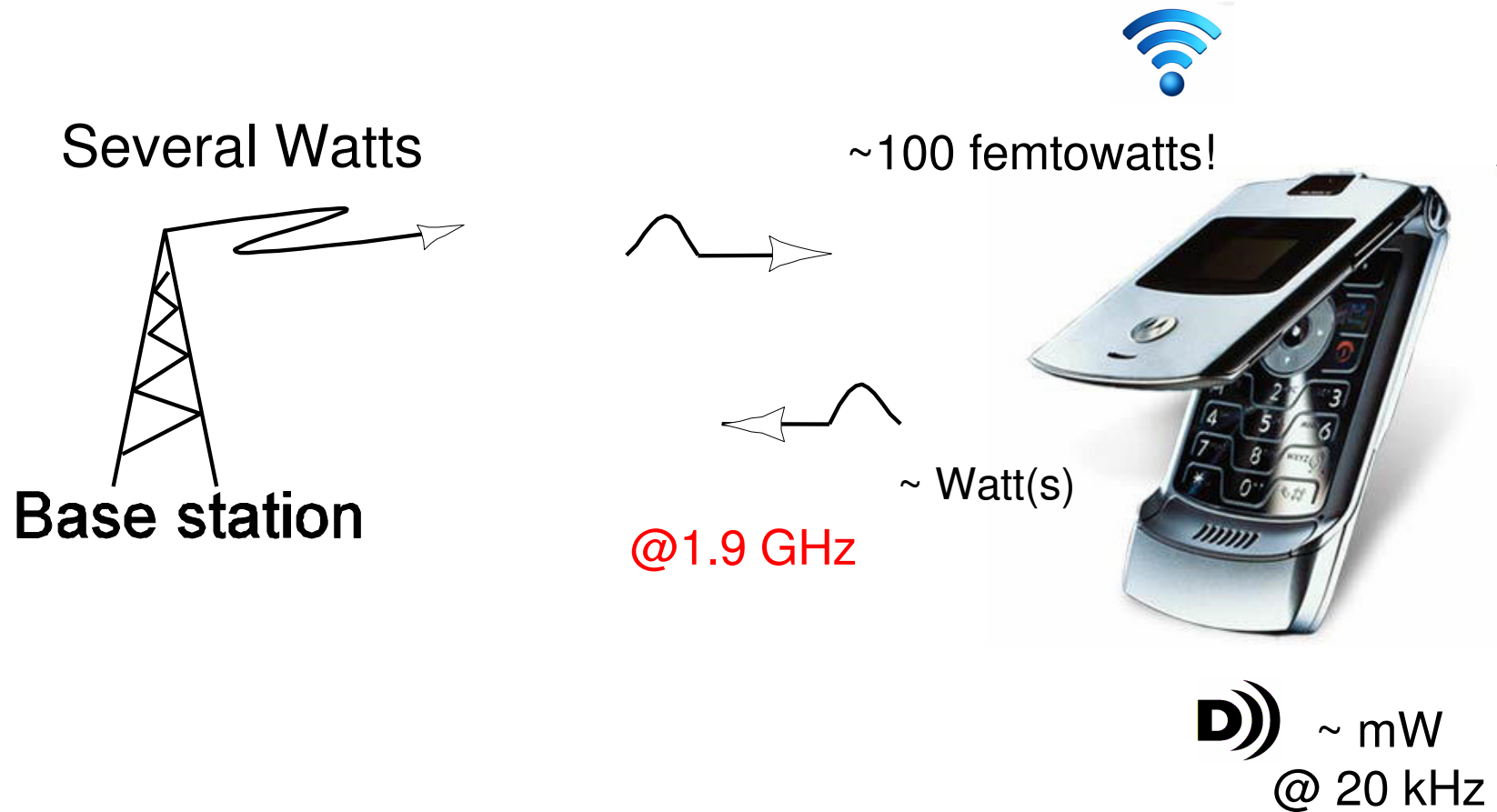


EC2010 : Analog Circuits

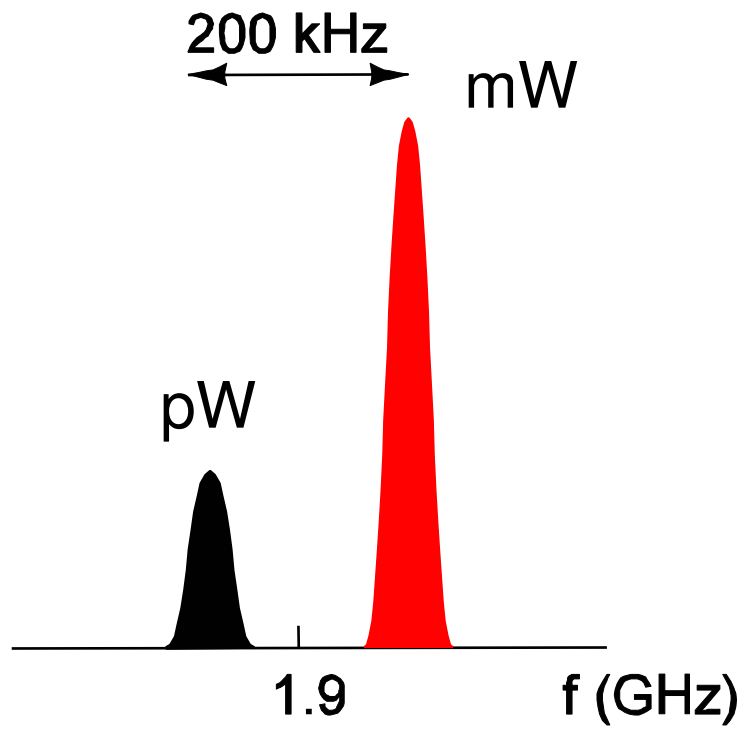
