ECE 111
Lecture 1

Matthew Shuman¹

¹Department of Electrical Engineering and Computer Science
Oregon State University

September 22nd, 2016
Goals for ECE 111

1. Does ECE interest me?
2. Am I able to learn and willing to work hard?
3. These skills will help you answer questions about ability and interest.

2. Expectations

   - Instructor
   - Teaching Assistant
   - Student
   - High School vs College

3. Impact on Society

   - Environmental
   - Societal

4. Prior Evaluations
My goal is to help you find success at OSU. Hearing of ECE students getting jobs, traveling, having adventures, starting families, and becoming good humans satisfies me.

Here are your goals for ECE 111:

- Do potential ECE jobs interest me?
- Am I smart and persistent enough?
- Learn some skills that are useful.
Outline

1. Goals for ECE 111
   - Does ECE interest me?
   - Am I able to learn and willing to work hard?
   - These skills will help you answer questions about ability and interest.

2. Expectations
   - Instructor
   - Teaching Assistant
   - Student
   - High School vs College

3. Impact on Society
   - Environmental
   - Societal

4. Prior Evaluations
Is ECE Interesting?

ECE is the hardware and firmware for all electronics.

Here are several companies with significant opportunities for ECE graduates.

- Intel
- NVidia
- SpaceX, Tesla, Solar City
- NASA
- Sawstop
- Startup Companies

\(^1\)Wikipedia
1. Goals for ECE 111
   - Does ECE interest me?
   - Am I able to learn and willing to work hard?
   - These skills will help you answer questions about ability and interest.

2. Expectations
   - Instructor
   - Teaching Assistant
   - Student
   - High School vs College

3. Impact on Society
   - Environmental
   - Societal

4. Prior Evaluations
Ability

ECE is tough, it takes confidence, focus, and effort to succeed in ECE.

- Develop and maintain a growth mindset
- Develop routines that enable efficient learning
- Work hard

\(^2\text{Wikipedia}\)
\(^3\text{Wikipedia}\)
Goals for ECE 111

Does ECE interest me?
Am I able to learn and willing to work hard?
These skills will help you answer questions about ability and interest.

Expectations
Instructor
Teaching Assistant
Student
High School vs College

Impact on Society
Environmental
Societal

Prior Evaluations
These skills are useful for any engineering discipline, but are great for ECE.

- Textbook reading
- Firmware, Mbed programming for FRDM KL46Z Microcontroller
- Python
- Latex, for creating professional documents
- Beamer, for creating presentations. This slideshow was made with Beamer.
- Microsoft Excel, Microsoft Word, Microsoft Powerpoint
- Google Sheets, Google Docs, Google Slides
- Matlab and Octave
- Connect to a server through a terminal.
1. Goals for ECE 111
   - Does ECE interest me?
   - Am I able to learn and willing to work hard?
   - These skills will help you answer questions about ability and interest.

2. Expectations
   - Instructor
   - Teaching Assistant
   - Student
   - High School vs College

3. Impact on Society
   - Environmental
   - Societal

4. Prior Evaluations

Outline

Welcome to ECE at Oregon State University
Instructor Requirements.

- Textbook
- Course Websites (Lecture, Lab, and Canvas)
- Curriculum development: homework, lectures, and lab.
- Learning assessment
- Supervise TAs.
- ABET reporting.
- Office hours and email response. Emails are answered 9 AM - 4 PM on Monday through Friday. Office hours are listed on the OSU website for the instructor and on the signature of e-mails.
Goals for ECE 111

1. Does ECE interest me?
2. Am I able to learn and willing to work hard?
3. These skills will help you answer questions about ability and interest.

Expectations

2. Instructor
3. Teaching Assistant
4. Student
5. High School vs College

Impact on Society

3. Environmental
4. Societal

Prior Evaluations

Outline

Welcome to ECE at Oregon State University
Teaching Assistants are undergraduates that recently did well in ECE 111 and want to help you succeed too.

