

EE7331.501
Physics of Noise
Fall 2007
TTh 5:30-6:45PM
ECSS 2.312

INSTRUCTOR **Adjunct Professor Dr. Jim Hellums**

COURSE CONTENTS

The course topic will cover the physics of fluctuation phenomena, generically called “Noise”. The class will cover the fundamental physical principles underlying Generation-Recombination, Thermal, Shot, and $1/f$ noise. As well as other fluctuation phenomena that are related to these. The statistical nature of these physical processes will be developed. The physics of noise in resistors, diodes, bipolars, JFETs, and MOSFETs will be discussed and how to model it in circuits. Approximately two thirds of the class will be devoted to the physics of noise and the rest will cover how to use this knowledge to design low-noise integrated circuits.

Background Knowledge Needed: UNIX operating system, Industrial level SPICE coding, Plotting programs such as Simgraph

Prerequisite: EE6326 or permission of the instructor