Physics 132 Fall 2004 Final Exam Notes

**Final:** Thursday December 16, 2003, 7–9 p.m.
   - Section 01: Hugel 305, Section 02: Hugel 205, Section 01E: Hugel 100.

**Help Sessions:** Wednesday, December 15, 2004, 3:30–5:00 p.m, and 7:00–9:00 p.m. (rooms to be arranged).

**Topics:** The final exam will be cumulative. It will contain a mix of problems of varying degrees of difficulty. Some problems might include qualitative as well as quantitative questions. Some problems may focus on a single topic or chapter, while others may include topics from several different chapters. Only topics covered in all three sections will be included. Consult the syllabus for the specific list of topics. The following general areas may be covered:

- **Ch. 21–22** Electrostatic forces and fields.
- **Ch. 23–24** Electric potential and capacitance.
- **Ch. 25–26** Electrical conduction and DC circuits.
- **Ch. 27–28** Magnetic forces and fields.
- **Ch. 29–30** Electromagnetic induction.
- **Ch. 31** AC circuits.
- **Ch. 15 & 32** Maxwell’s equations and waves.

Problems will typically focus on the underlying fundamental physics rather than obscure applications or complex mathematical manipulations.

You will be provided with an equation sheet similar to those from previous hour tests.

Copies of hour tests from all three sections will be placed on reserve in the library.

**Lab-Specific Questions:** You will not be responsible for curve-fitting ideas used in labs, nor for propagating uncertainties. However, we hope that you do find those topics useful in your future endeavors. There may, however, be lab-inspired questions on the final. For example, there may be questions which are similar to physical situations you encountered in lab.

**Hints:** Some questions may apply concepts from several chapters to a single problem.

Do not attempt to memorize specific examples. Instead, be sure you understand the basic physical principles.

Review the equation sheet carefully so that you know what the symbols mean and when each equation applies.

Start each problem with a general principle or equation. If you start your solution with a specialized equation that is not on the equation sheet, you may lose substantial credit. Then, if numerical values are needed, substitute them for the appropriate symbols. This shows that you know what the relevant physics is and what the symbols mean.

If you are unable to obtain a result for some part of a problem and a subsequent part uses that result, use a symbol for the unknown result. For example, write “where \( a \) (in m/s\(^2\)) is the acceleration from part b.”

Work clearly and carefully so that your work can be read and understood.

Avoid reckless rounding.

Check your arithmetic.

Get a good night’s sleep!