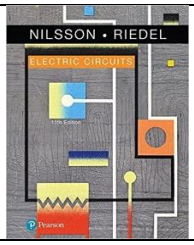
University of Texas at El Paso
Electrical and Computer Engineering Department

EE 2151: Laboratory for EE 2351 Electric Circuits II

Fall 2021 -Syllabus

Instructor:	Martha Torres
Email:	mltorresloz@miners.utep.edu
Virtual Office Hours:	9:00-10:30 am Monday 11:00am – 12:00pm Wednesday Or by appointment (justification is required)
In -Person Office Hours	12:00pm – 1:30pm Friday Or by appointment (justification is required)
Lab Day/Time:	Monday 10:30 am – 1:20 pm CRN 15096 Wednesday 7:30 am – 10:20 am CRN 18869 Friday 1:30 pm – 4:20 pm CRN 12352
Text :	Electric Circuits (11th Edition) . James W. Nilsson, Susan Riedel. Ed. Pearson. ISBN-13: 978-0134746968, ISBN-10: 0134746961 **Note: Older versions could be used.** 
Laboratory Room:	Engineering Building E333 / Blackboard Collaborate
Prerequisites:	EE 1105 or EE 1110 with a grade of "C" or better.

Laboratory Description: Use of oscilloscopes, function generators, and power supplies to test and study electrical networks and their behavior. Technical writing and computer aided circuit analysis and design.

Mandatory Laboratory Requirements:

1) Laptop/desktop, microphone, camera and Internet connection that allows one-on-one video conferencing via Blackboard Collaborate Ultra and submit your work on-time.
2) Blackboard Account: If you have problems with your Blackboard account, please contact UTEP Technology support department: https://www.utep.edu/technologysupport/
4) Kit for electrical circuit Design where breadboard, resistors, capacitors, leds, jumper cables, inductors, and operational amplifiers are included. See Appendix A
5) Analog Discovery Device (Portable Analog Circuit Design) by Digilent. See Appendix B
6) Waveforms software application for the Analog Discovery. (Download for free at https://store.digilentinc.com/waveforms-download-only/)

Optional Laboratory Requirements

1) Multimeter
2) Pliers

Lab Guidelines

Each lab is divided into four important tasks: **Pre-lab, Simulation, Demonstration, and Lab Report**. Students can access the instructions for the Prelab, and Lab Demonstration on Blackboard, and also, they are responsible for working on the Prelab and simulation parts by their own. Note that these parts are to be completed prior to lab session and submitted to Blackboard by the deadline.

Students should be working in their own time in the Demonstration part (build the circuit at home) and showing their work during the formal lab period. Also, students must be prepared to answer questions pertaining to the lab and results. If the circuit does not work at checkout time, the lab will be graded for partial points.

Course Policies:

• You are required to attend the lab section and be on time to show your lab assignment demonstration part.

• Pre-Lab Assignments are work assignments to be completed in preparation for your lab attendance.

• Pre Lab work should be submitted on Blackboard, by the deadline indicated in the course calendar. Late prelabs are not allowed.

• Usually, Pre-Lab work is done by hand. Prelabs should be scanned and uploaded to Blackboard in **PDF** files. Please, DO NOT submit pictures, word, excel, or powerpoint files. (Use scanner application if you do not have scanner and submit only ONE file).

• Simulation work must be completed on Multisim and submitted on Blackboard on the same date as the Prelab due date. Also, Simulation must be showed at the checkout date.

• Lab assignments should be completed and showed before the end of the lab session. For In-person sessions, students must build their circuits AT HOME and present the demonstration part at the LAB.

• Lab Reports are due by the date indicated on Blackboard, and must be written by each student individually in his or her own style. Lab report Template is provided on Blackboard. Please, follow it.

• Prelabs and Lab assignments are provided via Blackboard. Do not miss the due dates. Upload your lab report in PDF form, **only one file**.

• Late reports are not allowed without valid reasons (**written** medical, legal, military, or work justification). Special circumstances will be considered if reported on time.

