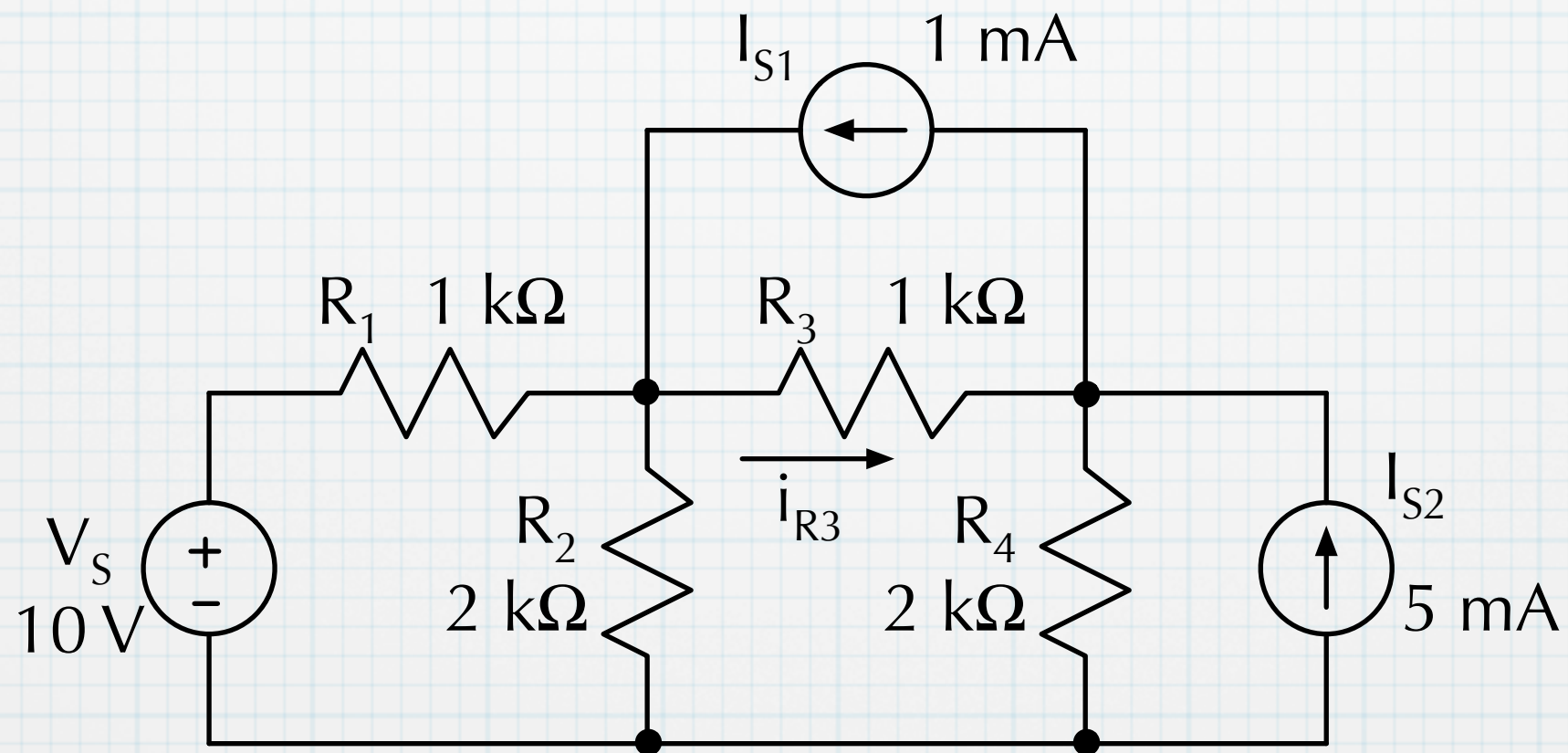


# EE 201

## Electric Circuits



## **E E 201. Electric Circuits.**

(3-2) Cr. 4. F.S. *Prereq: Credit or registration in [MATH 267](#) and [PHYS 222](#)*

Emphasis on mathematical tools. Circuit elements (resistors, inductors, capacitors) and analysis methods including power and energy relationships. Network theorems. DC, sinusoidal steady-state, and transient analysis. AC power. Frequency response. Two port models. Diodes, PSPICE. Laboratory instrumentation and experimentation. Credit for only E E 201 or 442 may be used towards graduation.

