Engr228   Mid-term #1 Review Sheet   Spring, 2020

- This exam is designed to be completed by the average student in 60 minutes or less. This is a closed book exam and I will allow you 90 minutes from when I email the test until it is due in the D2L Dropbox labeled **test1**. The D2L time stamp will tell me when you submitted your test. There will be a significant penalty for late submissions.
- Students with documented disabilities – I will assume that you will start the test at the same time as everyone else, and submit it to the dropbox at the end of your allowed time. You are responsible for providing the other accommodations allowed. Contact me for alternative test times.
- Resources you may use are your calculator and a cheat sheet consisting of one side only of an 8 ½" x 11" sheet.
- The exam will be given at the scheduled time: Monday, April 27, 2-3:30pm. At 2pm, I will email the exam to everyone. I will provide both a .docx and .pdf version of the test.
- **I will be available for questions by email only during the test time.**
- When you are finished, submit a scan, photos, pdf, or docx document of your test into D2L dropbox **test1** no later than 3:30pm on Monday, April 27 **along with your cheat sheet**. You may email me your test directly if D2L is not available.
- You may not communicate with each other about anything related to ENGR228 by any means between 2pm and the time you receive an email message from me saying that the last exam has been returned to me.
- The front page of the test will ask you to sign your name. When you do, I will take this to indicate that you abided by these rules. You must sign your name to get a non-zero grade on the exam.
- I don't really mistrust any of you. I just want to do everything I can to create a level playing field.

Chapter 1 – Circuit Terminology
- a. Two-terminal circuit elements
- b. Passive sign convention
- c. Charge, current, and voltage
- d. Power and energy
- e. Independent and dependent voltage and current sources

Chapter 2 – Resistive Circuits
- a. Ohm's law
- b. Power dissipation in a resistor
- c. Measurements of current, voltage, and resistance
- d. Kirchhoff's current law (KCL)
- e. Kirchhoff's voltage law (KVL)
- f. Series and parallel resistive circuits
- g. Voltage and current division
- h. Analysis of circuits containing dependent sources
- i. Source transformations

Chapter 3 – Analysis Techniques
- a. Nodal analysis
    - i. Super-nodes
- a. Mesh analysis
    - ii. Super-meshes

      b. Thévenin's and Norton's theorems
      c. Maximum power transfer

Laboratories
    1. Lab #1 – Introduction and DC measurements
    2. Lab #2 – Nodal and mesh analysis
    3. Lab #3 – Thevenin and Norton equivalents