• If the student does not complete the Prelab and simulation part, demonstration part cannot be presented.

- **If students do not complete or miss the demonstration work, Lab report submission is not allowed.**

IMPORTANT: Accommodations and Rules due to COVID-19:

- **Please stay home if you have been diagnosed with COVID-19 or are experiencing COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, so that we can work on appropriate accommodations and reschedule the assigments if it is necessary.**
- **If you have tested positive for COVID-19, you are encouraged to report your results to covidaction@utep.edu, so that the Dean of Students Office can provide you with support and help with communication with your professors. The Student Health Center is equipped to provide COVID-19 testing.**
- **The Center for Disease Control and Prevention recommends that people in areas of substantial or high COVID-19 transmission wear face masks when indoors in groups of people. The best way that Miners can take care of Miners is to get the vaccine. If you still need the vaccine, it is widely available in the El Paso area, and will be available at no charge on campus during the first week of classes. For more information about the current rates, testing, and vaccinations, please visit epstrong.org**

- **The fall semester will start in face-to-face mode. Students will need to keep working at home on the demonstration part and bring the breadboard with the circuit built to the lab.**

Evaluation and Grading

Each lab exercise will be evaluated in the following manner:

Evaluation	
Prelab	20%
Simulation	25%
Demonstration	25%
Report Objective, Procedure and pictures Result analysis (included on the lab report) Conclusions (included on the lab report	 10% 10% 10%

Letter grades will be assigned according to the following scale:

Grading	
A	100-90%
B	89-80%
C	79-70%
D	69-60%
F	59-0%

Attendance

Lab session attendance is mandatory and will be monitored. Student must contact your instructor if you know you will be absent via email. Absence in more than 3 classes for any reasons will result in being dropped from the class with F. Drops with W only with proper justification.

Email Communication

For email communication, please provide the course name – Your name.
(For example, EE2151 – Martha Torres). Send all messages from your Miners account only.

Academic Conduct

Academic dishonesty will not be tolerated. You must submit your work only. If you are found to be cheating or plagiarizing, you will be subject to disciplinary action, per UTEP catalog policy (http://www.utep.edu/dos/acadint.htm). See the OSCCR homepage at http://sa.utep.edu/osccr/ for more information.

Harassment

Please be aware that harassment is unacceptable in the classroom. Jokes, comments of sexual nature, as well as racist comments will not be tolerated. The student that violates this rule will be sent to the Dean of students for disciplinary action.

American Disabilities Act

If you have a disability and need special accommodations, please contact The Center for Accommodations and Support Services (CASS) at 747-5148, or by email to cass@utep.edu, or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at http://sa.utep.edu/cass/

Note

The instructor reserves the right to make any changes to the syllabus during the term of the semester. The instructor will notify any changes made to the syllabus to the students prior to the lecture week.

Students Resources:

Utep Library : Provide access to full text online or presence, journals, conference papers and eBooks. Website: https://www.utep.edu/library/

Help Desk and ETC Center: For technological issues, software issues, email or Blackboard accounts, please contact: helpdesk@utep.edu or etchelpdesk@utep.edu

University Writing Center (UWC): Provides assistance for writing style and formatting papers or assignments. Website : https://www.utep.edu/uwc/

Math Tutoring Center (MaRCS): Provides tutoring and resource for Math courses. Website: https://www.utep.edu/science/math/marcs/

