP INDIA** FOR THE COURSE during **07th-14th JUNE 2019**

Any problem call

SCP Mobile : (91) 8918027422; (91) 8900244699 during 9AM to 5PM

Or write to SCP Email: scp@aero.iitkgp.ac.in ; scp.aero@gmail.com

(Escorts [a/c taxi] will be arranged to participants coming by air from nearest international/domestic airport at Kolkata,INDIA
(120 KM on road away from IIT KGP India campus)

Your have a wonderful day ahead ! Keep smiling always :)

Computer Programming and Structural Analysis(FEM)

SYLLABUS

Introduction to digital computers;

Introduction to programming in MATLAB - variables, assignments; expressions; input/output;

Conditionals and branching; iteration;

Functions; Subroatings, recursion; arrays;

Matrix Analysis

Introduction to Symbolic Computing

Variational principles in structural analysis,

general finite element formulation using assumed displacement models,

convergence requirements,

finite element structural analysis using simple bar, beam, and two-dimensional plane stress elements.

Shape functions, rectangular elements

Lagrange family and serendipity family,

natural co-ordinates: interpolation fields for triangular elements.

Isoparametric formulation; two-dimensional elements, Gauss quadrature, and elements for axial symmetry:
plate elements,

finite element free vibration analysis of bars and beams,

weighted residual and Galerkin methods,

finite element modeling and programming.

RK: scp : Tuesday, April 2, 2019