Shanthi Pavan

Nagendra Krishnapura

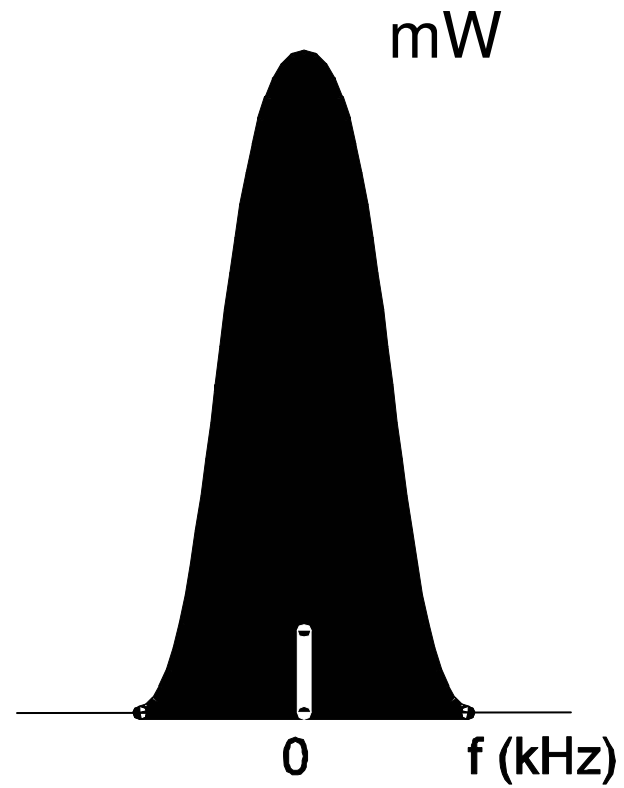
Why Analog ?