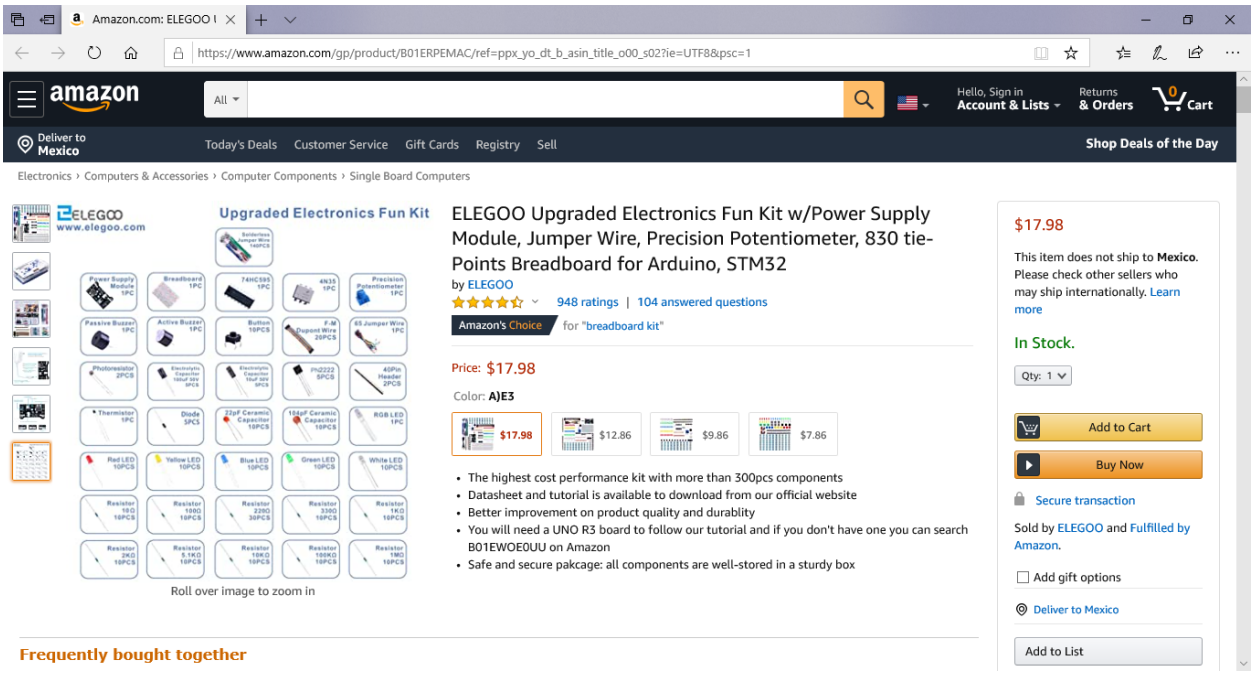
Appendix A

Minimum components required

Equipment	Qty
Breadboard	1
Jumper cables	15
Analog Discovery or similar equipment	1
Components	**Qty**
Resistors	
1Ω	2
10Ω	2
22Ω	2
39Ω	2
47Ω	2
100Ω	**5**
150Ω	**3**
220Ω	2
330Ω	**3**
470Ω	2
1KΩ	**5**
10KΩ	**2**
1.8KΩ	2
2.7KΩ	**2**
3.9KΩ	2
27KΩ	2
4.7KΩ	2
47KΩ	2
100KΩ	2
Inductors	
1mH	1
1µH	1
10µH	1
100µH	1
Capacitors	
22pF	3
104pF	3
10 µF	3
100 µF	3
1 µF	
ICs	
LM741	**2**

