

ENEE 474 Power Systems



Fall 2004 Semester

ENEE 474 Power Systems

- Class meets MW 2-3:15
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- Office hours: To be determined!

Textbooks

- *Power System Analysis*, by Hadi Saadat, McGraw-Hill, 1999 (2nd or newer edition if available.)
- *Getting Started with MATLAB 5*, by Rudra Pratap, Oxford University Press, 1999 (this book is optional.)
- *Introduction to MATLAB 6 for Engineers*, by W. J. Palm III, McGraw-Hill, 2001 (this book is also optional.)

HW, Exams, etc.

- There will be two exams and a final.
- HW will be collected and graded.
- Grading:

– 2 exams @ 100 each	200 points
– final exam	150 points
– HW	50 points
– TOTAL	400 points
- HW will be used in close-to-call grades to promote by one level (example: B+ to A–)

Important dates, final exam:

- Comprehensive final exam (Scheduled for Thursday Dec. 16, 1:30-3:30 PM. **We will change this date to Saturday December 11 (or earlier,) from 10:00 AM to Noon.**)
- Last day of classes Dec. 10, last day for this class is on Wed., Dec. 8.
- Last day to drop with W: Nov. 8.
- Study Days: Sat. and Sun. Dec. 11 and 12.

Material covered:

- The first 3 chapters of the textbook
- Quickly go over chapters 4 and 5
- Chapter 6 and 7
- Other material as time allows, choices in order of preference: chap 10, 9, 8
- The textbook is meant as a 2-semester text, hence we cannot cover all of it!

Please observe...

- No smoking, eating or drinking in this room
- If you must talk to another student, please be quiet so as not to disturb other students
- As much as possible, come to class on time
- Avoid doing other work in class, you are here to learn about *Power Systems...*
- *Please do not use pagers and cell phones.*

Outline of today's lecture

- How to install Matlab on your computer and include the “Notebook”
- How to produce an interactive document containing a Matlab program, a figure, and a narrative
- How to use Simulink
- Other examples

Note: Several Versions of Matlab

- The instructions given here may not apply to your specific copy of Matlab, MS-Word and other programs. This is just to illustrate the process. Depending on Matlab version, MS-Word version and computer used, the instructions will vary.

Verify if Matlab and Notebook are installed in this room

- Open MS-Word, file--new
- See if the M-book document template is present
- If not, then the Notebook is not installed
- If it is there, open a new M-book file
- Matlab will automatically open
- Now edit some narrative about the project

Installing Matlab and the “Notebook”

- While installing Matlab, a point is reached where you will be asked if you want to install the “Notebook”
- You will need to know where the file “Winword.exe” is stored, and where the templates directory is located
- In Matlab 6.1, give the command:
`notebook -setup`

Sample problem

- As an example, we shall choose example 7, chapter 12 of the text:
- Give the command: `Chp12ex7`
- If nothing happens, then Matlab does not know where to find this program called “Chp12ex7.m”
- Find it, and modify Matlab “path” so it can find it too!

What do we need?

- We need a drawing program to add figures
- The instructor uses a program called “Designer” by Micrografx
- We also need an equation editor
- The instructor uses a program called “Mathtype” by Design Science, Inc.
- Other programs may be used ...

Steps involved are:

- 1. Write a narrative about the problem
- 2. Draw and/or import figures into the document
- 3. Write a Matlab program to solve the problem and produce graphs and results
- 4. Test the program, make changes in data, etc.

Must we use the Notebook?

- The built-in editor in Matlab can be used
- It would not be as powerful as the Notebook
- It would not include figures and equations
- It would not have all the features of MS-Word
- Both methods were demonstrated today
- **Students in this class will use the Notebook**

To use Matlab programs from the disk in the textbook

- Create a directory to store your programs, for example: C:\power\m_files
- Copy the files from the disk included with the textbook to this directory
- Save a path in Matlab to this directory so Matlab knows about it

Upgrades of the .m files:

- The author of the textbook provides upgrades to the Matlab files on the internet at the address:
- <http://www.msoe.edu/~saadat/psabook.htm>

Homework and announcements

- Go to:
<http://www.enee.umd.edu/class/enee474/>
- From there you can navigate to the material of interest to you.

Simulink Motor Model