# Basics

- **Gary Tuttle**

247 ASC I (MRC) & 335 Durham (ECpE)

294-1814 (MRC)

[gtuttle@iastate.edu](mailto:gtuttle@iastate.edu)

- **Office Hours** (335 Durham)

Monday, Wednesday, Friday: 11:00 a.m. - 2:00 p.m.

Tuesday, Thursday: 2:30 p.m. - 4:00 p.m.

- **Lab instructors**

To be determined.

- **Text**

*Electric Circuits, 9th or 10th edition*, by Nilsson and Reidel (recommended)

- **Web site**

<http://tuttle.merc.iastate.edu/ee201/homepage.htm>

# What we'll be doing

## Topics

- Circuit concepts  
(voltage, current, energy, power, sources, resistors)
- circuit analysis techniques
- Thevenin equivalent circuits
- amplifiers and amplifier circuits
- inductors, capacitors, and transient effects in circuits
- diodes
- AC analysis - filters, power
- SPICE – computer simulation

## Lab

- Basic instrumentation – multimeter (voltmeter, ammeter, ohm-meter) & oscilloscope, good measurement techniques
- practical aspects of electrical components and circuits



# EE 201

## Homework (20%)

- assigned weekly; 5-6 problems
- work individually
- allowed two late submissions (Turn it in by the next class period.)

## Quizzes (25%)

- Every Monday and Wednesday
- closed book and notes
- one or two simple calculations, similar to practice problems
- no make-up quizzes (but 3 lowest scores are dropped)

## Exams - 3 mid-terms (25%)

- 3 or 4 problems
- closed-book, closed-notes. A formula sheet will be provided.

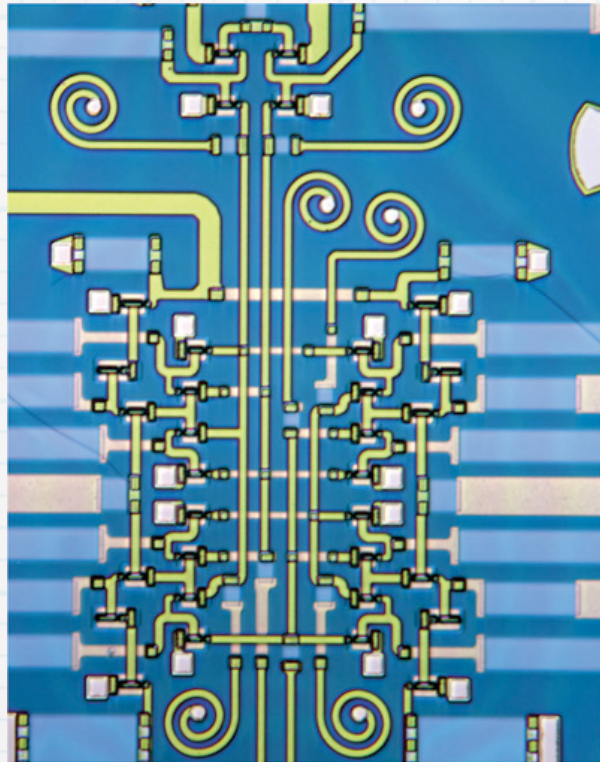
## Lab (30%)

- must be done with one partner
- do the work during your scheduled lab time
- write a lab report that will be due in one week

