

ECE 322 WINTER 2017: LAB RELATED INFORMATION

The lab meets in Dearborn 208, 3 hours/week. To obtain access to the lab please see staff at the Main Office in KEC, Room 1148.

LAB SECTIONS

<u>Day</u>	<u>Time</u>	<u>Lead TA</u>	<u>Lead TA Email</u>	<u>Office Hours</u>
Tues	2:00pm-4:50pm	Anindita Borah	boraha@oregonstate.edu	Hui Zhang
Wed	3:00pm-5:50pm	Dan Taylor	taylord2@oregonstate.edu	RaviTeja Gajula
Wed	6:30pm-9:20pm	RaviTeja Gajula	gajular@oregonstate.edu	Anindita Borah
Thurs	9:00am-11:50am	Hui Zhang	zhangh2@oregonstate.edu	Dan Taylor

LOGISTICS

- Everyone should pick up their ECE 322 parts kit from the Tekbots store before Lab 2.
- Beginning with lab 2 you will need to bring your Tekbots kit to lab each week. It is your responsibility to have the necessary tools (soldering tools, scope probes, jumper wire, etc.).
- We strongly encourage you to keep a dedicated notebook to keep your lab work.
- Please check your ONID email and Canvas frequently as this is how we will communicate with you.
- Bring a copy of the lab instructions each week. You must at least print the page titled "TURN-IN" as we will be collecting these for grading.
- Work in groups of at least 2 but everyone will build their own power supply.
- Lab work (pre-lab and study questions/report updating from the previous week) will be **due at the beginning of lab that you are enrolled in**. Pre-labs are collected and must be complete before you can begin lab. Please **attempt to complete everything outlined in the lab manual**. The only way to receive no credit is to not do it.
- You will be giving a ~10 min presentation during Week 10. More details to follow.
- One TA will be holding office hours during the section but he is also available to answer lab questions if the head TA is not. Only the head TA can check-off a demo.
- Pre-labs are due at the beginning of the corresponding lab that you are enrolled in. Reports are due the first week of the following lab that you are enrolled in. You may work in any lab (provided there is space), but your work must be turned into your section.

EACH LAB WILL BE GRADED AS FOLLOWS:

Each week in lab is given 100 points.

- Lab 1: Lab Equipment (1 week → 100 points)
- Lab 2: Rectifier and Amplifier (2 weeks → 200 points)
- Lab 3: Voltage Regulators (3 weeks → 300 points)
- Lab 4: Temperature Controlled Fan (2 week → 200 points)
- Lab 5: MOSFET Design (1 week → 100 points)
- Lab 6: Testing and Challenges (1 week → 100 points)

Each lab is graded according the following breakdown:

- Pre-lab design (30%)
- Implementation (20%)
- Test & Verification (25%)
- Study Questions (12.5%)
- Project Report Update (12.5%)
- Extra credit for Challenge Criterion (2%)

GUIDELINES FOR THE PROJECT SPECIFICATION REPORT:

Throughout the term you will be compiling a report that documents your power supply design work. At the end of each lab section, you will update this report with additional schematics and design info. You can find an example/outline of what is expected in the **“Project Specification Documentation”** link under the Important Documents section on the Tekbots website. Please note that this document is intended for reference purposes and not meant as a fill-in-the-blank template. We strongly recommend that you create your own report from scratch so you don't spend the whole term dealing with formatting issues.

Reports should include:

- Schematic of the circuit implemented. All components must be clearly labeled and values shown.
- Description of the circuit (what it does & how)
- Data (must be signed off by TA prior to leaving lab)
- Results and discussion (incl. answers to all questions in the assignment)
- LTSPICE and oscilloscope capture, if appropriate

TENTATIVE SCHEDULE (SUBJECT TO CHANGE)

Week#	Lab Manual Section Title	To Turn In
1	Section 1 – Lab Equipment: Using Your Tools	Nothing
2	Section 2 – Rectifier and Filter Design	Prelab for section 2 Section 1 report
3	Section 2 – Rectifier and Filter Design	Nothing
4	Section 3 – Voltage Regulators <i>Checkpoint 1: Rectifier Demo</i>	Prelab parts: 1,2,3,4 for section 3 Section 2 report TURN-IN sheet from section 2
5	Section 3 – Voltage Regulators	Prelab parts: 5,6,7 for section 3
6	Section 3 – Voltage Regulators	Prelab part 8 for section 3
7	Section 4 – Temperature Controlled Fan <i>Checkpoint 2: Regulator Demo</i>	Prelab for section 4 Section 3 report TURN-IN sheet from section 3
8	Section 4 – Temperature Controlled Fan	Nothing
9	Section 5 – MOSFET Design <i>Checkpoint 3: Fan Control Demo</i>	Prelab for section 5 Section 4 report TURN-IN sheet from section 4
10	Section 6 – Power Supply (Final Assembly and Testing) <i>Checkpoint 4: Final Demo</i>	Section 5 report TURN-IN sheet from section 5 Final Design Specification Report Final Presentation