

**Physics 272 - General Physics II (Electricity, Magnetism, and Optics) Tue-Thurs section**

Class meets Tue/Thurs 10:30-11:45 a.m in Watanabe 112

Instructor: Tom Browder

Office: Watanabe 233

Office Hrs: 11:45-12:20 Tue/Thu

Please feel free to stop by my office at other times.

phone: (808)-956-2936

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Course WWW page : <http://www.phys.hawaii.edu/~teb/phys272/physics272.html>

Prerequisite: Math 242. **Calculus is used in this course.**

Text: University Physics II by Young and Freedman, 12th Edition

Computers: *A computer account with access to World-Wide-Web is required for the Mastering Physics Exercises*

Some of the homework will be done using the Mastering Physics (MP) system.

Grader: Chris Jackson (e-mail: csjackso@hawaii.edu)

Grading: Problems - 20%, Midterms -35%, Mini-quizzes -5%, Clicker Probs -5%, Final - 35%

There are two midterm exams (notecard and calculator allowed) and six short mini-quizzes (closed book, ~10 minutes).

**To learn physics you must do the homework.**

**Syllabus for Physics 272 (Spring 2010 under construction)**

- Tuesday January 12: Coulomb's Law, Point Charges  
Read Chapter 21  
Homework I: Mastering Physics (MP) Assignment I and Hand in (HI) 21.57, 21.74  
(Homework I is due Tuesday January 19)  
[Slides](#)
- Thursday January 14: Continuous Distributions and Dipoles  
[Slides](#)
- Tuesday January 19: E Fields for Continuous Distributions and Gauss' Law,  
Read Chapter 22  
**Homework I due**  
Homework II: Mastering Physics Assignment II and Hand-in (HI) 21.96, 22.6, 22.58, 22.30  
(Homework II is due Tuesday January 26)  
[Slides](#)
- Thursday January 21: Electric Fields: Gauss' Law  
[Slides](#)
- Tuesday January 26: Electric Potential  
**Homework II due**  
Read Chapter 23  
Homework III: Mastering Physics Assignment III and Hand-in (HI) 23.49, 23.61, 23.62, 23.87  
(Homework III is due Tuesday February 2nd)
- Thursday January 28: Electric Potential  
Mini-quiz (E fields+Gauss' Law)
- Tuesday February 2: Capacitors  
**Homework III due**  
Read Chapter 24  
Homework IV: Mastering Physics Assignment IV and Hand-in (HI) 24.52, 24.54, 24.70, 24.72  
(Homework IV is due Tuesday February 9)
- Thursday February 4: Capacitors

- Tuesday February 9: Current, Resistance and EMF  
**Homework IV due**  
 Read Chapter 25  
 Homework V: Mastering Physics Assignment V and Hand-in (HI) TBA  
*(Homework V is due Tuesday February 16)*
- Thursday Feb 11: Current, Resistance and EMF
- Tuesday Feb 16: Review for Midterm I  
**Homework V due** Homework VI: Mastering Physics Assignment VI and Hand-in (HI) TBA
- Thursday Feb 18: **Midterm I**  
 [Will cover Chapters 21, 22, 23 and 24]
- Tuesday Feb 23: DC circuits  
 Read Chapter 26  
 Homework VII:  
*(Homework VII is due Tuesday xx)*
- Thursday Feb 25: DC circuits and RC circuits  
*Mini-quiz on Kirchoff's Laws*
- Tuesday March 2: Charged particles and currents in a B field  
**Homework VI due**  
 Read Chapter 27  
 Homework VIII:  
 (The notation Inn.n refers to a Mastering Physics problem)  
*(Homework VII is due Tuesday xx)*
- Thursday March 4: Motion in a B field, Magnetic Dipoles
- Tuesday March 9: Biot-Savart, Ampere's Law  
**Homework VII due**  
 Read Chapter 28  
 Homework VIII: *(Homework VIII is due Tuesday xxx)*
- Thursday March 11: Biot-Savart  
*Mini-quiz on Force on charged particles and currents in a B field*
- Tuesday March 16: Biot-Savart, Ampere's Law  
**Homework VII due**  
 Read Chapter 29  
 Homework IX: *(Homework IX is due Tuesday xxx)*
- Thursday March 18: Electromagnetic Induction, Faraday's Law
- Tuesday March 23 - Thursday March 25  
 Spring Break
- Tuesday March 30 : Faradays' Law, Displacement Current  
**Homework IX due**  
 Homework X:  
*(Homework X is due Tuesday xxx)*
- Thursday April 1: Inductance +RLC circuits  
*Mini-quiz on Biot-Savart and Faraday's Law*
- Tuesday April 6: AC circuits  
**Homework X due**  
 Homework XI:
- Thursday April 8: **Review for Midterm II**

- Tuesday April 13: **Midterm II**  
[Covers material in Chapters 25, 26, 27, 28, 29]
- Thursday April 15: Maxwell's Equations, E+M waves
- Tuesday April 20: E+M waves  
Homework XI due  
Homework XII:
- Thursday April 22:
- Tuesday April 27: Light+Optics  
Homework XII due  
Homework XIII:
- Thursday April 29: Geometric Optics  
*Mini-quiz on E+M waves and Optics*
- Tuesday May 4: Lens and Mirrors  
Read up to Chapter 34-4  
Homework XIII due  
Homework XIV:
- Thursday May 6: Review for Final
- **Final Exam: Tuesday May 11, 2010; 9:45-11:45 a.m.**

*Tom Browder*

*Last update: January 22, 2010*

*Feb 9-18, class will be taught by Professor Bob Morse*

*Visit to the FEL (Free Electron Laser) Lab*

*Visit to Varner Lab (High Energy Physics)*

*Visit to the Gorham Lab (Radio Detection of Cosmic Rays) Lab*