

INTRODUCTION TO ELECTRONICS & MAGNETISM

SYLLABUS – Spring 2019

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GENERAL INFORMATION: There will typically be a short preparatory reading requirement each week for the semester, most often from the assigned textbook. There will usually be a one page homework assignment each week based on the content of that week's class. Homework pages are due at the start of the next class. The hands-on project will be assigned early in the semester. Most work on this project is expected to be done in class. The completed project will be due in class one or two weeks before the final exam – exact date to be announced. The teacher may alter the class topic for any given week to allow other material to be covered or to allow for in-class project work.

CLASS SUPPLIES: Please have a 3-ring binder or a specific section of a larger notebook dedicated to this class. You should have a mechanical pencil that takes 0.5 mm to 0.7 mm refill leads and a good eraser. You should have a basic calculator that can do square roots. You will also need a transparent ruler marked with inches. If you can find a small 30-60-90 or 45-45-90 drafting triangle and a small circle template, those will be useful.

REQUIRED TEXT: Electricity, published by DK Eyewitness Books, 2013 Edition (ISBN 978-1-4654-0899-0).

****ASSIGNMENT FOR CLASS 1:** Please read pages 6 and 7 of the Electricity textbook before the first class.

CLASS 1: Class overview & early discoveries about electricity

CLASS 2: Early discoveries about magnetism

CLASS 3: Basic learning about electricity

CLASS 4: Relationship between electricity and chemistry

CLASS 5: Electric circuits & circuit diagrams

CLASS 6: Relationship between electricity and magnetism

CLASS 7: Work with hands-on project in class. Midterm review.

CLASS 8: Midterm Test: Covering material up to this point with some possible bonus questions

CLASS 9: Power generation

CLASS 10: Electromagnetic radiation

CLASS 11: Switching & amplification

CLASS 12: Logic gates & computers

CLASS 13: Today's developments

CLASS 14: Final Test review

CLASS 15: Final Test: Covering material since the Midterm, with some possible bonus questions