Spring 2-1-2017

PHSX 327.01: Optics

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Objectives:

To study a wide range of optical phenomena using three distinct but complementary theoretical models: geometric optics, wave optics, and quantum optics.

To understand the underlying physical principles of optical phenomena as well as the relevant mathematical tools for their analysis.

Learning Outcomes:

- Will be familiar with geometric optics, wave optics, and quantum optics at the upper undergraduate level.
- Will be able to analyze and utilize a wide range of optical instruments (e.g., spectrometers and interferometers).
- Will be able to apply physical principles and mathematical methods used in optics to other branches of physics, including electromagnetism.

Grading:

Homework:

Problem sets (approximately weekly); some reading assignments.

Exams:

Two midterm exams (Tue Feb 28 and Tue Apr 11)
Closed book but each student is permitted to bring one 4"x6" card.
One final exam (8 AM, Monday May 8)
Closed book but each student is permitted to bring three 4"x6" cards.

**Grading:**

Problem Sets: 20%
Midterm Exams: 40% (20% each)
Final Exam: 40%

**Notes:**

Course **Add/Drop** can be performed online until February 10. **Add/Drop** can be performed with the instructor's and advisor's signatures until April 3.

*All students must practise academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at* [http://www.umt.edu/vpsa/policies/student_conduct.php](http://www.umt.edu/vpsa/policies/student_conduct.php)

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