RF

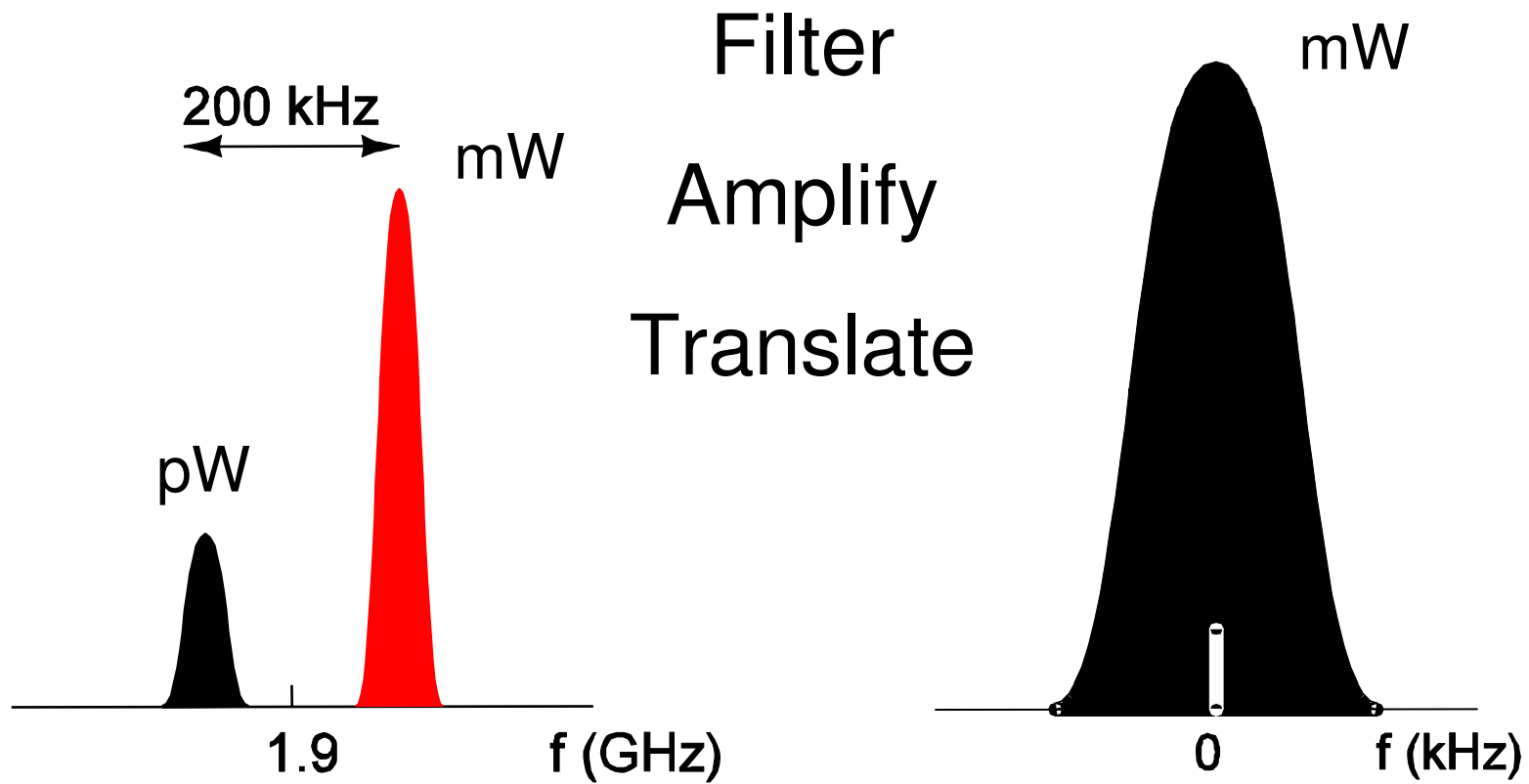


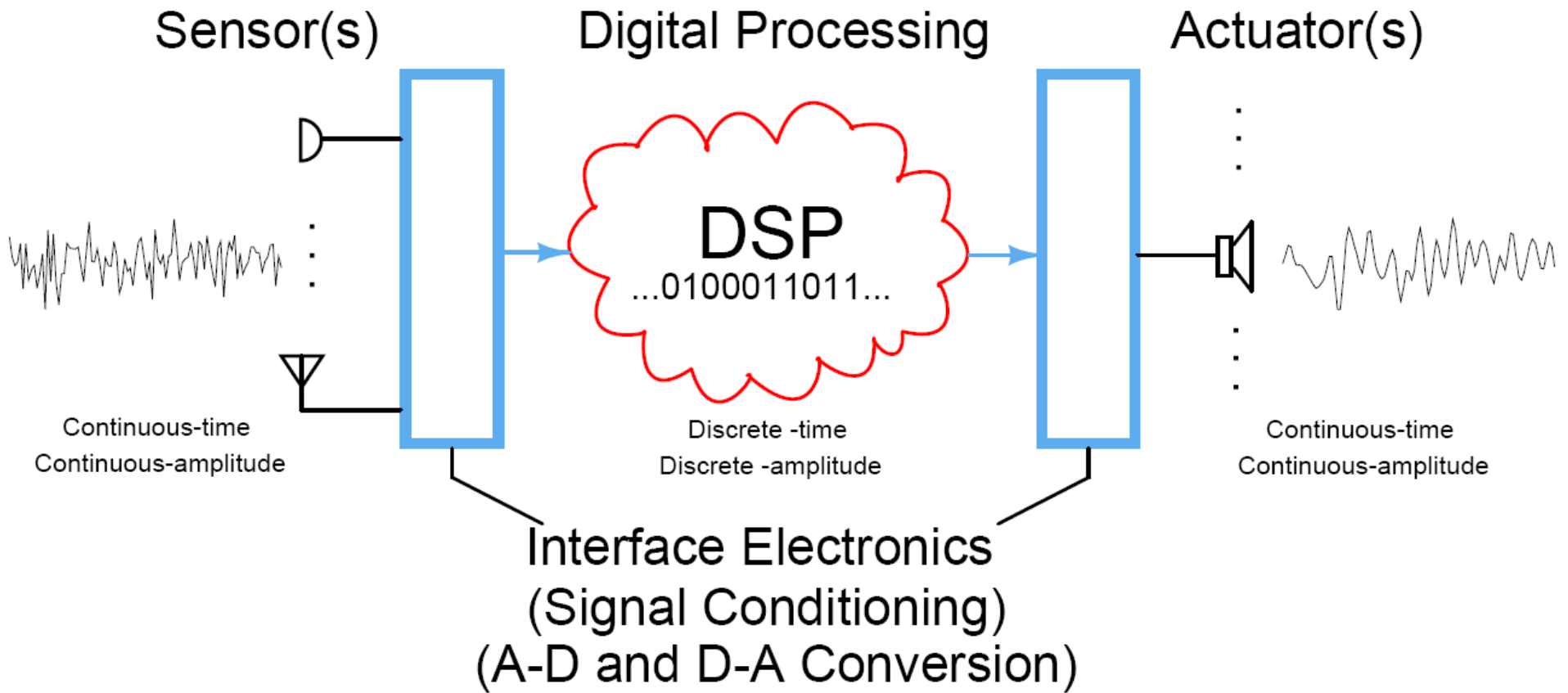
Baseband



RF

Baseband





Domain of Analog Electronics

- Amplification
- Filtering
- Analog-to-Digital Conversion
- Digital-to-Analog Conversion
- Oscillators
- Power (?) Management

