

1 Course: Maths 152, Basic Probability

Maths 152 is an elementary course in Probability, not involving Calculus. Topics include: elementary set theory; permutations and combinations; sequences and the binomial theorem; finite, conditional and a posteriori probability; common statistical measures. Prerequisites: Grade of C or better in MATH 118 or MATH 161 placement.

2 Instructor Information

I am (Dr.) David A. SANTOS. I have been teaching full-time at CCP since the autumn of 1999. I received an AB in Mathematics from the University of Chicago in 1987 and a Ph.D. in Mathematics from the University of Michigan (Ann Arbor) in 1993. My office is on the second floor (uppermost level) of the Bonnell Building: B2-14. My office phone is (215) 751-8698. My email is dsantos@ccp.edu. My website is at <http://faculty.ccp.edu/faculty/dsantos>. I like camels (the quadrupeds, not the cigarettes!).

3 Office Hours

Mon-Wed-Fri	12:20–1:20AM, 3:30–4:30PM
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4 Course Pre-requisites and Goals

The formal pre-requisite for this course is Maths 118 (Intermediate Algebra). In practice what you will require are the ability to follow multi-step problems and solve simple linear equations.

5 Syllabus

The semi-official syllabus for this course, with all the caveats that the word “semi-official” entails, can be found here:

http://faculty.ccp.edu/dept/math/PLACEMENT/m152_syllabus.pdf

6 Class Website

My webpage at CCP is at

<http://faculty.ccp.edu/faculty/dsantos>.

Click on the Probability link to see old exams and assignments that I have given when I have taught this course previously. Also, you will find there handouts, exams, and assignments for the current semester as they are given in class. Thus if you happen to miss a class when I have given a handout, you can refer to the website. This is particularly useful as I tend to

dispose of any extra copies that are not picked-up by students on the day that I distribute handouts—this helps me keep the clutter in my office to a minimum.

7 Textbook

Buying the textbook is optional. No assignments will be collected from the textbook. I will be using *Math 152: Probability* by LIAL and HUNGERFORD, available at the CCP bookstore.

If you need extra reading material, I suggest the (very cheap!) Schaum’s Outline in *Probability* by Seymour. LIP-SCHUTZ. If you care to know my undergraduate textbook for equivalent material was Sheldon Ross’ *A First Course in Probability Theory*, but this book may be a bit too hard.

I have written a series of notes that provide a great deal of examples, but they are rather sketchy. You can download these notes for free by going to my website, clicking on the link for “Lecture Notes” and then clicking on the link for “Probability Lecture Notes.” I will tend to follow the order in my notes. Although you may certainly print them out at the Computer Lab, please do not abuse the College’s computers by trying to print-out all these 105 pages. You will only get a crowd of angry students casting at you the evil eye for hogging the printers.

8 Topics Outline

Disclaimer: this is a *very fast-paced course*. There will be *little time—if any—for review*. *What follows is an approximate outline of the pace of the course. We may go faster or slower, contingent on class response.*

- **Week I** Chapter 8: Sets. Applications of Venn Diagrams.
- **Week II** Chapter 8: Introduction to Probability. Basic Concepts of Probability.
- **Week III** Chapters 8: Conditional Probability and Independent Events. Bayes’ Formula.
- **Week IV** Chapter 8: Review. **Exam I**
- **Week V** Chapter 9: Permutations and Combinations. Applications of Counting.
- **Week VI** Chapter 9: Binomial Probability. Probability Distributions and Expected Value.
- **Week VII** Chapter 9: Markov Chains. Decision Making.
- **Week VIII** Chapter 9: Review. **Exam II**.
- **Week IX** Chapter 10: Frequency Distributions and Measures of Central tendency. Measures of Variation.

- **Week X** Chapter 10: Normal Distributions.
- **Week XI** Chapter 10: Normal Approximation to the Binomial Distribution.
- **Week XII** Chapter 10: Review. **Exam III**
- **Week XIII** Extra Material: Game Theory.
- **Week XIV** Review. **Final Exam. Date: TBA**

9 How your final grade is determined

The way your final grade is computed is **not negotiable**. There will be 3 topical exams (each worth 20 marks) and one *comprehensive final exam* (worth 40 marks). *None of the exam grades will be dropped*. The grading scale is as follows.

Range	Class Grade
100 – 85	A
84 – 70	B
69 – 55	C
54 – 45	D
44 – 0	F

10 Quiz and Exam Dates

These will be announced during class. It is your responsibility to attend to class and stay current with the work required of you.

