# PHY 3513 Fall 1998

**Take-Home Final**

Will consist of four questions which may address any of the portions of Callen Chapters 1–7 covered in class or assigned as reading. Problems will be similar to homework problems.

Will be handed out in class on Monday, December 7, and will be due back at the assembly final. You are required to work on your own. No collaboration will be permitted.

**Assembly Final**

Will be a two-hour, closed-book exam consisting of four questions which may address any of the portions of Callen Chapters 1–6 and 7.1–2 covered in class or assigned as reading. Chapter 7 will be covered only in Question 1, which will consist of several short parts. Two other questions will deal mainly with Chapter 4, and the fourth will focus on Chapter 6. I will aim to make the questions a little easier than those in Exam 1.

The exam will be held on Wednesday, December 16 starting at 4:00 pm. The location will be announced in class on Wednesday, December 9. At that time you will also be given a copy of the formula sheet to be provided in the exam.

**Extra-Credit Assignment**

This assignment is voluntary. You can use it to earn extra credit, up to 1% of the overall course score per question attempted, or 10% for the complete assignment. To obtain maximum credit, please explain your reasoning and show all working. *Please hand in any answers to Questions 1–6 separately from any answers to Questions 7–10. Please write neatly and include your name on the front page of each answer set.*

Due no later than noon on Friday, December 18. Please hand to me personally or push under my office door if I am absent.

1. Callen Problems 7.3-4 and 7.3-5.

2. Callen Problem 7.3-7.

3. Callen Problem 7.4-1.

4. Callen Problem 7.4-8.

5. Callen Problem 7.4-22.
   NB: The answer given by Callen is wrong. It should be $c_P = AT^3 + D^2T/(DT + E)$.

6. Callen Problem 7.4-23.

7. Callen Problem 8.2-1.

8. Callen Problem 9.2-1.

9. Callen Problem 9.3-3.

10. Callen Problem 9.4-4.