

**SYLLABUS: PHYSICS III
PS219, SPRING 2016**

ERAU Daytona Beach Campus
M W F, 1:00-1:50
Room: CoAS 501

Instructor: Jonathan B. Snively
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Phone: (386) 226-6306
Office: 319.05 (CoAS Building)
Office Hours: MWF 2:00-3:00 (or by Appt.)

Textbook: Young and Freedman: *University Physics*, Vol. 3, 13th Edition, Chapters covered include 21-32 + T.B.D.

Prerequisites: PS160 (or 208) – Physics III, MA 243 – Calculus and Analytical Geometry III.
Canvas will be used for important announcement emails and the posting of textbook solutions –

Homework assignments are posted on the website. Please show all details of solutions (i.e., your own work, in legible form). Homework should be submitted to Morgan Matheny's mailbox by 5PM on the day it is due. Late submissions will be graded at 50% credit if submitted before the in-class exam that covers the same material.

Supplementary Instruction will be given Tuesdays, 6:00-7:30PM, in Room 207 by graduate assistant Michael Campobasso; attendance will contribute up to 30% extra credit to your *homework grade (not overall)*.

Exams are closed book and closed notes; non-programmable scientific calculators may be used. Make-up exams are given

only for for University-approved absences with prior notice. The comprehensive **Final Exam** will be on Tuesday, May 3, 12:30PM–2:30PM. A hand-written 3"x5" card is allowed for the final exam only. **Quizzes** will be given occasionally in class (sometimes unannounced).

Grading: Note that exams are by far the most important contributors to your overall grade. Homework and quizzes are an opportunity to practice for these in-class exams!

I reserve the right to apply curves, to adjust grade scale brackets, or to adjust the weightings of the graded materials to maintain an appropriate and fair distribution of grades. Curves are designed to fairly benefit all students. Final grades will always be rounded to the nearest integer.

Attendance will never be taken, but you are responsible for all materials presented in class. **Office Hours** are as posted, and individual appointments are encouraged if you will need to meet at a different time. I am here to help, so please remember: Seek assistance before your grade shows signs of trouble. Please note that the Physics/Chemistry Tutoring Lab offers free tutoring for any ERAU student in PS courses. *Please also note that our SI instructor will provide additional office hours (TBD and subject to change).*

Weighting:	Quizzes	5%
	Homework + SI	10%+3%
	3 Exams @20%	60%
	Comprehensive Final	25%

Total = 100%

**Probable
Grading
Scale:**

A	90 ≤ your grade
B	75 ≤ your grade < 90%
C	60 ≤ your grade < 75%
D	50 ≤ your grade < 60%
F	your grade < 50%

Technology Policies: iPads, tablets, or laptops are allowed only if used without distractions (to you or others) and for purposes directly related to the class. Video recordings are not permitted except when approved as a reasonable accommodation by Disability Support Services. Audio recordings are discouraged, but allowed only if used with a note-taking utility (smartpen or tablet with stylus). Photographs of the board (*never* of Dr. Snively nor class) may be taken, provided they are captured without disturbances. Google Glass is never allowed.

Academic Integrity: *Cheating, plagiarism, and fraud are unacceptable in all forms, constituting serious academic integrity violations.* In accordance with Departmental and University policies, they can result in a failing grade or dismissal from the University.

A Message From The Disability Support Services Office:

ERAU is committed to the success of all students. It is University policy to provide reasonable accommodations to students with disabilities who qualify for services. If you would like to request accommodations due to a physical, mental, or learning disability, please contact the Disability Support Services Office at 226-7916 located on the West side of the Wellness center – Building #20. All discussions are confidential.

Course Learning Objectives and Outcomes:

1. Solve problems involving static electric charges using Coulomb's law and Gauss's law. Appreciate similarities between gravitational and electric fields and forces. Calculate electric fields for various charge configurations by integration.
2. Solve and analyze problems involving electric potential and potential energy. Calculate capacitance and energy storage in capacitors.
3. Define and understand current and resistance, including Ohm's and Kirchoff's laws for circuit problems. Calculate power inputs and losses in circuits.
4. Understand origin of magnetic fields and forces. Calculate magnetic fields using Biot-Savart and Ampere's laws. Calculate inductance and energy storage in inductors.
5. Understand and calculate electromagnetic induction effects using Faraday's law and Lenz's law, i.e., induced emf and electric fields.
6. Analyze simple circuits that contain capacitors (C), inductors (L) and resistors (R). Solve differential equations characterizing RC, LR, and LC circuits.
7. Understand and apply AC steady-state analysis for LRC circuits, understanding concepts of phasors, impedance, resonance, and power.
8. Appreciate Maxwell's equations as the summary laws of electromagnetics. Calculate the energy, momentum, and pressure associated with electromagnetic waves. Understand the electromagnetic spectrum (i.e., from radio waves to visible light to x-rays).