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
Click Here

Problem Sets
PROBLEM SET 1
(Due 09/09/2015)
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
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