

**Three Day (10.09.09 – 12.09.09) Short Term CEP course on
“Computational Modeling of Welding Processes”**

Introduction	<p>The finite element method (FEM) has now become an important tool for modeling heat transfer, fluid flow, and thermal-mechanical stresses in welding processes. Major outputs of these models include weld geometry, weld thermal cycle and cooling rate, and, distortion and residual stresses experienced by the weld joint for a given set of process and material parameters. However, computed results rarely agree with experimental results and thus, such models, although emerging as popular design route, lack reliability. A recourse is thus to aim at an integrated approach such that the process models can learn to handle the uncertainties in modeling calculations and in turn, help in providing reliable computed results. The present course will provide a basic understanding on</p> <ul style="list-style-type: none">A. how to develop FEM based process models in fusion welding using commercial software as well as in indigenous manner,B. how to handle heat sources in modeling welding processes,C. what are the uncertainties in such process models and how can they influence the reliability of computed results,D. how to make process models more reliable, and lastly,E. how such models can help in design for welding processes.
Faculty	Prof. Amitava De, Mech. Engg. Dept., IIT Bombay (amit@iitb.ac.in)
Expected Beneficiaries	Professionals working in the area of numerical modeling of manufacturing, in particular, welding processes and design for welding both in academic institutions and industries.
Venue	Institute Guest House, IIT Bombay, Powai, Mumbai – 400 076
Course Fee	Rs.15,000/- (for Industry) and Rs.10,000/- (for Educational Institutions) per participant. The course fee includes tea, snacks and working lunch.
Lodging and Boarding	Institute guest house facility will be available on double sharing basis [@ Rs. 500/- per person] on advance (at least seven days) request only.
Communication Address	Professor Amitava De, Mechanical Engineering Department, IIT Bombay Powai, Mumbai, Pin – 400 076 Ph.: 0 22 25767509; Fax: 0 22 25726875; Cell: (0) 9820536733 e-mail: amit@iitb.ac.in ; amit@me.iitb.ac.in Homepage: www.me.iitb.ac.in/~amit

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Please fill up the following details and fax / mail / post the same to the communications address as mentioned earlier.

→ CEP course “Computational modeling of welding processes”

Name:

Designation:

Organization:

E-mail:

Telephone / Cell / Fax No.s:

Qualification / Experience:

What will be your primary interest in this course?

Registration

Guest House accommodation required at IIT Bombay: YES / NO

[Guest house bill to be paid directly by the participant]

Registration fee payment: DD No.

Date:

[DD should be drawn in favor of “The Registrar, IIT Bombay, (CEP A/c)"]

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Please attach your visiting card along with the form