Posting Date: 01/09/2021
Valid Till: 06/09/2021

American International University-Bangladesh

Department of Electrical and Electronic Engineering (EEE) and
Department of Computer Engineering (CoE)

Notice

New Elective Course for EEE/CoE Students

Faculty of Engineering is going to offer a new elective course titled **Mixed-signal Analog Circuits** for the students of EEE and CoE Department. Interested students are requested to fill up and submit the following form on or before **September 6, 2021**. Interested students are also advised to check the followings:

- Form Submission Link: https://rebrand.ly/elective/registration
- Course Title: **Mixed-signal Analog Circuits**
- Course Type: Elective
- Schedule: Monday: 8-10 AM & Wednesday: 8-11 AM
- Course Teacher: Dr. Chowdhury Fazlur Rahim, President and CEO, Aromatix In
- Credit: 3/Lab
- Mode: Online
- Prerequisite: VLSI Circuit Design. Ensure you have already completed VLSI Circuit Design.
- After form submission if student is selected for this elective course, then registration adviser will remove other course(s) which will create clash (if any).

Course Description:

This elective course prepares students to design state-of-the-art electronic systems, emphasizing analog electronic design in microelectronics. Major focus will be on the knowledge that mixed-signal analog companies demand from the engineers entering the workplace. It will cover in-depth analysis and design of analog CMOS integrated circuits, emphasizing fundamentals and new paradigms that aspiring and practicing engineers need to master in today's industry. Compounding this challenge is the constant drive by microelectronics to reduce power supply and power dissipation without compromising die size. The objective of the course is to enable students to address all these challenges systematically.

The course is designed to provide students with knowledge of:

• Physics and Operation of MOS Devices: Comprehensive understanding of MOS Device Physics. Systematically develop large-signal and small-signal models of the NMOS and PMOS devices to allow students to design sophisticated analog components.

• Single-stage and differential amplifier design: Develop efficient analytical tools for analyzing and quantifying the behaviors of the building blocks by inspection. Introduce issues with device limitations: Frequency response and Noise.

• Detailed analysis of feedback theory on basic building blocks. Develop concepts to prepare students to develop electronic components, such as operational amplifiers, comparators and more sophisticated components.

• Opamp and OTA design: Use concepts developed in this class to design low-noise amplifiers using space-efficient concepts for low-voltage and/or low-power system design for applications such as IOT, next-gen RF amplifiers etc.

Course Teacher:
Dr. Chowdhury Fazlur Rahim

- The President and CEO of Aromatix Inc,
- 35 years of experience at companies, such as Intel, Bell Labs, MicroLinear (now a part of Qorvo)
- 24 years at Maxim Integrated as an Executive Director
- Successfully commercialized 30 innovative integrated circuits relating to sensors and sensor interfaces
- Has 15 patents and a dozen papers in internationally recognized journals.
- Currently taking part-time classes on same subject at UCDavis, USA

Thank you.

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Prof. Dr. Md. Abdur Rahman
Associate Dean, Faculty of Engineering
American International University- Bangladesh (AIUB)