

Southern Polytechnic State University Math 2260: Intro to Probability and Statistics

Spring, 2012	January 5 – April 27, 2012 plus Final Exam			
CRN 2157	MATH 2260 / 005	1:00 – 2:15 pm	-T-R-	Q-109
CRN 2169	MATH 2260 / 006	2:30 – 3:45 pm		Q-108
Text	Understandable Statistics , 9 th Ed by Charles Brase & Corrinne Brase			
Calculator	No calculator is required, but one is suggested. If you wish to use one, the only calculator which will be supported in this class is the TI-83 or TI-84.			
Prerequisite	A grade of "C" or higher in MATH 1113, Precalculus, or equivalent.			
Web Site	http://educate.spsu.edu/aadler/notes.htm			
Instructor	Dr. Alfred Adler			
Email	aadler@spsu.edu	I do answer my email, even on weekends.		
Phone	(678) 915-7412	If I can't answer, please leave a message. I will get back to you as soon as I can.		
Office Hours	Norton Hall R2-324 T-R 12:00-12:45 & by appointment.	Times subject to change. Please check office door. I will generally be available before and after class. Please contact me in advance so that we will not miss each other.		
Last Revised	Syllabus was last changed: 6 January, 2015			

Tentative Schedule:

(please verify dates)

Last Drop/Add date	January 8, 2015
Last day to withdraw with grade of W	February 25, 2015
Spring Break	March 1-7, 2015
Last Day of Class	April 27, 2015
Midterms tentatively scheduled	Feb 3, Mar 12, Apr 9
Final Exam	TBD

Regular attendance is essential. It is strongly recommended that students attend every class.

Exam dates will be announced in class approximately a week before each exam.

Any exam which is canceled due to University or building closure will automatically occur at the next regularly scheduled class period.

Course Description: Topics include expectation, independent and conditional probability, combinations and permutations, organization and analysis of data, standard probability distributions, and hypothesis testing. The emphasis is on the applications and methods with applicability in technical and managerial fields.

Upon completing this course students should be able to:

- Calculate elementary probabilities.
- Compute probabilities related to normal random variables.
- Construct confidence intervals.
- Construct and evaluate hypothesis tests.

The emphasis in this course concentrates on understanding and problem solving. The purpose of problem solving is not merely to obtain an answer but also to extend and cultivate the ability to think independently and creatively, beyond the mere application of computing rules. During the course, you are encouraged and expected to develop a conceptual grasp of the topics and to develop the ability to move effortlessly between mathematical results and their interpretations.

A substantial portion of class time will be devoted to problem solving and you will be expected to work a significant number of problems for homework and on exams. Solutions to some of the assigned homework problems will be discussed in class. Exams will consist primarily of problems similar to those suggested for homework. **Make no mistake, it is impossible to pass the exams without doing the homework on a regular basis. This class is as much about commitment as it is about ability.**

Prerequisites: An appropriate ability in algebra is required including a grade of “C” or better in Precalculus, Math 1113 or its equivalent. As a general rule, any facts, formulae and techniques which you need to solve homework problems will probably be needed for exams. Students with C or lower in recent math courses should carefully re-evaluate study habits AND allocate additional study time. The keys to success are commitment, self-motivation, self-discipline and the management and effective use of study time.

Class Policies

Communications: The primary means of communications between the instructor and the students will be announcements and discussion in class. Out-of-class communications between the instructor and the students will be via the class web site and if needed, via email using university email accounts.

Class Discussion: Meeting the course objectives requires effective two-way communication. In-class discussion is essential to keep the material interesting and serves as important feedback to help me understand your grasp of the material. You are encouraged to ask questions as they arise. If you are having trouble with course material, please see me as soon as possible.

Class Web Site: The URL for the class web site is on the first page of this syllabus. All class material, including lecture notes, will be distributed via the web site. Be certain to visit the web site often to obtain all handouts and assignments. *Students are responsible for all materials and announcements made in class, whether or not they are present.* Much of this information is also posted on the web site. Documents on the web site may be updated from time to time. Generally any files that have significant updates after they are first posted are specially marked. If you miss a class, it is your responsibility to obtain notes from the web site and/or from a classmate. Absence from class is never a valid excuse.

Changes to Syllabus, etc.: If, for some reason, changes need to be made to this syllabus or any other course information at a later date, announcements will be made in class and/or changes will be made on the class web site. Once an announcement has been made or changes have been posted on the web page, the new version of the syllabus or other document supersedes previous version. Absence from class when an announced change is made is not a valid excuse. *By remaining enrolled in this class, you are indicating that you have read, understand and accept all rules, regulations and guidelines contained in this syllabus.*

Preparation: Come to class prepared. Read ahead and review class notes. Do all homework promptly. Students are responsible for all materials and announcements made in class, whether or not they are present.