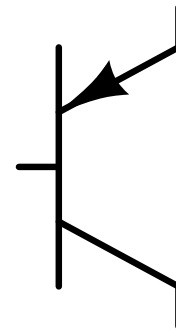
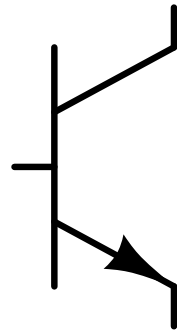
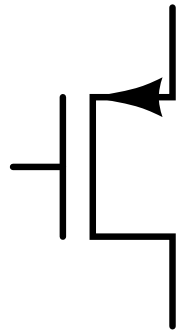
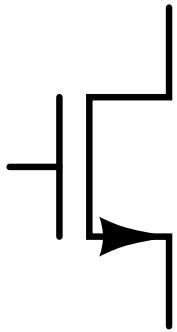
This Course

- Deals with Amplification and one can achieve it
- Prerequisites :
 - Basic Circuit Analysis (EMC)
 - Networks and Systems

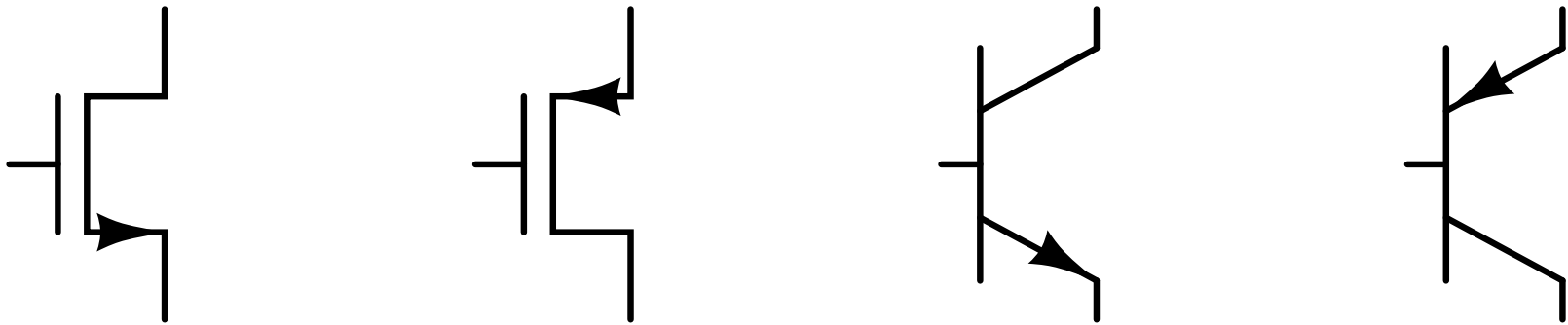
EC2010 : or How to Build an Amplifier

- Preliminaries : Nonlinear electrical networks and how to deal with them
- What one might need to build an amplifier
- Negative Feedback
 - Among the most elegant ideas in all of engineering
- Build everything from scratch
 - We hate the “take it because we said so” approach

What are these ?

