AMS 80A: Gambling and Gaming (Spring 2014)
General course information

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Office hours* Tue 12-1pm; Wed 2-3pm

Section 01A: Monday 9:30-10:40am (372 Baskin Engineering); TA: Nicole Mendoza
Section 01B: Monday 11:00am-12:10pm (372 Baskin Engineering); TA: Pedro Regueiro
Section 01C: Wednesday 8:00-9:10am (165 Baskin Engineering); TA: Nicole Mendoza
Section 01D: Thursday 8:30-9:40am (165 Baskin Engineering); TA: Nicole Mendoza
Section 01E: Friday 12:30-1:40pm (372 Baskin Engineering); TA: Pedro Regueiro

Web page: http://courses.soe.ucsc.edu/courses/ams80a/Spring14/01

Lectures: Tuesday, Thursday 4-5:45 pm (Oakes Acad 105)
Discussion sections:
Course description (from the registrar): Games of chance and strategy motivated early developments in probability, statistics, and decision theory. Course uses popular games to introduce students to these concepts, which underpin recent scientific developments in economics, genetics, ecology, and physics.

Course objectives: To provide an introduction to basic concepts of probability (and, to a smaller extent, decision theory) motivated by and illustrated with common games of chance. Although some key ideas of statistical reasoning will be introduced, note that this is not a course on statistical data analysis.

Background: There is no formal prerequisite, in particular, no background on probability or statistics is required. The required mathematical background is also limited, although good working knowledge of algebra will be assumed.

Textbook/course material: Some of the course material will be taken from draft book:

Rodriguez, A. and Mendes, B. (2013) Gambling and Gaming

a pdf of which is available from the Resources link of the course site in eCommons. However, the lecture notes are based on several other sources, and in particular, involve more detailed development of background on discrete probability than what is included in the draft textbook above. Further reading materials will be made available as needed through the course web page and/or eCommons.
**Reading:** The material in this course is cumulative and may go quickly. It is expected that you will stay up to date by going over the lecture notes, reading from relevant reading materials, and practicing with the problems from the homework assignments.

Note that the lecture notes will not be made available on-line. Therefore, although attendance of lectures is entirely optional, it will be your responsibility to obtain the notes from any classes missed and to catch up on the corresponding course material. Attendance of the discussion sections is also optional, but it is strongly encouraged. The TAs will be discussing homework problems, and working through additional examples that supplement the material covered in the lectures.

**Homework:** Homework will be assigned (on a weekly or biweekly basis), but will not be collected or graded. Detailed solutions to several homework exercises will be given during the discussion sections and, for some problems, during lecture. Even though homework will not be graded, it is critical for good performance in the course to work on the homework problems on a consistent basis. This will enable you to develop facility in probabilistic thinking and statistical reasoning through regular practice, and, of course, help you prepare for the exams.

**Movie summaries:** Five movies will be screened as part of certain classes. One of them provides a historical perspective of gambling in the US, whereas the other four (from the “Breaking Vegas” series of The History Channel) focus on various approaches followed by groups of players to increase their chance of winning on the games of roulette, blackjack, and craps. One week after each movie is screened, you must submit (in class) an one-page summary for the movie, including a reference to events in the beginning, middle and end of the movie. The lowest score will be dropped when computing your total score from the movie summaries. This is meant to account for any reason that might prevent you from turning in one of the summaries. Late movie summaries will not be accepted.

**Exams:** There will be two exams during the quarter (with tentative dates below) and a final:

- Exam 1: Thursday May 1
- Exam 2: Tuesday May 27
- Final exam: Monday June 9, 12-3pm

Note that the final exam date and time is designated by the registrar. The other two exams will be in-class during lecture time. All three exams will be closed-book, closed-notes, but you may bring one (letter size) piece of paper with notes and formulas on both sides. The final exam will be comprehensive. For all practical purposes, there should be no make-up exams. Requests for make-up exams will be considered only for truly exceptional circumstances.

**Course grade:** Movie summaries: 15%; Exams 1 and 2: 50% (25% each); Final exam: 35%

**Accommodations for students with disabilities**

If you qualify for classroom accommodations because of a disability, please submit your Accommodation Authorization Letter from the Disability Resource Center (DRC) to me (outside of class time) as soon as possible, preferably within the first week of the quarter. Contact DRC by phone at 831-459-2089 or by email at drc@ucsc.edu for more information.