



Indian Institute of Science (IISc)
Centre for Continuing Education (CCE)
Proficiency Courses January – May 2026



Online Course on

High speed Layout design: Basics of Signal integrity (3:1)



Course Coordinator: Yoginder Kumar Negi
Supercomputer Education and Research Centre (SERC)
Indian Institute of Science (IISc) Bangalore



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Course Schedule

Number of credits – 3:1
Mode of Instruction- Online
Class Start Date- 18 Jan 2026
Timings of the class:
Every Saturday 10 A.M. to 1 P.M.

Course Fees

Fee: 20,000
Application Fee: 300
GST@18%: 3654
Total: 23,954

Eligibility

B.E/B.Tech (EEE/ECE) /MSc in
Electronics, Basics of RF, Microwave,
transmission line design

Who will benefit?

High speed designer from Automotive,
Semiconductor Industry

Objective of the course

The objective of this course is to provide engineers and professionals with the practical knowledge and skills needed to design, analyze, and troubleshoot high-speed electronic systems. The course emphasizes real-world challenges such as reflections, crosstalk, jitter, ground bounce, and power noise that can impact product reliability and performance. Participants will learn how to apply transmission line theory, use simulation and measurement tools, and implement best design practices to ensure robust PCB and system-level interconnects. By bridging theory with hands-on applications, the course prepares professionals to confidently address signal integrity issues in modern high-speed designs, reduce time-to-market, and improve overall system performance and reliability.

Syllabus

- High Speed Signals - What is Signal Integrity?
- PCB Transmission Line and Impedance
- Return Current - Return Current in a PCB, Return Current Path
- Single Ended Impedance, Differential Impedance and Differential Signals TDR
- Types of basic high speed design: DDR, HSIO, LSIO
- Eye Diagram in Digital Communication
- EYE Mask, Create an Eye Mask Using Datasheets
- Crosstalk, Near End and Far End Crosstalk (NEXT & FEXT), S parameter & time domain analysis of high-speed design.

Contact Us

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Scan here to apply

