AMS 80A: Gambling and Gaming (Spring 2015)
Course Description

March 30, 2015

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<tr>
<th>Instructor</th>
<th>Name</th>
<th>Office</th>
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<td>Teaching Assistant</td>
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Lectures: Every Monday, Wednesday, Friday 12:30-1:40 pm (Classroom unit 001)

Course Webpage: https://courses.soe.ucsc.edu/courses/ams80a/Spring15/01/pages/ams80a

Lab sessions:
Section 01A: Monday 5:00pm-6:10pm (165 Baskin Engineering); TA: Brenton Blair
Section 01B: Monday 6:30pm-7:40pm (165 Baskin Engineering); TA: Brenton Blair
Section 01C: Tuesday 12:00pm-1:10pm (165 Baskin Engineering); TA: Kenna Nelson
Section 01D: Thursday 8:30am-9:40am (165 Baskin Engineering); TA: Brenton Blair
Section 01E: Friday 9:30am-10:40am (165 Baskin Engineering); TA: Kenna Nelson

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.

Background: There is no formal prerequisite, in particular, no background on probability or statistics is required. The course also does not require any calculus background. Required mathematical background is also limited, although good working knowledge of algebra will be assumed.
**Course objectives:** This course is directed to provide introductory concepts of probability motivated by and illustrated with the games of chance. It is to be kept in mind that this course is not a formal statistical data analysis course, though through the game of chances and probability, some statistical reasoning will be introduced throughout.

**Textbook/course material:** I will teach every class with a number of slides. Slides will be posted after every class and they will act as lecture notes. 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 in the course website. However, the lecture notes are based on several other sources. Further reading materials will be made available as needed through the course web page and/or eCommons.

**Reading:** All lecture notes and relevant reading materials of this course will be made online. It is expected that you will be up to date by going over the lecture notes, reading from relevant materials as suggested in the class and practising homework assignments. Note that attending lectures is entirely optional, but it is your responsibility to catch up with the course material. Attendance of the lab 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. Also it might be helpful to clear any doubts that you have while reading course materials.

**Homework:** Homework will be assigned (on a weekly or biweekly basis), and will be due a week or two weeks later. Only two homework problems will be randomly graded in each assignment. Detailed solutions to several homework exercises will be given during the discussion sections. 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. Homework deadlines are strict and can only be altered under special circumstances after discussing with the instructor.
**Movie summaries:** One important part of the course is a few movies on gambling. 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) a one-page summary for the movie, including a reference to events in the beginning, middle and end of the movie. All movie summaries will be graded and only the top four scores among five will be taken.

**Exams:** There will be two exams during the quarter (with tentative dates below) and a Final: Exam 1: Friday May 1  
Exam 2: Friday May 29  
Final exam: Monday June 8, 4-7pm  
Note that exam 1 and 2 will be in-class during lecture time, while the venue of the final exam will be designated by the registrar. All three exams will be closed-book, closed-notes, but you may bring one A4 piece of paper with notes and formulas on both sides. Exam 1 will be based on whatever is covered until exam 1. Exam 2 is based on whatever is covered until exam 2, though questions will be mainly on the materials covered after exam 1. 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: 20%; Homework: 10%; Exams 1 and 2: 20% each; Final exam: 30

**Note:** Misconduct during the exams (such as copying the work of another student or using any non-permissible material) will not be tolerated under any circumstances. Any student(s) caught/suspected of cheating will be reported for academic misconduct.

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.