Numerical Methods in Economics

Exam Session in Summer and Fall 2020

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Exam Structure

As anticipated and discussed, the exam for the summer session 2020 (May, June and July), as well as for the fall session 2020 (September) will take place as a combination of the 5 problem sets uploaded on moodle (with up to 10 points) and a short essay on your choice on numerical economics with a simulation (which will count up to 20 points).

Exam Sign Up

To undertake the exam you need to register in moodle. The dates on line are 1/6, 16/6 e 22/7. In order to be registered for a particular exam date, the essay in moddle must be uploaded by the exam date. Obviously you will have first to register for the exam.

Rules and Criteria for the Short Essay and the Code

Your contribution will be in two parts. An essay that outlines the economic problem and how the simulation will work, plus a text code (i.e. a script) in Python that simulates the code. As discussed during office hours, a very useful library in numerical economics is https://python.quantecon.org/ and also https://quantecon.org/notebooks/ The latter notebooks can be very useful source for your choice of essay. Note that you can also replicate any paper that has a numerical part. The final output will be double: the short paper plus the python script.

1. The length of the essay must around **1500 words** with a tolerance of 10 percent on the length. (10 % weight on the vote of the essay and code)
2. Structure of the Essay (20 % of the weight)
    - The essay must have a clear structure and organization that include an introduction, a main body and a conclusion. You can use the entry on scientific publication in Wikepiedia ($https://it.wikipedia.org/wiki/Pubblicazione\_scientifica$)
    - Each section must have a clear transition and logical order.
    - Use sections and sub sections for clarity.
3. Graphs, Tables, Data and Math (10 % of weight)

- The analysis is more powerful if accompained by Graphs and Tables.
- If you use Graphs and Tables very often they help you to improve the main point of the essay.
- In case you use Charts, use them correctly. They have to include data relevant and accurate, well described, and data must be described accurately in the text.
- In case you use math, define all math symbols. .

4. Bibliography and References (10% of the weight)

   - You always need a reference to avoid plagiarism.
   - The google section on the research output is google scholar *https://scholar.google.com/*
   - Use a coherent form of citation in the text and in the references.

5. Code Structure (50 % of the weight)

   - The structure of the code must be well explained and clear from reading of the script
   - Divide the script into logical groups
   - Comment carefully the lines of the code.
   - The charts produced should be scientifically detailed (with legend, title and subtitle)

Software, Math and Type of Files to Hand in

You are supposed to hand in a a software .pdf and a python script (either a .py file in Spyder or a Jupyter Notebook). The essay can be written with any software. The scientific community uses *Latex*, an open source software for scientific production. Only who is really interested and passionate about scientific writing will use Latex (https://miktex.org/download). Any other software is fine and try to use equations where necessary.