

SYLLABUS

Textbook: Young & Freedman, UNIVERSITY PHYSICS, 11th edition  
Volume 3 (Pearson/Addison Wesley)

Exam dates: The exams will be held during the lecture hour (2:00 - 2:50 pm)  
(in OH107) on the following dates:

Mon. Sept. 11  
Wed. Sept. 27  
Wed. Oct. 11

Homework: Assignments are given in the Study Guides, along with due dates. Written homework is to be turned in just before lecture on the date due. LATE HOMEWORK WILL NOT BE ACCEPTED. In addition, problems from MasteringPhysics (an online homework submission tutorial system) will be assigned, with details to be discussed in class.

Course Evaluation: Evaluation will be apportioned as follows:

a. Examinations	80%
b. Homework	10%
c. Laboratory Work*	10%

\* To pass the course you must complete the experiments and submit satisfactory lab reports.

Course info: Much course information is available on the WEB -- syllabus, Study Guides, homework solutions, practice exams, etc.

Point your web browser to the URL:

[www.wpi.edu/Academics/Depts/Physics/Courses/ph1130a06](http://www.wpi.edu/Academics/Depts/Physics/Courses/ph1130a06)

Lecture Schedule:

<u>DATE</u>	<u>LECTURE TOPICS</u>	<u>BOOK SECTIONS</u>
1. Th 8/24	Galilean Relativity Einstein Relativity Postulates	37.1
2. F 8/25	Time Dilation Length Contraction Simultaneity	37.2 - 37.4
3. M 8/28	Lorentz Transformation Velocity Transform	37.5
4. W 8/30	Relativity and EM waves Relativistic Doppler Shift	37.6

5. F 9/1 Relativistic Energy 37.7 - 37.8  
Relativistic Momentum

6. W 9/6 Newtonian vs. Relativistic Mechanics 37.9  
Conservation of Energy, Momentum

7. F 9/8 Review of Relativity  
Intro to Waves

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Mon. 9/11 EXAMINATION NO. 1 (ON STUDY GUIDE 1)  
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8. W 9/13 The Particle Nature of Light 38.8  
Blackbody Radiation

9. F 9/15 Photoelectric Effect 38.2

10. M 9/18 X-rays and Compton Scattering 38.7  
Wave-Particle Duality 38.9

11. W 9/20 Atomic Line Spectra 38.3 - 38.5  
Models of the Atom; Bohr Theory  
X-ray characteristic spectra 41.5

12. F 9/22 The Wave Nature of Matter  
De Broglie Wavelength; Electron Diffraction 39.1 - 39.2

13. M 9/25 Energy levels and Wave Functions 39.3, 39.5  
The Uncertainty Principle

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Wed. 9/27 EXAMINATION NO. 2 (ON STUDY GUIDE 2)  
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14. F 9/29 Properties of Nuclei 43.1 - 43.2  
Nuclear Binding and Structure

15. M 10/2 Nuclear Stability and Radioactivity 43.3 - 43.4  
Half-Lives and Radioactive Dating

16. W 10/4 Biological Effects of Radiation 43.5

17. F 10/6 Nuclear Reactions and Q value 43.6 - 43.8  
Nuclear Fission and Fusion

18. M 10/9 Review

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Wed. 10/11 EXAMINATION NO. 3 (ON STUDY GUIDE 3)  
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