

Introduction to Mathematical Economics: Homework

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Collected Assignments Assignments will be listed below as they are assigned. Each assignment is due before the start of the subsequent class, unless otherwise stated. Homework submissions must be typed and submitted in the specified formats. You should submit a *single* email for each assignment, with your homework files as attachments to that email. Generally one attachment will be a single PDF file containing your answers to all the analytical exercises. The other attachment will be a single program file containing your answers to all the programming exercises.

I require that you type your analytical homeworks and submit them as PDF. I strongly recommend that you use Mathematica, which is available in the labs on campus. (You are welcome to type your analytical homeworks in LaTeX or LyX, as long as you submit a beautiful PDF.)

Make sure you do a Mathematica tutorial before attempting to write up your homework! (One student neglected this and ended up working in the kernel console instead of in a notebook, and then could not save his work.) Submit a *single* email for each assignment. The email should contain one or two attachments. Generally one attachment will be a single PDF (.pdf) file containing your answers to all the analytical exercises. Another attachment may be a single program file. (E.g., .py for a Python program.) A single file should contain your answers to all the computational exercises for each homework. (Exception: you may do some problems in Python and some in Mathematica, if you prefer.)

Discussion Sections Be sure to read the discussion sections for the computational problems. In addition to providing hints, they sometimes include details about the problem *requirements*.

Computational Exercises: I sometimes classify as “computational” exercises that could easily be done with a calculator. These really emphasize the conceptual rather than the computational aspect; I just don’t want you to attempt the computations by hand.

Python Completing the computational exercises in Python will often require NumPy, which is a Python package that is included with most scientific Python distributions. (If you pick a distribution that lacks NumPy, you can download it separately. Windows users can just download the .exe file, double click it, and follow the instructions.)

Once NumPy is installed, you access the matrix class in one of the following ways:

```
#best way (but least convenient)
import numpy as np
x = np.mat('1 2; 3 4')

#2nd best: import just the command you want
from numpy import mat
x = mat('1 2; 3 4')

#worst but most common: import all numpy commands
from numpy import *
```

```
x = mat('1 2; 3 4')
```

That final way is used in the tutorial at http://www.scipy.org/Tentative_NumPy_Tutorial and in the examples at http://www.scipy.org/Numpy_Example_List#head-eaa4642e823ec09457d29d79b568575e9f02b214.

Mathematica Programming In the Torrence and Torrence book, you should read section 8.5. The online Mathematica documentation is also *excellent*. E.g., <http://www.wolfram.com/broadcast/video.php?channel=89&video=409>.

Due Dates Unless otherwise announced, assignments are due *before* the next class starts. Turn in a file named e.g. hw01-lastname.pdf, which is the PDF you generate using Mathematica. (First save your work. Then, after saving your work, try saving as PDF. You may have better luck saving as PDF if you go to the Evaluation menu and disable Dynamic Updating.) Send this PDF to the TA email address provided on the syllabus, but be sure to cc: me. If your homework includes work in Python, you should also attach your IPython notebook.

Current Assignment

Pending.