PHIL 2253A Introduction to Decision Analysis

HC W6 Mon/Tues/Thurs 4:30 - 5:20 p.m.   Instructor: Dr. Glen Koehn, A202
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Office Hours: Monday, Tuesday, Thursday 2:30-3:30 p.m., and by appointment

Textbook: *An Introduction to Decision Theory*, 2nd ed. by Martin Peterson. (Cambridge 2017)

Course Description: Philosophical approaches to rational decision making, with elementary examples from social and institutional policy, economics, and strategic thinking generally. Topics include: ideals of reason and rationality, coherence, self-limitation and satisficing, expected utility, basic two person game theory, coordination problems, bargaining strategies and some paradoxes of choice. **Antirequisite(s):** Philosophy 2023.

Course Goals and Methods: Through readings and exercises, lectures, class discussions and reflection, students will learn to characterize some competing views about rationality and probability, state and apply Bayes' Theorem, understand the basics of expected utility theory, and say why joint decision theory ("game theory") is of interest to social contract theory and to evolutionary biology. They will be able to describe some puzzles of rationality such as Newcomb's Paradox and the St. Petersburg Paradox and identify solutions to bargaining problems.

Grading: 1. Four in class quizzes @ 15%.   2. One 6-8 page paper 20%. 3. Final test 20%
          NB: Late submissions will be penalized at a rate of 2% per day.

Schedule: The following schedule is provisional, and may be adjusted
during the term. Readings in the Peterson book, except as noted:

Week   **Topics**

1. Sept. 6   Introduction, Ch. 1

2. Sept. 10-14   The Decision Matrix, Decisions Under Ignorance

3. Sept. 17-21   Decisions Under Risk

4. Sept. 24-28   Utility

5. Oct. 1-5   Utility, cont'd   **Test #1, Oct 4**   (Wk 6: Fall Reading Week, Oct. 8-12)

7. Oct. 15-19   Coherence in Deliberation (Thagard, Millgram);   Probability

8. Oct. 22-26   Probability, cont'd   **Test #2 Oct 23**

9. Oct. 29-Nov. 2   Bayesian Decision Theory

10. Nov. 5-9   Causal and Evidential Theories   **Test #3 Nov 5**

11. Nov. 12-16   Causal and Evidential Theories, cont'd   **Test #4, Nov 15**

12. Nov. 19-23   Game Theory

13. Nov. 26-30   Game Theory, cont'd   Social Choice Theory

14. Dec. 3-7   Prospect Theory   Review. ***Paper due, Thursday Dec. 6***.

The Appendix to Course Outlines is posted on the OWL course site.