



**Knowledge Network of
Indian Institute of Technology Gandhinagar
Under TEQIP-II Initiative**

**Summer School on
Analog CMOS Integrated Circuits**

In the past two decades, CMOS technology has rapidly embraced the field of analog integrated circuits providing low-cost and high-performance solutions. While silicon bipolar and III-V devices still find niche applications, only CMOS processes have emerged as a viable choice for integration of today's complex mixed signal systems. It is predicted that CMOS technology is going to rule the analog circuits' field for another two decades. This summer course is designed keeping this in mind.

The planned course will provide basic understanding of circuits used for processing of analog signals. The course will have 40hrs of instruction and 30hrs of hands on experience on problem solving and lab experiments. The participants will also be taught how to use CADENCE CAD tool to design different analog circuits.

This summer school will provide an opportunity for the faculty members and students to revisit the important fundamental concepts. Participation in this summer school is invited only through registration.

Topics to be covered

MOS transistors – physics and technology, Resistances and Capacitances, models for analog design, Single stage and multi stage amplifiers, current mirrors, Frequency response of amplifiers, Differential amplifiers, Feedback, stability, single stage OPAMP, frequency compensation, Output stages and power amplifiers, data converter circuits

Tentative schedule for this summer school

- (a) Morning session: Lectures for 3-4 hours
- (b) Afternoon session: Problem solving session and Lab for 3 hours

Presenters: Instructors:

1. Prof. Nihar R. Mohapatra (IIT Gandhinagar)
 2. Prof. G. S. Visweswaran (IIIT Delhi, Former Professor IIT Delhi)
-