Oberlin College Physics 110, Fall 2011

Final Exam Information

Wednesday, 7 December

Workshops: The Wednesday–Thursday workshop for this week will be the free-wheeling lab. There are no pre-lab questions.

Review session: I will hold a conference session in Wright 201 (our classroom) on Friday, 16 December, at 2:00 PM.

Exam: On Saturday, 17 December, 2:00–4:00 PM, in Wright 201 (our regular classroom). You may use a calculator, your textbook (HRW), one $8\frac{1}{2}$ by 11 inch page of notes, and chapter 5 on Relativity from the "Notes for Mechanics and Relativity," but no other material. No collaboration is permitted. There will be four problems on classical mechanics, including topics from the two hour exams, and four problems on special relativity. Exam topics are those from previous exams, plus:

Significant figures
Strategies for solving problems: e.g., dimensional analysis, checking results for reasonableness
Systems of particles, center of mass
Angular momentum

Time dilation, length contraction, the relativity of simultaneity
Lorentz transformation, velocity addition formula
Relativistic force, momentum, and energy

Sample exam: In order to give you an idea of what to expect, here is a sample exam.

Additional problem 27: *Cannon shot*
Additional problem 76: *Spring gun*
Additional problem 90: *Train latch*
HRW problem 9-17: *A dog on a boat*

Relativity problem 2: *Muon lifetime*
Relativity problem 8: *Time travel*
Relativity problem 11: *Two events*
Relativity problem 18: *Relativistic energy: a new proposal*