# ECE 101 Exploring Electrical Engineering - Syllabus (Section 002, Fall 2015)

Instructor:	R. Tymerski	
Office hours:	Tues and Thurs 16:00 – 17:00 in FAB 160-18 (Fourth Avenue Building)	
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Lecture:	Tue, Thr 14:00 – 15:50 in OND 218	
Web Sites:	http://web.cecs.pdx.edu/~tymerski/ece101/ece101.html	
	PSU Desire2Learn - https://d21.pdx.edu	

## **COURSE OUTCOMES**

Students will have the ability to:

- 1. Solve engineering problems.
- 2. Perform research on areas of electrical engineering.
- 3. Write technical reports and summaries.
- 4. Perform simple lab experiments.
- 5. Complete a project involving both design and technical elements.
- 6. Work on a team.

### PREREQUISITE

• Understanding of algebra and trigonometry & a good dose of curiosity

**REQUIRED** (see requirements document for details)

- PSU D2L account
- MCECS account
- Textbooks
- CATME account
- Calculator (basic scientific model)

#### **COURSE GRADE**

- 10% Class participation (attendance, prep, in-class activities)
- 25% Lab reports and homeworks
- 15% Individual project / report
- 25% Group Rube Goldberg project and report
- 15% Group project demo
- 10% Final exam

The final grade is determined by your total percentage score x on a fixed scale (no curve):  $x \ge 90\%$  (A- to A),  $80\% \le x < 90\%$  (B- to B+),  $70\% \le x < 80\%$  (C- to C+),  $60\% \le x < 70\%$  (D- to D+), x < 60% (F)

Exams are closed book and no computer. A calculator and one 8.5"×11" sheet of notes are allowed.

### POLICIES

- Student attendance in class and labs is expected.
- Late work will not be accepted (unless pre-arranged or accident/major illness/family emergency)
- Ethical work standards are to be followed. Academic dishonesty (i.e., cheating) will not be tolerated see PSU's Student Code of Conduct <a href="http://www.pdx.edu/dos/psu-student-code-conduct">http://www.pdx.edu/dos/psu-student-code-conduct</a> .

## ECE 101 Course Schedule (Section 002, Fall 2015)

The following is a rough guide to the schedule. The schedule is subject to change and is for orientation only. The latest information on topics and deadlines will be announced in class. If unclear – ask.

W	Lecture 1	Lecture 2 or Lab	Assignments	R&K Review
1	Intro / orientation	Lecture:	Start individual project	
	What is ECE?	Speaker-Librarian,	CATME, MCECS, D2L	
	Syllabus, assignments	Dweck/SciAm, team	MATLAB	
	marshmallows	forming, assignments,	Reading: R&K ch1, O&L ch4,	
	O&L ch 4: success in		notes	
	classroom, etc			
2	Speaker, Electric circuits	Lab 1: Basic lab equipment	Read: O&L ch8, notes	R&K ch1:
	linear equations	Ohm's law		linear eqs
3	Speaker, Design process	Lab 2: Photo and thermal	DUE: Ind. project	
	O&L ch8: Eng. design	sensors, Series and parallel	HW1	
		circuits	Read: O&L ch5; Hagen; R&K	
			ch2	
4	Speaker, Problem solving	Lab 3: DC motor	DUE: HW1, Lab1+2	R&K ch2:
	more el. circuits		HW2	quadratic eqs
	quadratic equations		Read: O&L ch7+9, notes; R&K	
	O&L ch 5: Problem solving		ch6	
	Hagen: Analysis methodology			
5	Speaker, Technical	Lecture: Time varying signals,	DUE: HW2, Lab3	R&K ch6:
	communication	sinusoids, problem solving;	HW3	sinusoids;
	teamwork	simple trig	Read: notes	
	O&L ch 9+7			
6	Speaker, Time varying	Lab 4: Generating and	DUE: HW3	
	signals, sinusoids, problem	observing time-varying	Read: O&L ch10; R&K ch3	
	solving; simple trig contd.	signals		
7	Speaker, Ethics	Lecture: Problem solving	DUE: Lab4	R&K ch3:
	O&L: ch 10: Ethics and	(trig) - Lab assigned as HW4	HW4	trig
	Engineering,		Read: notes	
	Trig problem solving			
8	Speaker, Digital logic	Lab 5: logic gates	DUE: HW4	
			Read: R&K ch7, notes	
9	Microelectronics	Thanksgiving holiday	DUE: Lab5	R&K ch7:
	systems of equations			systems of
	circuit analysis			equations
10	Team meetings	Project demo (Friday?)		
11	Final exam on Monday 12/7		Project report due 5:00 pm	
	at 10:15 - 12:05		12/9 Wednesday	

- HW-s are due at 14:00 pm Thursday the following week; submission is on D2L.
- Lab reports are due at 14:00 pm on Thursday following the completion of the lab (some labs are one or two-week long). Submission on D2L.
- Team meetings to be held weekly; there will be 10-15 minutes of class time for discussions
- Labs will be held in FAB 60-01 (Tek lab)
- If you need special accommodations please contact me and we will make arrangements in consultation with DRC.