

The Indian Institute of Metals Short Professional Educational Courses (On-line) on

“An Introduction to Fracture Mechanics”

[Course Number IIM-25-107; Online Mode 10th to 12th June, 2025, 09:00 – 13:45h]

Background: Fracture mechanics enables prediction of the failure conditions or maximum allowable design stresses and also to precisely calculate what extent of damage can be withstood by a material, product or a structure; it also enables to achieve vastly improved safety and reliability of components in service. Secondly, proper understanding of the scientific principles behind fracture is essential for the advanced materials design, production and their applications in modern day systems. Further understanding of the fracture mechanisms that lead to total failure of the material and of any engineering component / system is vital. When such understanding of the properties will serve as one of the most important merit indices for materials and enable best designing methodologies. This unique fundamental course on FRACTURE MECHANICS is organized to introduce the basics and then cover the important aspects of FRACTURE and is mainly targeted at students, researchers, structural designers, component developers as well as the system engineers / integrators. The course contents would be covered in class room lectures accessible through Virtual on-line route.

Who should attend: The course is useful for engineers in advanced industries such as power plant, aerospace, structural wings of civil and mechanical engineering, component developers, researchers dealing with advanced alloy-development and students of most engineering specialisations, including AI. A galaxy of experts in this specialized field have agreed to deliver the course lectures making it an invaluable opportunity to learn. The course is organized under the leadership of an eminent research-scientist **Professor Dr. N Eswara Prasad**.

Course Content:

Day-1: Fundamentals of Fatigue & Fracture Chair: Professor K Bhanu Sankara Rao Co-Chair: Dr. G Balachandran	Day-2: Fracture Mechanics Chair: Professor Dr. N Eswara Prasad Co-Chair: Professor Shiva Rudraraju
09.00 – 09.30h: Inaugural Session Welcome by Dr. Soumitra Tarafdar Opening Remarks Brig Arun Ganguly (Retd), Secretary General, IIM Dr. G Balachandran, Chairman, SPECS Committee, IIM Address by Chief Guest Professor K Bhanu Sanakara Rao, IIT-H, Hyderabad	9.00 – 10.45h : Fracture: Fundamentals – An Overview Professor Koteswara Rao V. Rajulapati School of Engineering, Science & Technology (SEST), Central University of Hyderabad (UoH) Hyderabad, Telangana, India
09.30 – 10.50h : Mechanical Behaviour & Properties of Materials Professor Dr. N Eswara Prasad Director (R&D), Chairman (RDC) and Secretary, TRAERF Prof. MME, MGIT, CBES, Hyderabad, Telangana, India	11.00 – 12.15h : Fracture Toughness: Parameters, Standards and Evaluation Procedures Dr. Soumitra Tarafdar Formerly with CSIR National Metallurgical Laboratory, Jamshedpur, Jharkhand, India
11.00 – 12.00h : Fracture Mechanisms: A Comprehensive Overview Professor Shiva Rudraraju Department of Mechanical Engineering University of Wisconsin – Madison, Madison, WI, USA	12.30 – 13.30h Life Estimation and Life Extension Dr. Jalaj Kumar & Dr. Vikas Kumar Defence Metallurgical Research Laboratory (DMRL), DRDO, Hyderabad, Telangana, India
12.15 - 13.30h : Structural Design & Role of Fracture Properties Dr. Vijay Kr. Sutrar Aeronautical Development Establishment (ADE), DRDO, Bangalore, Karnataka, India	

Day – 3: Advancements in Fracture Mechanics and Applications of Fracture Properties

Chair: Dr. Soumitra Tarafdar; Co-Chair: Professor Koteswara Rao V. Rajulapati

<p>09.30 – 10.30h</p> <p>Objective Type Written Test</p> <p>Dr. M Vijaya Lakshmi Dr. J Jhansibai Professor Dr. N Eswara Prasad</p>	<p>13.00 – 13.45h</p> <p>Concluding Session Applications of Fracture Mechanics:</p> <p>A. Aerospace Systems B. Materials for Aerospace Systems</p> <p>Dr. Susarla V. Narayana Murty CMD, Midhani, Hyderabad, Telangana, India</p>
<p>10.30 – 11.45h</p> <p>Recent Advances in Fracture: R-Curves & Mixed-Mode, All-Mode Fracture</p> <p>Professor Dr. N Eswara Prasad</p>	<p>Course Sum-Up: Dr. Soumitra Tarafdar Distinguished Chief Guest address Distinguished Guests of Honour: address Vote of Thanks: Professor Dr. N Eswara Prasad</p>

Registration Fees and Payment Details

Participant Fees (in INR)

IIM Members 5000 + 900* = 5900/-
IIM Non Member 7500 + 1350* = 8850/-
Student Member 800 + 144* = 944/-
Student Non-member 1200 + 216* = 1416/-

* (18% GST)

- Participants may join the 3 days course module which shall be conducted virtually.
- Advance payment of Registration fees is mandatory.
- Participation fee is non-refundable; however, change in nomination is possible.
- Students should furnish suitable proof of they being students while filling in the online form.
- 10% discount shall be offered for registering more than 5 persons sponsored by any organization

Participants are requested to register via

<https://shorturl.at/ewjGH> [For Individuals],

<https://shorturl.at/j8EOY> [For Organizations]

and pay online as per the details given below mention Course.

The online transaction receipt, mentioning the course number IIM-25-107 may be uploaded by using the link provided in the Google form. Alternately, a demand draft should be made in favour of "The Indian Institute of Metals" payable at Salt Lake, Kolkata
Metal House, Plot 13/4, Block AQ,
Salt Lake, Sec V, Kolkata : 700 091, West Bengal, India

Contact Persons:

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Bank Details

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Bank: State Bank of India,
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Branch Code: 04289,
IFSC Code: SBIN0004289
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