- Conducting and assessing labs. TAs work together with other TAs to guide students through the lab curriculum and assess student progress on Canvas.

- Office Hours. TAs hold office hours and assist with questions about lab or lecture.
Outline

1. Goals for ECE 111
   - Does ECE interest me?
   - Am I able to learn and willing to work hard?
   - These skills will help you answer questions about ability and interest.

2. Expectations
   - Instructor
   - Teaching Assistant
   - Student
   - High School vs College

3. Impact on Society
   - Environmental
   - Societal

4. Prior Evaluations

Welcome to ECE at Oregon State University
Student Requirements.

- Read the textbook to learn about lecture topics before lecture.
- Attend every lecture and ask clarifying or elaboration questions.
- Take notes during lecture and actively participate in lecture.
- Review and reorganize notes after lecture.
- Work on homework problems the day they are discussed in lecture, not the day they are due.
- Work in study groups after finishing your homework questions to compare method and result for homework questions.
- Maintain a professional attitude during lecture, recitations, and office hours.
Email

Right Gud.

- Check FAQ and Syllabus on course website before writing an email.
- Put course and section in the subject line.
- Use "Dear Mr. Shuman" in the first email. If I reply with Matt in my signature use Matt in future emails.
- Be concise, but thorough.
- Proofread your email.
- Allow 24 hours for a reply.
Goals for ECE 111

- Does ECE interest me?
- Am I able to learn and willing to work hard?
- These skills will help you answer questions about ability and interest.

Expectations

- Instructor
- Teaching Assistant
- Student
- High School vs College

Impact on Society

- Environmental
- Societal

Prior Evaluations
High School Stories (FRC Coach in 2016)
- Solo Coffee Errand
- Prohibited Shorts
- Illegal Pair Walking
- Punitive Food Lines

Stories from Madras, Oregon
- Failing a drug test (dilute)
- Banana bread, hard work, success

What is a common theme of High School?
OSU Stories

Story Time

OSU Stories (Not me, but true) 2001
- Night Train
- Mattresses
- Couch
- Smurfing
- Frozen Yogurt

Stories from OSU Robotics Club 2006
- Slices Pizza
- Parallax
- Boba Fett, Cocktail Dresses, OSU Football
Goals for ECE 111
- Does ECE interest me?
- Am I able to learn and willing to work hard?
- These skills will help you answer questions about ability and interest.

Expectations
- Instructor
- Teaching Assistant
- Student
- High School vs College

Impact on Society
- Environmental
- Societal

Prior Evaluations
Environmental Impact
How has computing impacted the environment?

- Telecommuting
- Smart Homes
- Renewable Energies
- Oil Drilling
- Paperless Companies
- LED fixtures
Outline

1. Goals for ECE 111
   - Does ECE interest me?
   - Am I able to learn and willing to work hard?
   - These skills will help you answer questions about ability and interest.

2. Expectations
   - Instructor
   - Teaching Assistant
   - Student
   - High School vs College

3. Impact on Society
   - Environmental
   - Societal

4. Prior Evaluations
How has computing impacted citizens of the US and the world?

- Freedom of information
- Medical equipment and analysis
- Cell phones
- Social networking
- Weapons
- Drones
- Agriculture
- Dishwasher, laundry, and microwave
- iPod
Evaluations
How tough is this guy?

Student: I understand this is a survey class, but having a lecture where we talk about the same things every time or having someone visit EVERY class is a waste of my tuition money. The lab was useful, but the lecture was pointless and again a waste of my money and time.

Response: The lecture has been restructured to no longer be a survey style course.
Evaluations
How tough is this guy?

Student: "Very good class I was sad that so many people skipped so often."

Response: Attendance is now required and will impact the course grade.
Student: Although in one of the lectures it was said that ECE 111 is just to expose students to what is available to them when they graduate, I would have enjoyed having covered the basics, as that would’ve helped someone like myself, who is fairly inexperienced when it comes to electrical engineering.

Response: This lecture now introduces basic skills.