11 Missing an Exam

The exams will not be made up. If you miss an exam, for whatever reason, your grade on the final exam will be multiplied by an appropriate factor in order to compensate for an exam.

12 Missing the Final Exam

Here you are in trouble! I will give you an **I**, incomplete grade, that must be made up during the first to weeks of the next semester, otherwise it turns into an **F**. Don't miss the final!!!

13 Absences

If you are absent (without a valid excuse) six or more hours during the semester, I have the right to drop you from class. This does not mean that I will drop you, only that I *may*. If you should drop the class, do so before the deadline passes. Verify with the registrar's office that you are indeed dropped from class, they tend to make mistakes. I tend to give "F"'s to

students who stop showing up for class and do not earn enough marks to get a "P" if they stop showing up.

If you expect to miss class and have a good excuse, please leave a message in my voice mail, or, preferably, send me an email. This will be especially important if you miss an exam. For very good reasons, which might amuse you to know, I tend not to reply to phone calls. I do, however, reply to all email. My email is dsantos@ccp.edu.

If you miss a class, it is your responsibility to get the lecture notes from a classmate. I never have written plans of my lectures since I lecture contingent on the response that I get from the audience.

14 Tutoring

The maths lab in B2-36 may have tutors for maths 152. This depends on the availability of personnel, which is something I cannot control. Ask repeatedly in that office whether tutors or workshops are given for this class.

15 Extra Credit

The need of extra credit arises from your inability to cope with the minimum class burden given. In such a case, this means that you have not acquired the necessary know-how in Probability to be deemed proficient in the course, hence you must repeat the course. Extra credit will **NEVER** be given, so do not ask for it!

Many a student with histrionic abilities come to me at the end of the semester telling me that they need the class to graduate, that this is their last class at CCP, that they need a good grade in order to keep or get a scholarship, etc. **Don't bother me with this! I don't care! This is not my concern!** Every student will pass the class the student like every other student: through hard work and through passing the exams. Do not expect me to make special allowances for you: don't even suggest it, you will only make me angry.

16 Practice Exams and Review for Tests

I will strive to have practice exams ready a week before the actual exam. Review will only occupy one hour of lecture, and thus I may not be able to go over every problem on the practice exam. Therefore, I shall only concentrate on the problems that I deem most difficult. You should try the simple problems on your own. **You are allowed to use your lecture notes, calculators, and/or books during exams.** You may not use someone else's lecture notes, calculator, etc. during exams

(for obvious reasons). Exams will last the whole period and will closely resemble the practice exams. Old exams (with solutions), old practice exams (without solutions) and old assignments (with solutions) are available at the class website.

17 Appropriate Classroom Behaviour

- Please be on time for class. It is distracting to me as to your other classmates to have people come in late.
- Please switch off pagers and cell phones before entering the classroom.
- Abstain from bringing friends or small children to the classroom.
- Be courteous and considerate to your other classmates and to me.
- Do not ask for extra credit, as none will be given.
- Mathematics is a cumulative subject. Do not expect to understand subsequent material if you have not mastered current material.
- Homework may be assigned, but not collected. Do the assigned homework.
- The best way to ask a question is something like: "How did you get from the second step to the third step?" or "What does it mean to complete the square?" Asseverations like "I don't understand" do not help me answer your queries. Moreover, not understanding is a psychological problem, not a mathematical one, and I am only paid to help you with your mathematics.
- I am very patient, but I will not tolerate boorish, badgering behaviour. If it comes to me having to call security to remove you from the classroom, and if I ask you to leave, please do leave. You should be able to return the next day, and I will not penalise you for a bad behaviour

day. I don't keep grudges! Beware: if I must call security, an incident report will be written and it will go into your record. Let us keep our teacher-student relationship civil!

18 Statement on Disability

Students who are registered with the Centre of Disability must inform the instructor by the end of the first week of classes if special accommodations are required.

19 Making a Complaint

It is always best to inform your instructor immediately about any concerns you may have. If you are having a problem in any class, the first step is to make an appointment with the instructor to try to resolve the problem directly. If you have been unable to resolve it with your instructor, you may use a student complaint form, available at the Chair's Office in W2-7.

When you fill out the student Complaint Form you will be required to fill out your name, course, and other identifying characteristics, as anonymous complaints will not be paid attention to.

Upon receipt of the complaint form, the Chair will contact you and will contact me.

Complaining with the Chair will not change your grade, as only I can do that.

20 Spelling

I use British spelling. So I end my verbs in "ise" rather than "ize," I use the ending "our" rather than "or" (as in "colour") and I use the correct spelling "shew" rather than "show." If you have a problem with this, tough break!