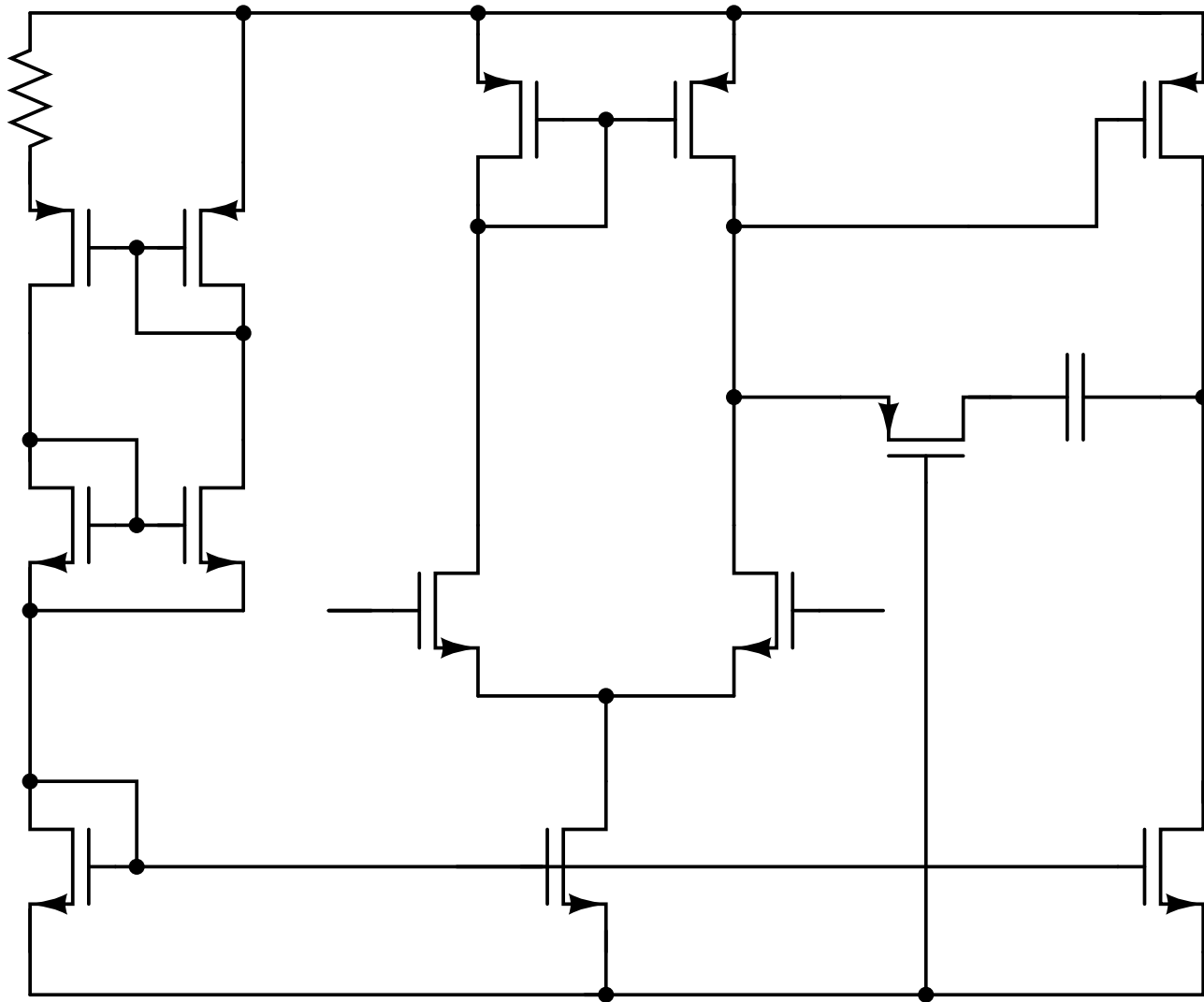


What are these ?



Shouldn't make any sense to a normal 20 year old
(who hasn't been through EC2010)

You WILL understand this, after
we are through with EC2010



Do's

- Take notes – even if the lectures are recorded
- Do NOT miss class
 - Strong correlation of attendance with grade
- Be in sync with the teacher
 - VERY, VERY important
- Do ALL tutorial problems
 - Even more important

Logistics

- Odd roll numbers in ESB 127
- Even roll numbers in ESB 106
- Attendance will be taken by the TAs in the first five minutes
- If you are less than 5 minutes late, walk in quietly – don't stand at the door
- Do NOT enter the classroom after 5 minutes

Evaluation

- 4 quizzes (50-60 % of the grade) – every 3 weeks
- Tutorials (0-10 % of the grade)
- Endsem (40 % of the grade)

Information

- Home Page :
http://www.ee.iitm.ac.in/vlsi/courses/ec201_2010/start
- Text : None
 - Class notes and tutorials
- References :
 - B. Razavi - Fundamentals of Microelectronics
 - A. Sedra and K. Smith – Microelectronic Circuits
- Background :
 - Prof. VGK Murthi's Video Lectures on Networks and Systems (NPTEL)