

PHYS 122: Reading Assignment Cycle 3B**Monday, April 13, 2009****Reading assignment:**

Here are the associated reading for Cycle 3B from *Physics for Scientists and Engineers* Third Edition, Volume 2 by Ohanian and Markert. I've organized these by Week instead of lecture since I might re-arrange the order they are covered in class, slightly:

I strongly recommend that you complete each reading assignment prior to the associated lecture. The lectures will be presented under the assumption that you have already read the assigned text.

Week 13: Starting April 13th:

- Read **Chapter 34** as follows:
 - **Read Sections 34.2, through 34.6.** This tells you everything you need to know about “Geometric Optics”

Week 14: Starting April 21st:

- Read **Selections from Chapters 33, 34, and 35** as follows:
 - **Review Sections 33.1.** This tells you one last time how to deal with the Maxwell's Extension to Ampere's Law.
 - **Skim Sections 33.2.** This gives you a qualitative feel for how a spherical wave can result from the motion of a single charged particle. Note in particular the definition of “Poynting's Vector” = $\vec{E} \times \vec{B}$.
 - **Read Carefully Section 34.1.** You need to understand Huygen's Principle.
 - **Read Carefully Section 35.2.** Michelson at Case!
 - **Read Carefully Section 35.3.** You need to be able to explain where to find maxima and minima
 - **Read Carefully Section 35.4.** Again, you need to be able to explain where to find maxima.
 - **Skim Section 35.5.** You should have a conceptual understanding of the single slit interference problem.
 - **Skim Section 33.3.** Your goal here is to get a qualitative understanding of polarization.
- Read **Selections Chapters 36** as follows:
 - **Read Section 36.1.** As a student from Case Western you need to be able to explain the idea of the “ether”.
 - **Read Section 36.2.** Ignore all of the details except for the two Postulates of Relativity right at the start of the section.

- **Skim Sections 36.3 through 36.6.** You want to get the flavor of the main concept that are the “consequences of Special Relativity”. The calculational details are not important.
- **Read Section 36.7.** You want to be able to explain what $E = mc^2$ means anyway.