

ECE 442/538

Integrated Circuit Technology and Fabrication

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**Both
undergrads
and grads!**

Fall 2018

MW 4:30 PM - 5:45 PM Lectures (EB2)

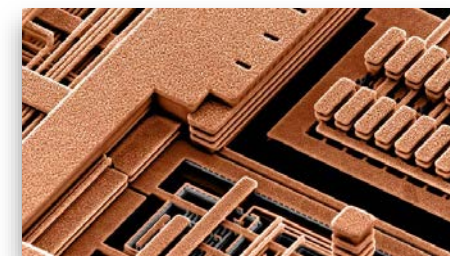
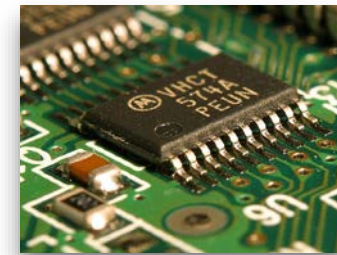
Fri 9:35 AM - 12:20 PM Lab/Activity (EB2/MRC)

New Syllabus! Note that ECE 538 is a prerequisite for a new (ECE 792) wide bandgap semiconductor device fabrication course coming in Spring 2019

Prerequisite: ECE 404 or equivalent

Description: Have you ever wondered how integrated circuits are made? This course will introduce you to the fundamental fabrication concepts and techniques used to manufacture modern day semiconductor devices and ICs. We will start by covering individual fabrication steps (e.g., lithography, etching, deposition, etc.) and then progress to how these are integrated into process flows. We will introduce you to the microscopy techniques necessary to evaluate these fabrication steps, as well as basic electrical characterization of semiconductor devices to extract performance.

The two weekly lectures will provide you with a strong theoretical background in the above topics. The lab/activity session supplements this by offering students hands-on experiences critical to securing a job after graduation, or to pursuing a graduate degree in the field of electronics or nanotechnology. You will learn how to model process steps with software and will be taken into our very own NC State Nanofabrication Facility (NNF)! Invited guest lecturers from industry will also describe the current state-of-the-art!



**Learn how integrated
circuits and semiconductor
devices are made!**

Images courtesy of IBM and Intel