

## ASEN 5007 Homework Assignment #4

### Chapters 8–10 of Notes

**Due Tuesday Oct 1 for on-campus students, Thursday Oct 3 for CAETE students**

*Please don't forget to attach this cover sheet to your returned homework and write your name(s) on it*

Note: CAETE students please note deadline is Oct 3. That will allow solutions to be timely posted for the Exam 1 review session on Oct 8. The next HW, on Chapters 11,12 and 14 of Part II will be due Oct 17 for on-campus students (one week after first midterm given on Oct 10).

Four exercises:

8.2

9.1

9.5

9.6

Exercises from Chapter 10, assigned in previous years, will be omitted as that Chapter will not be covered to get back in sync after the September 14 class cancellation.

Grading weights: given at the start of each Exercise.

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Exercise 9.6 was included in 2004, expanded from a ASEN Ph.D Preliminary Exam question given in 1998 and 2001. Some of the work here is understanding what is being asked. If you need clarification, please contact instructor in person or by email.

Exercises 8.2 and 9.1 require programming. For 9.5 it is optional but it will speed up solving the symbolic systems. *Mathematica* code is provided in the Notes for 8.2 and 9.1 as a programming guide but is not posted to encourage actual coding (in *Mathematica* or your preferred language, e.g. *Matlab*).

**Note on Mathematica Plotting.** If you are using *Mathematica* Version 6.0 or higher for Exercise 9.1, the `ListPlot` statement should have a non-optional `DisplayFunction` specification (else no plot will appear):

```
ListPlot[ew, AxesOrigin -> {5, -8}, Frame -> True, PlotStyle ->
  {AbsolutePointSize[4], AbsoluteThickness[2], RGBColor[1, 0, 0]},
  PlotJoined -> True, AxesLabel -> {"Log10(w)", "Log10(u error)"},
  DisplayFunction -> Print];
```

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### First Midterm Exam Announcement For CAETE Students

The timeframe for Midterm Exam #1 for remote CAETE students depends on which of the following options are chosen: (1) take it on campus, or (2) remotely through an Educational Officer (EO), who will proctor it. If (1) it should be taken along with the on-campus students on October 10 at class time (9:30 am iat ECCS 1B28). If (2), exams will be given to the CAETE office by October 7 to email to the EO. along with a certification cover page. The deadline for taking and returning the exam will be on the cover page.

*Exam is open book:* posted lecture notes and homeworks are allowed. Review class from Fall 2012 given Oct 8, 2013, should be also recorded.

Exam covers selected material from Part I:

Ch 1: none. Ch 2: all. Ch 3: §3.1 through §3.4, and §3.6.1. Ch 4: none. Ch 5: §5.1–§5.2. Ch 6: skim for terminology but no specific questions on it. Ch 7: all. Ch 8–9: both but skip all sections marked with \*. Ch 10: only §10.2.