Attendance: Please arrive on time for all classes so you do not disturb your fellow students. During class periods when a lecture is being given, show respect for the other members of the class by holding conversations to a minimum. Likewise, please silence all beepers, pagers, cell phones and computers while in class. While attendance is not mandatory, *attendance will be taken* and students are responsible for all materials, assignments and announcements covered in class. *Class attendance is strongly encouraged and may be used to supplement the grading system.* If you miss a class, it is your responsibility to obtain notes from the web site and from a classmate. Absence from class is never a valid excuse. Most of the material for the exams will be covered in class before the exam. If you miss a class, it is your responsibility to obtain notes from the web site and from a classmate. Absence from class is never a valid excuse. If, for **any** reason, you miss one week or more of lecture you should strongly consider withdrawing from the course.

Calculators: No calculator is required for this course. If you wish to have a calculator for exams, the only one supported by the class is a TI-83 or TI-84 calculator. You must provide your own calculator; one will not be provided for you. Calculators may be used in classes and examinations for calculations and graphing only. Stored data or programs about this course are not allowed in calculator memory. All questions on exams are assumed to be solved without the use of a calculator, i. e. “*exactly*” or “*algebraically*”, unless stated otherwise.

Special Accommodations: Students who believe they may need accommodations are encouraged to contact the counselor working with disabilities at (678) 915-7244 as soon as possible to better ensure that such accommodations are implemented in a timely fashion. If you have medical or other similar information that I should be aware of, please meet with me as soon as possible. *All discussions will remain confidential.*

Exams and Grades

Review Sessions: Time will be set aside at the beginning of each class to discuss homework assigned in the previous class and other outstanding questions. Class time will also be set aside before the each exam for review of the material that will be covered on the exam. All students are expected to be prepared and to contribute to these review sessions. This is one of the best opportunities for you to ask any outstanding questions and to have class discussions on topics that still seem confusing. Remember that if you are confused about a subject, other students probably are also confused about it.

Homework: A list of problems from the textbook will be assigned for each topic. The problems are listed on the last page of this syllabus. As soon as we finish a section of the textbook, the related homework problems are automatically assigned, whether or not an announcement is made in class. It is essential that you try to solve these problems immediately after the material is covered in class. The homework problems are intended to provide practice, which will help prepare you for the exams. The assigned homework sets represent a minimum number of problems for the material covered; if you find particular areas to be difficult you should find similar problems to those assigned and do those also. Many exam questions may come directly from or be very similar to homework problems. All homework should be done before the next class. At the beginning of the next class we will work some of the homework problems (chosen by the class) on the board.

Quizzes: Unannounced quizzes may be given periodically to generally encourage attendance in class, to encourage keeping up with the class and to encourage students to promptly complete homework assignments. Questions on the quizzes will generally be taken directly from the homework due that day. The quiz grades will also become part of the course grade.

Exams: We will have 3 midterm exams and a comprehensive final exam. Tentative exam dates are given in the course schedule on the first page of the syllabus. Actual exams dates will generally be announced about one week in advance. Each mid-term exam may include any material covered in the class, homework and other class assignments with emphasis being placed on the material covered in class. If you know you will be missing an exam, please see me *ahead of time* to see what can be arranged. It may be possible to make special arrangements. There will be *no make-ups* without prior approval or life threatening emergency (properly documented). In cases of such emergencies, with proper documentation, missed exam grades will be replaced with the grade from the appropriate part of the final exam.

All examinations are closed book, closed notes. No “cheat sheets”, “memory aids” or any other type of note cards are allowed, unless provided by the instructor, and that is rarely done. Any statistical tables needed will be supplied by the instructor. All work must be shown on the exam papers. It is assumed that all questions must be solved “*exactly*” or “*algebraically*” unless stated otherwise. This means that all questions on the exam must be fully solved without the use of a calculator. If calculators are allowed, then they may be used to calculate statistical parameters and to check your work.

On all exam questions, points will be lost if the instructor cannot be determined how the answer was obtained. Students only need to bring pencils, an eraser and an optional calculator. No other items, including phones, notebooks, pads of paper, etc. should be within the view of the student. As stated earlier, the use of calculators *may* be allowed in examinations, but you must provide your own. Stored data or programs about this course are not allowed in calculator memory. Be sure to show all work as neatly and logically as possible on your exam. Full credit will not be given without showing the work needed to get to the result. A properly completed problem must show the answer and the work used to obtain the answer and should be presented in a reasonably logical and legible manner.

Graded Papers will be returned as soon as possible. If you have any questions about the grading of a quiz or an exam, please discuss the situation with me immediately after receiving the graded paper. If I decide to regrade the paper, the entire paper may be regraded, not just a specific portion in question. Grades can go up, down or remain the same upon being regraded. Exams and other assignments will **not** be regraded at the end of the semester. Missing grades will be counted as zeros. Generally no grades are curved, but the instructor reserves the right to drop some low grades and/or curve grades and make other adjustments which are deemed appropriate. Any material not picked-up by the end of the semester will be retained only 60 days after the end of the semester.

