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

"Continuous Casting of Steel"

[Course Number IIM-25-108; Online Mode 8th to 11th July, 2025 , 09:30 – 13:30h each day]

Background: This short-term course is designed for professionals engaged in or supporting continuous casting operations in the steel industry. While participants may have rich hands-on experience, this course focuses on strengthening their understanding of the underlying principles of heat transfer, fluid flow, solidification, and stress evolution, and how these fundamentals relate to productivity, quality, and machine performance. The course blends theoretical lectures with industrial case studies, modeling insights, and expert talks to deliver a comprehensive learning experience.
The course Content would be covered in Class Room Lectures accessible through Virtual on-line route.

Who should attend: The course is useful for, Steel plant process engineers; Quality and R&D professionals; Product development engineers; Academics and technical consultants; Equipment designers and project engineers, students and research scholars; TMT rebar manufacturers; steel suppliers. The course is organized under the leadership of an eminent academician **Professor A K. Singh from IIT, Kanpur.**

Deliverables: Course materials include slides and technical notes, as well as case studies and reference papers; Certificate of Participation.

Course Content:

Topic of Lectures	Course overview (All)
Inaugural Session (30 mins)	Welcome & Course Introduction
Continuous Casting Overview, Design & Grade-Wise Parameters (45 mins x 2)	Mold design, taper, EMS selection, secondary cooling, nozzle type, powder choice, all based on steel grade – AKS/SKR
Melt Delivery & Cleanliness (45 mins x 2)	Superheat control, ladle furnace, tundish metallurgy, reoxidation prevention, shrouding, SEN configuration, nozzle clogging- AKS
Fluid Flow (45 min) & Flow Control (SEN + EMS/EMBr) (45 mins x 2)	SEN flow patterns, mold turbulence, meniscus stability, flow asymmetry, EMBr for slab casters, EMS – AKS/PKJ
Heat Transfer & Shell Growth (45 mins x 2)	Mold heat flux, mold flux melting and rim formation, secondary cooling zones and control strategies, metallurgical length – AKS/RS
Solidification & Structure Evolution (45 mins x 2)	Chill/columnar/equiaxed zones, CET, microstructure evolution, micro/macro segregation – AKS
Strand Mechanics & High-Temp Deformation (45 mins x 2)	Strand bulging, inter-roll gap, unbending stress, strand cracks, DSR, bulging & high-temperature deformation – AKS/BPG
Defect Generation & Mitigation (45 mins x 2)	Internal/surface defects, breakout causes, mapping defect origins to physics, countermeasures, defect case studies – SKR/GB
Integration, Modeling & Digitalization (45 mins x 2)	Role of ICME, process modeling, AI/ML tools in prediction, digital twins – AKS/BPG
Concluding Session (30 mins)	Wrap-up + Q&A (All Instructors)
Instructors: AKS-Prof A K Singh, SKR-Prof Santanu K Ray, RS-Dr Rahul Sarkar, PKJ-Dr P K Jha, BPG-Dr B P Gautham & GB-Dr G Balachandran.	

Distinguished Faculty	Designation Affiliation
Dr. A K Singh, Course Co-ordinator	Professor, IIT, Kanpur
Dr B P Gautham	Scientist, TCS Ltd
Dr S K Ray	Scientist (Retd), RDCIS, SAIL Professor (Retd.) IIT Madras
Dr P K Jha	Professor, IIT Roorkee
Dr R Sarkar	Professor, IIT Kanpur
Dr G Balachandran	Sr VP (Retd), JSW Steel

Registration Fees and Payment Methods

Participant Fees:

IIM Member 6000 + 1080* = 7080/-
IIM Non Member 8250 + 1485* = 9735/-
Student Member 800 + 144* = 944/-
Student Non-member 1200 + 216* = 1416/-
* (18% GST)

- Participants may join for the 4 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 may 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 (N.A. for Students).

Participants are requested to register via :
https://shorturl.at/Ag9MJ [For Individuals],
https://shorturl.at/0IhA4 [For Organizations]
and pay online as per the details given below. Mention Course
The online transaction receipt, mentioning the course number IIM-25-108 may be uploaded by using the link provided in google form.
Alternately, a demand draft in favour of "The Indian Institute of Metals" payable at Salt Lake, Kolkata can be sent to The Indian Institute of Metals, Metal House, Plot 13/4, Block AQ, Salt Lake, Sec V, Kolkata : 700 091.

Contact Persons:

Dr G Balachandran
Chairman, SPECS Committee,
The Indian Institute of Metals
gbalu12@gmail.com /
iimshortonlinecourses@gmail.com

Ms Nabatara Mitra
The Indian Institute of Metals
Plot 13/4, Block AQ,
Salt Lake, Sec V,
Kolkata: 700 091
readingroom@iim-india.net

Bank Details
A/c name
The Indian Institute of Metals
Bank: State Bank of India,
SME Branch, Salt Lake,
Branch Code: 04289,
IFSC Code: SBIN0004289
Current A/c No.: 54015600024
GST: 19AAATT3359D1ZF
PAN: AAATT3359D