Kit for electrical designs suggested

OPTION 1

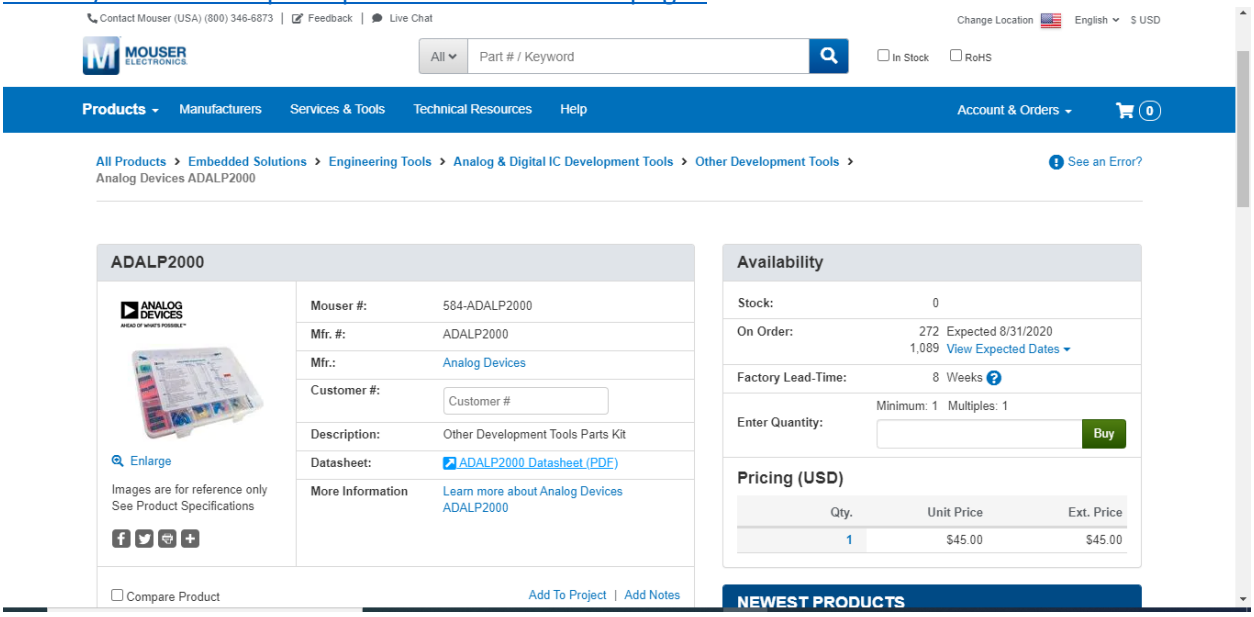


https://www.amazon.com/gp/product/B01ERPEMAC/ref=ppx_yo_dt_b_asin_title_o00_s02?ie=UTF8&psc=1

Also, you need to buy IC LM741 (Max 2pcs), and Inductors : 1mH, 1µH, 10 µH, 100 µH (1pc per value).

OPTION 2

https://www.mouser.com/ProductDetail/Analog-Devices/ADALP2000?qs=xbTpb2TSnD8BNGW%2FTeqs8g==



OPTION 3

Buy the Minimum components required on the list above.

Please check the lead time for the options and choose the best for you

Appendix B

Analog Discovery

Old version	New version	Description
		Analog Discovery 100MS/s USB Oscilloscope & Logic Analyzer

Digilent Analog Discovery is a USB oscilloscope, logic analyzer, and multi-function instrument that allows users to measure, visualize, generate, record, and control mixed-signal circuits of all kinds. Developed in conjunction with Analog Devices and supported by Xilinx University Program. This test and measurement device is small enough to fit in your pocket but powerful enough to replace a stack of lab equipment, providing engineering professionals, students, hobbyists. and electronic enthusiasts the freedom to work with analog and digital circuits in virtually any environment, in or out of the lab. The analog and digital inputs and outputs can be connected to a circuit using simple wire probes; alternatively, the Analog Discovery BNC Adapter and BNC probes can be used to connect and utilize the inputs and outputs.

Driven by the free WaveForms software (Mac, Linux, and Windows compatible) software, Analog Discovery 2 can be configured to work as any one of several traditional test and measurement instruments including an Oscilloscope, Waveform Generator, Power Supply, Voltmeter, Data Logger, Logic Analyzer, Pattern Generator, Static I/O, Spectrum Analyzer, Network Analyzer, Impedance Analyzer, and Protocol Analyzer. For more information, please visit digilent store.
https://store.digilentinc.com/analog-discovery-2-100msps-usb-oscilloscope-logic-analyzer-and-variable-power-supply/

If you are not able to get the Analog Discovery Device , please, try to get another similar tool as ADALM 2000 or ADALM 1000 (from Analog Devices) or myDaq (from National Instruments).