EC958 Games of Strategy

MSc Applied Economics - Online

Assessment Essay 2021/22

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This assessment essay contributes 60% to the final mark for the class. Your assessment essay must be entirely your own work and be fully referenced where appropriate. The maximum word limit is 2,000 words. The deadline for submitting the essay is 5pm on Monday 11th April 2022 (please submit a pdf via Myplace). Feedback and marks will be available by Wednesday 4th May 2022.

The Question

Identify a real world setting you are familiar with in which game theory should be used to analyse decision making. Describe the setting, and abstract from it to consider a simple model of it that is amenable to a game theoretic analysis. Carefully explaining your approach, use appropriate tools of game theory to analyse the setting, and explain what we learn from this analysis. Critically reflect on the use of game theory in understanding real world decision-making problems.

Some Advice

The essay is split into two parts: identification of a real-world environment in which to apply the tools of game theory and a process of abstraction from that real-world environment to model it as a game; and then applying the tools of game theory to analyse that environment and consider what we can

take from the analysis. You are also called on to critically reflect on the use of game theory in this analysis.

You need to demonstrate your understanding of the tools, and that you can apply the ideas in practice. To demonstrate your understanding, you need to ensure you engage in sufficient explanation so that your understanding is clear in your essay. Note that you should select the appropriate tools related to your application. This does not need to include all the tools studied in class, but needs to be sufficiently broad to give the reader confidence in your breadth, as well as depth, of understanding. As such, your application needs sufficient scope so that you can apply an appropriate set of tools, including some of the more advanced ideas.

You have freedom over your choice of application in this essay, so make sure you choose something that is interesting to you.

Your work should evidence exploration of the literature that goes beyond the basic recommended readings in the class to demonstrate independent study and thought. Remember: your work should be your own individual account (this is not group work) and all sources should be referenced appropriately.

Requirements

Your essay is required to demonstrate, inter alia:

1. An understanding of the features of decision-making environments that call for game theory to be used.

2. An ability to identify an environment that commands an analysis using the tools of game theory.

3. An ability to distil the key features of a real-world environment and model this environment as a game.

4. Understanding of an appropriate range of game theoretic tools/concepts.

5. An ability to use an appropriate range of game theoretic tools/concepts in the context of an application, and interpret the results.

6. Reflection on the extent to which this analysis is useful.

References

Below are some sources that you might find useful in completing your essay.

A good starting place, but by no means sufficient in the context of the essay are the textbooks:

- Dixit, A., S. Skeath and D. Riley, (2021), "Games of strategy", 5th Edition, Norton.

- Dixit, A. and B. Nalebuff, (2008), "The art of strategy: a Game Theorist's guide to success in business and life", Norton.

- Dixit, A. and B. Nalebuff, (1991), "Thinking Strategically: The Competitive Edge in Business, Politics and Everyday Life", W.W. Norton Company.

Some other texts on game theory:

- Binmore, K., (2007), "Playing for real", Oxford University Press.

- Osborne, M., (2004), "An introduction to Game Theory", Oxford University Press.

- Rasmusen, E., (2001), "Games & Information – An introduction to Game Theory", 3rd edition, Blackwell.

- Watson, J., (2013), "Strategy: an introduction to Game Theory", 3rd Edition, Norton.

There are lots of useful sources of information on the internet. In particular, check out http://www.gametheory.net/. If you have a lot of time, Benjamin Polak's lectures on Game Theory all the way from Yale are available at https://www.youtube.com/playlist?list=PL70344AC73AE276E3.

For you chosen application, ensure you cite the appropriate literature, if there are existing works, that have considered similar issues before.

Assessment and Submission Guidelines

This assignment contributes 60% of the marks for this class. Each student is required to submit an essay of not more than 2,000 words on the question given.

The standard marking criteria will be used in relation to the requirements of the essay outlined above and the learning objectives of the class.

You must submit your assignment electronically via Myplace following the instructions on the Myplace page for the class.

Normal academic conventions on citation of the works of others and web resources used apply. It is imperative therefore that you very carefully study the University Rules relating to plagiarism at http://www.strath.ac.uk/plagiarism/

The standard late submission penalties apply to this class, please see below.

LATE SUBMISSIONS OF COURSEWORK

The penalty structure is as follows:

Work submitted

Late (less than 1 day) - will have 10 percentage points deducted from the mark allocated

1 day late - 15 percentage points deducted from the mark allocated

2 days late - 20 percentage points deducted from the mark allocated

3 days late - 25 percentage points deducted from the mark allocated

4 days late - 30 percentage points deducted from the mark allocated

5 days late – 35 percentage points deducted from the mark allocated

6 days late – 40 percentage points deducted from the mark allocated

7 days late – a mark of 0 (zero) will be applied to the work

Please read the document in the link below for more details on penalties for late submission of coursework, as well as for details on extensions.

https://www.strath.ac.uk/media/ps/cs/gmap/academicaffairs/policies/Policy_and_Procedure_for_the_Late_Submission_of_Coursework.pdf