

Course Title: Custom Analog Mixed Signal VLSI Design and Verification **Course Code: EEA 190**
Course Background / Summary:

In the realm of Very Large-Scale Integration (VLSI), analog mixed-signal (AMS) circuits play a critical role in enabling the functionality of modern electronic systems. Designing and verifying these complex circuits requires specialized knowledge and skills. This course delves into the intricacies of custom analog mixed-signal VLSI design and verification, providing participants with the expertise needed to develop robust and reliable AMS circuits.

Course Objectives:

- Understand the significance of custom analog mixed-signal VLSI design in modern electronics.
- Grasp the principles of AMS circuit design, considering noise, power, and performance.
- Learn about the different stages of the VLSI design flow, focusing on analog components.
- Acquire skills in using industry-standard tools for circuit simulation and layout design.
- Develop proficiency in debugging and verifying complex AMS circuits.
- Explore advanced topics such as layout parasitic, signal integrity, and design-for-testability.

Target Audience:

- Analog design engineers seeking to enhance their expertise in custom AMS VLSI design.
- VLSI designers interested in expanding their skills to include mixed-signal circuits.
- Electronics engineers involved in developing complex integrated circuits and systems.

Course Duration: 4 Days
Course Contents
1.0 Introduction to Custom Analog Mixed-Signal VLSI Design
5.0 Layout Design
2.0 Principles of Analog Circuit Design
6.0 Verification Techniques
3.0 VLSI Design Flow
7.0 Signal Integrity and Layout Parasitic in AMS Circuits
4.0 Circuit Simulation
8.0 Design-for-Testability (DFT) and Test Strategies for AMS Circuits