

### ELE Department

- Largest URI Engineering Department  
~ 300 students, 20 faculty
- Located in Kelley Hall and Kelley Annex  
– NW corner of Engineering Quadrangle

### 3 Undergraduate Degree Programs offered in ELE Department

- Electrical Engineering (1938)
- Computer Engineering (1989)
- Biomedical Engineering (1996)

[www.ele.uri.edu](http://www.ele.uri.edu)

**Welcome to the Department of Electrical and Computer Engineering at the University of Rhode Island**

Established in 1938, the Department of Electrical and Computer Engineering is the largest department in the College of Engineering at URI. The faculty of this department are known nationally and internationally for their research and educational work; six of the department's 20 faculty are IEEE fellows - the highest recognition for outstanding professional achievement.

The department offers academic programs leading to B.S., M.S., and Ph.D. degrees in three related fields: electrical, computer, and biomedical engineering. Each of these programs has the same five goals, which are to teach the student to understand, determine, design, build, and communicate.

Prospective students and their families are invited to tour the department to see our research and computing facilities. Call or email the department secretary to make a reservation.

Write us at: 4 East 63rd St., Kingston, RI 02881-0006, USA.  
Phone: 401-874-3500, Fax: 401-752-0432.  
For other information please consult the CONTACTS page.  
Page last updated: Wednesday, February 06, 2003

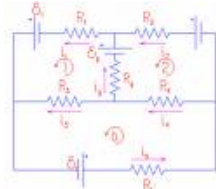
### What is Electrical Engineering?

- **Electrical engineering** is an engineering discipline that deals with the study and application of electricity, circuitry and electromagnetism.
- Electrical engineering is a broad field that encompasses many subfields (some that do not deal directly with electricity)

### Applications of Electrical Engineering

- **Electronics, Electromagnetism, Power engineering**
- **Control engineering**
- **Telecommunications**
- **Signal processing**

## Electronics:



- integrated circuits
- Computers (micro-processor chips)
- electronic amplifier
- VLSI  
(Very Large Scale Integrated Electronics)

## Digital Circuits Laboratory

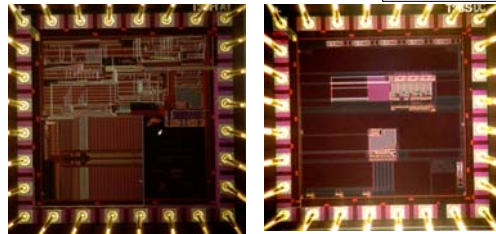
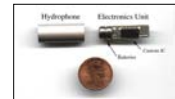
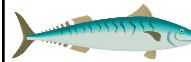


## VLSI



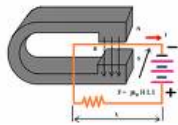
## An Acoustic Data Storage Tag for Long Range Fish Tracking in the Ocean

by Fisher et al



## Electromagnetism (E&M):

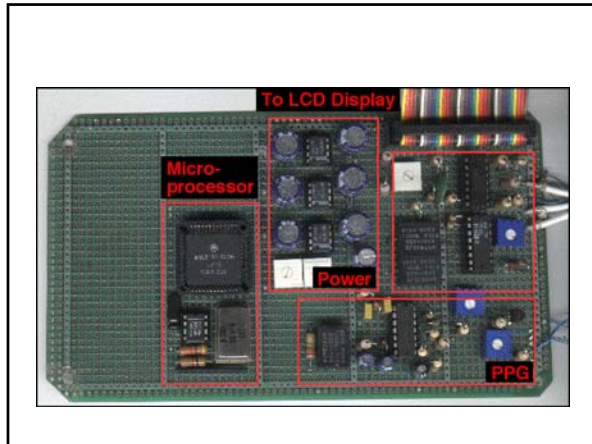
- Radar
- antennas
- stealth aircraft
- Microwave  
– Wireless Comm. Systems
- Optics and lasers



## Power engineering:

- electrical generators
- electric power transmission
- Battery Design:  
– Efficiency, miniaturization,  
protect environment

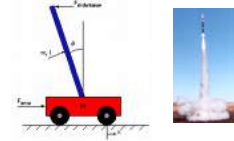




## Control engineering:



- Robotics
- Airplanes - auto pilot
- Inverted Pendulum
  - Rocket control
- cruise control
- climate control
- Processing or Manufacturing plant






### A Computer Controlled Car Using Wireless Remote

Biomedical Engineers have designed a *cricket* controlled car!

### Electronics I Laboratory

### Telecommunications:

- Radio (traditional AM, FM, software radio) 
- Television (traditional, HDTV)
- Wireless communications
  - Mobile (cell) phone, satellite 
- DSL (Digital Subscriber Line) 

### Communication Systems Lab

### Signal processing:

- electronic filters, equalizers
- digital filters
- video and image processing (coding)
  - (MPEG, JPEG, HDTV)
- audio codecs and processing
  - (hearing aids, MP3 players, downsampling)
- Radar, Sonar
  - Navy ships, ultrasound equipment in doctor's office



### Dept. of Electrical, Computer & Biomedical Engineering

- Offer 3 Engineering BS degrees
- Come and visit us in Kelley Hall
  - Student Posters on walls, 2<sup>nd</sup> floor
  - labs run Monday through Thursday afternoons
- You are welcome to send me questions
  - [boud@ele.uri.edu](mailto:boud@ele.uri.edu)
  - Office: Kelley Annex, Room A-117

- Other Related Presentations:
  - Computer Engg: Oct. 11 or 16
  - Biomedical Engg.: Nov. 27 or 29
- Any Questions?
- Thank you for attending today!