Cancellations: If an exam has to be canceled because of inclement weather or any other reason (e. g., if the entire university is closed), it will be given during the next scheduled class period, without any other formal announcement. If classes are canceled for multiple days, I reserve the right to cancel the exam and adjust the total points for the course accordingly.

Extra Credit: There may be extra credit problems or extra credit points on midterms and/or the final exam. Additionally from time to time, the instructor may announce opportunities for extra credit points. These assignments will be graded and will count as extra credit for the number of points stated in their announcement. There may not be any extra credit assignments, or there may be a few based on the wishes and whims of the instructor.

How to get help: There are multiple sources for help.

- Help sessions are available at the Tutoring Center on the lower level of the Student Center. They are generally available most weekdays and some evenings. The schedule is usually available in the ATTIC (lower level of the Student Center) during the 2nd week of class and may be updated based on availability of funds and student needs. These tutoring sessions generally start on the 2nd week of class and end on the last week of class.
- I am also available for help. Please see me before/after class or during office hours.

Grading:

3 Midterm Exams	300 pts total
Quizzes	up to 100 pts total
Final Exam	150 pts
Total	450-550 pts

A	$\geq 90\%$
B	$\geq 80\%$
C	$\geq 70\%$
D	$\geq 60\%$
F	$< 60\%$

The instructor reserves the right to drop some low grades and/or curve the grades and make other adjustments deemed appropriate.

Secret for Success in Mathematics and Statistics

The most important element for doing well in probability and statistics is staying current with the material. Each topic builds upon the previous topics. Therefore if you fall behind it is extremely difficult to catch up. I recommend setting up a time each day for doing problems. No, I am not crazy. I am being realistic. Read the relevant sections of the chapter in the book *before* class. The material may not all make sense when you first read it, but going through it once before class will build a context that will make it easier to understand the material as it is presented in class. This will maximize the return on the time invested in the class and will give you the opportunity to formulate your questions before coming to class. After class, attempt all the homework problems and don't look up the answers until you have struggled with the problem for quite some time. It is very easy to fool yourself into thinking you understand something because you can follow the instructor or a solutions manual when a problem is worked. That is trivial compared to staring at a cold, blank sheet of exam paper. I urge you to form a study group and work problems with your fellow students. If you have problems, see me before they become big problems. Remember, I'm here to help.

Math 2260 Homework exercises from Understandable Statistics, 9th Ed.

Note: Most sections in the textbook end with Review Exercises, some of which are assigned as homework. Most chapters in the textbook end with a Review Summary and Exercises. Many of those problems are not assigned below. It is strongly recommended that students work extra problems, especially if more practice is needed.

§	Page	Problems
1.1	11	1-8
1.2	17	3, 4, 5, 11, 12, 15, 16
1.3	27	3, 4, 5
2.1	47	2, 3, 4, 6, 7, 9, 10, 11, 15, 16
2.2	55	1, 2, 4, 6, 7, 8, 10, 12
3.1	83	2, 3, 5, 8, 12, 18
3.2	97	2, 4, 8, 9, 10, 12, 14
3.3	109	2, 3, 4, 5, 7, 10
4.1	131	6, 9, 10, 12
4.2	146	1-7, 9-15, 22, 24, 26
4.3	161	1, 3, 9, 13-20, 23, 24, 26
5.1	179	2, 4, 6, 7, 9, 10, 12, 15, 17
5.2	191	2, 5-11, 14, 18, 22
5.3	203	2-4, 8-11, 13-17, 20-23
5.4	217	1-4, 6, 8, 10-13, 16-19, 25
6.1	245	2, 6, 8, 10, 12, 15
6.2	257	6, 7, 8, 9, 11-18, 29-38
6.3	269	22-26, 28, 30, 31, 34, 35, 38
6.4	279	4, 5, 8, 10, 11, 13
7.1	298	3, 6, 8
7.2	307	6, 8, 9, 10, 14, 16, 17, 20
7.3	319	2-7, 10, 11, 13
8.1	339	1, 4, 5, 6, 7, 8, 10-12, 13, 14, 16, 18, 20
8.2	349	7-10, 11, 16, 17, 18, 20, 21
8.3	363	3, 4, 6, 9, 12, 14, 16, 18, 21
8.4	377	3, 7, 8, 10, 12, 13, 15, 16, 18, 20, 22, 24
9.1	413	6-10, 12, 14
9.2	427	1-8, 10, 12, 14, 16, 19, 20, 21, 23-26
9.3	437	4, 5, 6-8, 9-12, 15, 16
9.4	449	3, 7-9, 10, 12, 14, 16
9.5	471	4-8, 10-12, 14-16, 18, 20, 22, 24, 28

Total: 31 homework assignments