

Electromagnetics and Acoustics (EA)

- Hao Ling Antennas, propagation, radar
- Ali Yilmaz Computational electromagnetics
- Andrea Alu Electromagnetic metamaterials
- John Davis RF electronics
- Dean Neikirk MEMS sensors (also Solid State Electronics)
- Mircea Driga Electromechanics (also Energy Systems)
- John Pearce RF heating (also Biomedical Engineering)
- Neal Hall Acoustic transducers
- Mark Hamilton Nonlinear acoustics (Mech. Eng. Dept.)
- Preston Wilson Physical acoustics (Mech. Eng. Dept.)

Outline

1. Overview of MS and PHD degree requirements
2. Overview of EA courses
3. Course registration

1. MS Degree Program

- Three options
 - 8 courses plus thesis (2 semesters)
 - 9 courses plus report (1 semester)
 - 10 courses (NTNR)

Thesis Option

Major

EE698A

EE698B

Supporting Work

- Non-EA courses
- Minimum of 2
- Max of 4

Report Option

Major

EE398R

Supporting Work

- Non-EA courses
- Minimum of 2
- Max of 4

NTNR Option

Major

Supporting Work

- Non-EA courses
- Minimum of 2
- Max of 5

Which Option Should I Pick?

- Don't have to decide right away.
- Any intent on moving onto the PhD, try to do the thesis option to get a taste of research.

Other Details:

- Allowed 1 undergrad elective in the major and 1 in supporting work.
- Up to 2 graduate courses may be transferred from other schools. Form required.

PHD Degree Program

- Minimum requirement: 10 graduate courses (4 must be taken at UT, 2 in supporting work, 3.5 GPA)
- Oral qualifying exam (committee, written proposal, oral)
- Dissertation and final defense (x99R first semester after being admitted to candidacy, and x99w subsequently until done).

2. EA Courses

Undergraduate Courses

- 325: Electromagnetic Engineering (required)**
- 325K: Antennas and Wireless Propagation (elective)**
- 363M: Microwave and RF Engineering (elective)**
- 363N: Engineering Acoustics (elective)**

Graduate EMag Courses:

383L: Electromagnetic Field Theory (Ling)

383M: Microwaves (Yilmaz)

383N: Advanced EMag (Alu)

383V: Computational Electromagnetics (Yilmaz)

392K: Antennas (Ling)

383V: Radar (Ling)

383V: Electromagnetic Metamaterials (Alu)

396K.24: Microwave Solid State Devices (Neikirk)

Graduate Acoustics Courses:

384N.1: Acoustics I (Hamilton)

384N.2: Acoustics II (Blackstock or Hamilton)

384N.3: Electromech. Transducers (Hall or Wilson)

384N.4: Nonlinear Acoustics (Hamilton)

384N.5: Underwater Acoustics (Isakson)

384N.6: Architectural Acoustics (Haberman)

384N.7: Ultrasonics (Haberman)

384N.x: Acoustic MEMS (Hall)

Note: Topics 1, 2 and 3 offered every year, all other topics offered in alternate years

Tentative Course Schedule

Fall 2009

383L: Intro Electromagnetics (Ling)

383N: Advanced EMag (Alu)

Spring 2010

392K: Antennas (Ling)

383M: Microwaves (Yilmaz)

396K.24: Microwave Solid State Devices (Neikirk)

Fall 2010

383L: Intro Electromagnetics (Ling)

383V: Metamaterials (Alu)

Spring 2011

383N: Advanced EMag (Alu)

383V: Computational EMag (Yilmaz)

Tentative Course Schedule

Fall 2009

384N.1: Acoustics I (Hamilton)

384N.3: Electromech. Transducers (Hall)

384N.5: Underwater Acoustics (Isakson)

Spring 2010

384N.2: Acoustics II (Hamilton)

384N.7: Ultrasonics (Haberman)

Fall 2010

384N.1: Acoustics I (Hamilton)

384N.3: Electromech. Transducers (Wilson)

384N.x: Acoustic MEMS (Hall)

Spring 2011

384N.2: Acoustics II (Hamilton)

384N.4: Nonlinear Acoustics (Haberman)

384N.6: Architectural Acoustics (Haberman)

3. Course Sign-Up for the Fall

- 1) **Incoming EA students are strongly encouraged take:**
383L: Electromagnetic Field Theory
384N.1: Acoustics 1
- 2) RA or TA must take at least 9 hours (3 courses) each long semester. RA must take 3 hours in the summer. x97C (“Research Problems”) is a filler course to meet this requirement.
- 3) “Registration form for first-semester ECE graduate students”
- 4) You can get my signature or your advisor’s signature.
- 5) If you can’t decide between two courses, sign up for one and go to both classes the first week of class. Then do an add/drop.

On-line info

<http://users.ece.utexas.edu/~yilmaz/EA/index.htm>