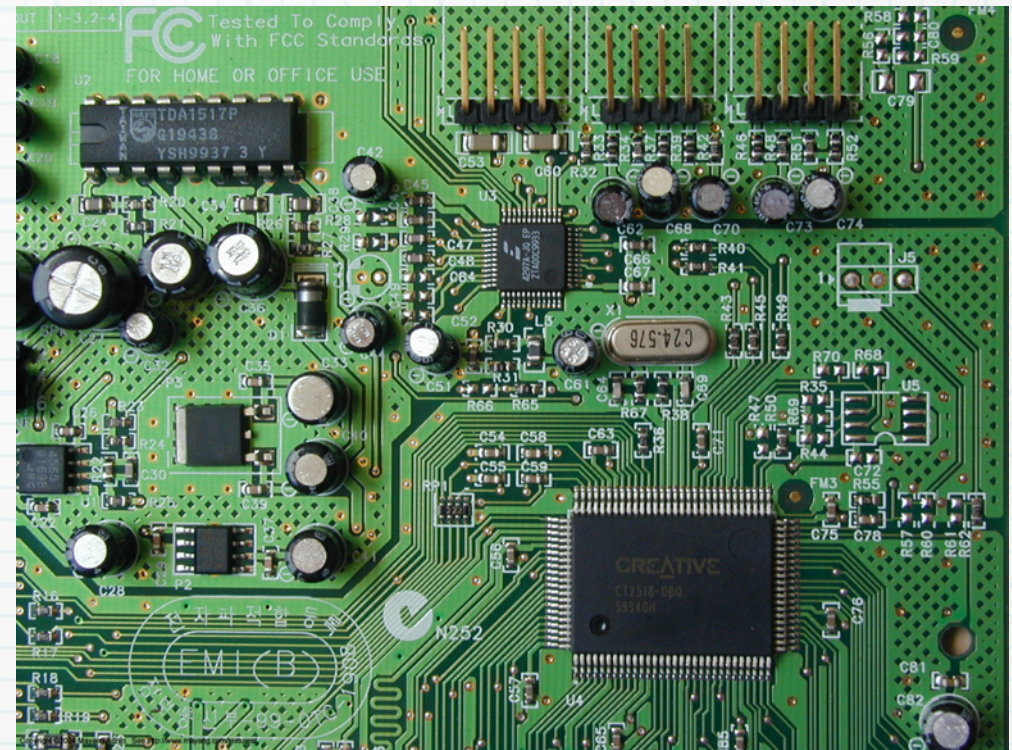


# The size scale of circuits

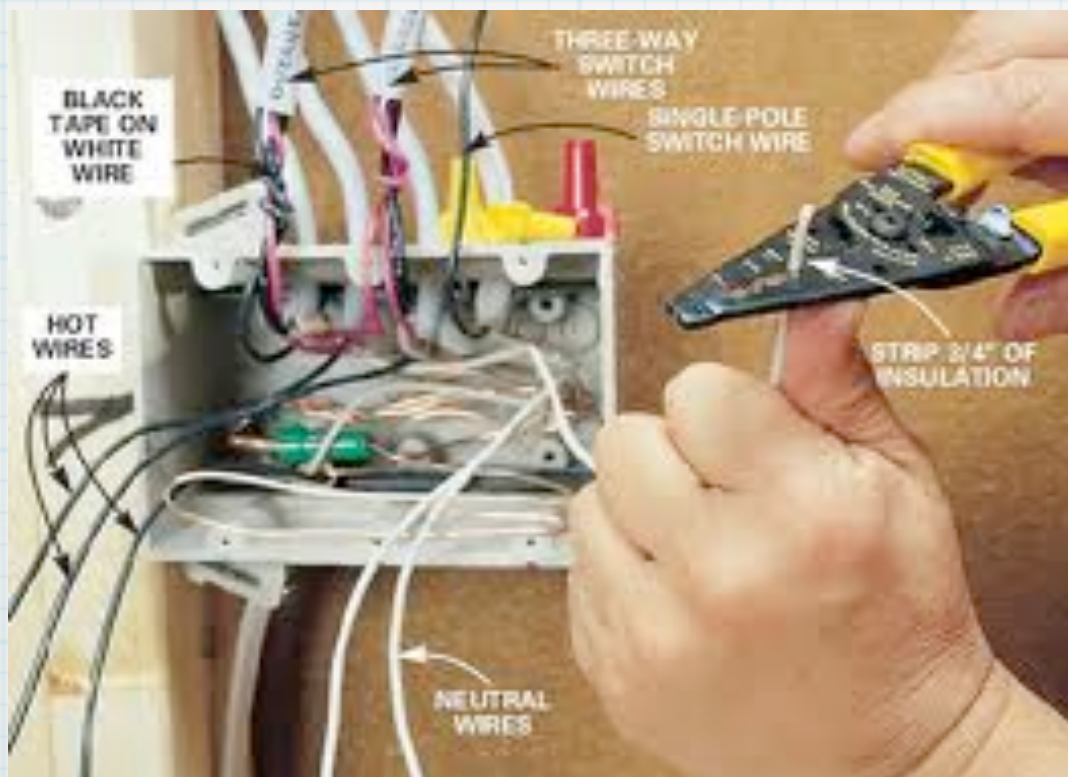
microns



inches



feet

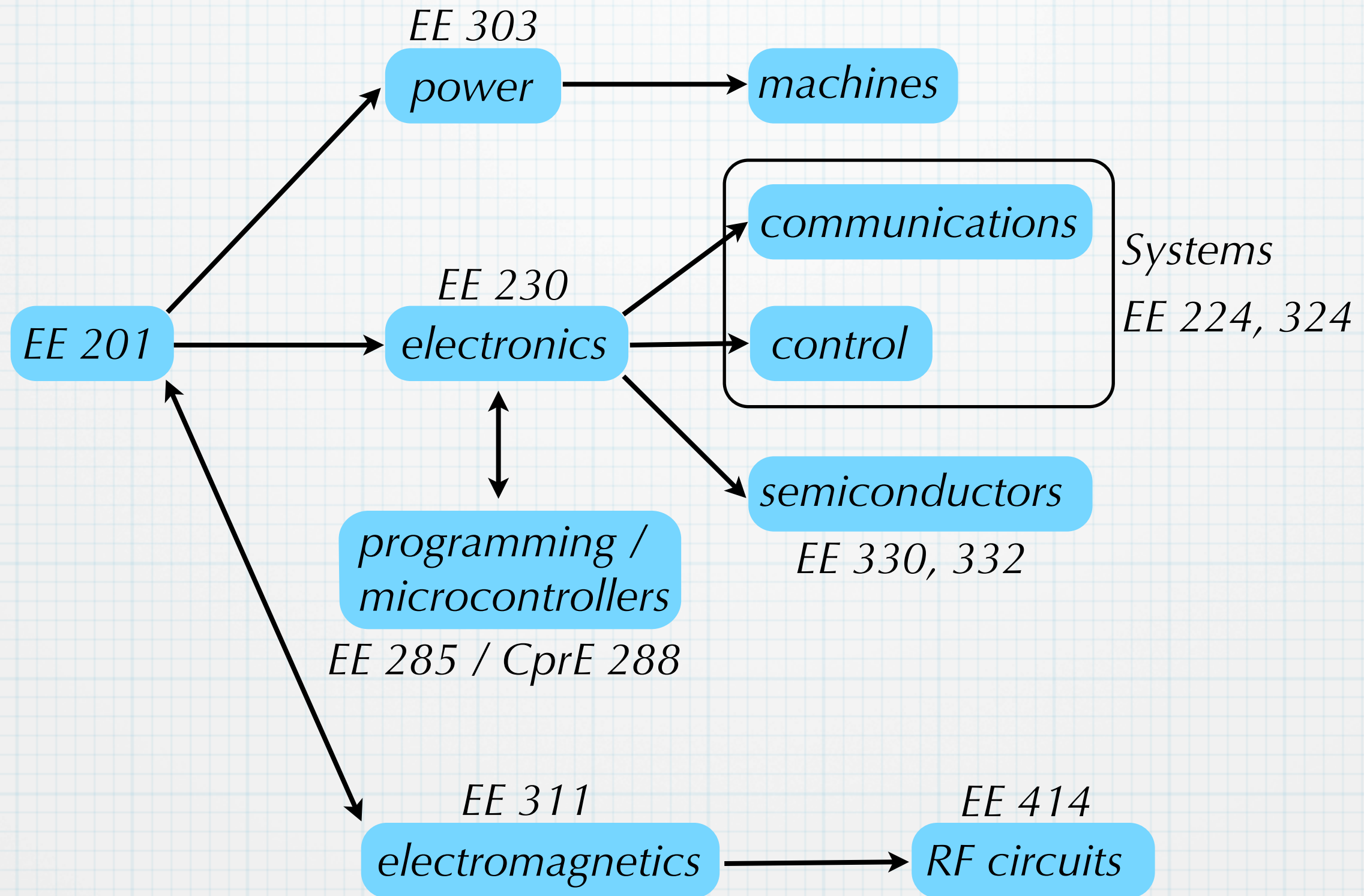


miles





# EE 201 is... boring, but absolutely essential



# The GT challenge...

Work out 1000 individual circuit problems during the semester

Consider the 10,000 hour rule. (See the book *Outliers* by Malcolm Gladwell.)