

PHY 300: Waves and Optics

Fall 2015

Instructor Information:

Professor Thomas Weinacht - A-102 - (28163) - Thomas 'dot' Weinacht 'at' stonybrook.edu

Office Hours: Wednesday 1:30-2:30pm

TA:

Kevin Wood - B-119 - Kevin 'dot' Wood 'at' stonybrook.edu

Office Hours: Thurs 2:00-4:00pm

Christopher Hayes - D-123 - Christopher 'dot' R 'dot' Hayes 'at' stonybrook.edu

Office Hours: Fri 11:00am-12:00noon

Topics

Free Oscillations, Driven Oscillations and Resonance

Normal Modes for Coupled Oscillators and Continuous Media

Traveling Waves

Maxwell's Equations and Wave Equation for Light

Polarization, Reflection and Refraction

Coherence and Interference

Diffraction

Ray Optics

Gaussian Beams

Textbooks

Vibrations and Waves by A.P. French

Modern Optics by G.R. Fowles

Grading

Homework - 20%

Midterm Exam - 20%

Final Exam - 35%

Laboratory Work - 25%

Fourier Series Applets

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Problem Sets

PROBLEM SET 1 **PROBLEM SET 1**
(Due 09/09/2015)

PROBLEM SET 2 **PROBLEM SET 2**
(Due 09/14/2015)

PROBLEM SET 3
(Due 09/21/2015)
PROBLEM SET 4
(Due 09/28/2015)
PROBLEM SET 5
(Due 10/05/2015)
PROBLEM SET 6
(Due 10/12/2015)
PROBLEM SET 7
(Due 10/19/2015)
PROBLEM SET 8
(Due 11/02/2015)
PROBLEM SET 9
(Due 11/09/2015)
PROBLEM SET 10
(Due 11/16/2015)
PROBLEM SET 11
(Due 11/23/2015)

Labs

Error Propagation Notes

Lab 1 (Performed Week of 09/07/2015)
Lab 2 (Performed Week of 09/14/2015)
Lab 3 (Performed Week of 09/21/2015)
Lab 4 (Performed Week of 09/28/2015)
Lab 5 (Performed Week of 10/05/2015)
Lab 6 (Performed Week of 10/12/2015)
Lab 7 (Performed Week of 11/02/2015)
Lab 8 (Performed Week of 11/09/2015)
Lab 9 (Performed Week of 11/16/2015)
Lab 10 (Performed Week of 11/23/2015)

Makeup labs will be performed in the last week of classes (week of Nov 30th)

Solutions

Solution 1
Solution 2
Solution 3
Solution 4
Solution 5
Solution 6
Solution 7
Solution 8

Solution 9
Solution 10
Solution 11

SPECIAL NEEDS: If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, room 128, (631) 632-6748. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential. Students requiring emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information, go to the following website: <http://www.ehs.sunysb.edu/fire/disabilities/asp>