Math 11 Syllabus

Winter 2018

Lecture: Monday, Wednesday, Friday 1:00-1:50pm WLH 2001
Discussion Section: Tuesday 6:00-6:50pm, 7:00-7:50pm, 8:00-8:50pm, or 9:00-9:50pm in
HSS 1315, 8:00-8:50pm or 9:00-9:50pm in AP&M B402A, or 8:00-8:50pm or 9:00-9:50pm in
WLH 2209
Course Webpage: [http://cseweb.ucsd.edu/~dakane/Math11/](http://cseweb.ucsd.edu/~dakane/Math11/)

Professor: Daniel Kane
Email: dakane “at” ucsd.edu
Office Hours: 2:30-4:30pm on Mondays in AP&M 7131, or by appointment (i.e. if you need
to speak and can’t make this time, send me an email and we’ll figure something out).

TAs:
Jiaqi Liu: Office hours - Wednesdays 4:00-6:00pm in AP&M 6446.
Xiaoou Pan: Office hours - Thursdays 3:00-5:00pm in AP&M 5412.
Shuheng Wang: Office hours - Tuesdays 12:00-2:00pm in AP&M 5218.
Fernando J Teixeira: Office hours - Wednesday 11:00am-12:00pm, Friday 4:00-5:00pm in
AP&M 5218.
Selene Xu (Head Lab TA): Office hours - Fridays 11:00am-1:00pm in AP&M B349

Other Section: We are coordinating somewhat with the other section of Math 11 to have
similar schedules and use the same labs and homeworks. Thus, if you cannot make the above
times, you can also attend office hours held by instructors in the other section which are as
follows:
Eddie Aamari: Tuesday 10:00-11:00am and Thursday 11:00am-12:00pm in AP&M 5880A
Mikael Gabouchian: Friday 11:00am-12:00pm in AP&M 5412
Alexander Reed: Monday 10:00am-12:00pm in AP&M 6436
Joseph Gilby: Friday 8:00-9:00am in AP&M 5412
Chen He: Monday and Wednesday 3:00-4:00pm in AP&M 6436

Course Description: Math 11 is an introduction to probability and statistics. Topics in-
clude: events and probabilities, conditional probability, Bayes formula, discrete and continu-
ous random variables, mean, variance, binomial distributions, Poisson distributions, normal
distributions, uniform distributions, exponential distributions, central limit theorem, sample
statistics, confidence intervals, hypothesis testing, and regression. Emphasis on connections
between probability and statistics, numerical results of real data, and techniques of data
analysis. Labs will introduce students to the Minitab software package for statistical analy-
sis.
Prerequisites: AP Calculus BC score of 3, 4, or 5, or Math 10B or Math 20B.

Textbook: The textbook for the course will be *Stats: Data and Models* by De Veaux, Velleman, and Bock, 4th Edition. If you purchase the textbook from the bookstore, it will include a copy of MyStatLab, although this is not required for the course. Instructions for purchasing an electronic version of the textbook online are available in TritonEd. If you choose this option, you will have access to the textbook only until the end of the quarter.

Older Editions of the Textbook: I am not intending to do anything with this class that requires specifically the current version of the textbook. However, I haven’t taught this class before, and haven’t compared the current version to older editions. Thus, if you want to use an older edition of the textbook instead, it will probably be sufficient, but I cannot make any promises to that effect.

Exams: There will be two in-class exams on February 2nd, and on March 2nd in addition to a final exam from 11:30am-2:30pm on March 23rd.

Exam Aids: On exams you will be allowed to use a graphing calculator along with a limited number of pages of notes. You may not use the textbook, and all internet connected devices must be put away.

Homework:

Submission Policy: Homework will be assigned due each week excepting the first week, and weeks with exams. Homework will be due on gradescope the Tuesday of the week it is due by 11:59pm. Late homeworks will not be accepted, so please make sure to get yours in on time. You should get an email about gradescope registration during the first week of class. If you do not (probably because you added the class late), please email me so that I can fix it. To accommodate exceptional situations such as accidents or serious illness, your lowest homework score will be dropped. I will attempt to have new homeworks available on the course webpage at least a week before they are due.

Collaboration Guidelines: Students are encouraged to collaborate on homework assignments. You should feel free to discuss the problems with other students or with the course staff. On the other hand, you are expected to write up your solution independently of any collaborators, and you should not share written solutions to homework problems with other students before the homework deadline.

Use of Outside Resources: You should not attempt to search for homework solutions online or in sources outside of the course text. You may use such sources as a study guide, but if you accidentally stumble upon a homework solution in such an outside source you should cite it in your homework solution. If your solution proves to be too similar to the cited one, you may lose credit on the problem, however failure to cite the other solution will be treated as academic dishonesty.

Labs: In addition, you will be given eight weekly computer labs. These labs will be due on Friday at 9pm each week without an exam. Labs should be submitted on TritonEd by their respective due dates.

Late Submissions: Lab assignments can be submitted up to 1 hour late at the cost of a 1-point penalty. Assignments submitted later than this will not be accepted, excepting the first assignment which can be submitted up to a week late for a 1-point penalty.
**Collaboration Policy:** The collaboration policy for labs is similar to that for homeworks. You should feel free to discuss approaches with other students, but the final work should be done on your own. In particular, your final submission should be the result of Minitab computations that you have done on your own, and you should not use graphs produced by other students or share your graphs with other students.

**Plagiarism Detection:** To ensure that students will not copy portions of their labs from other current or past Math 11 students, the software Turnitin.com will be used to detect plagiarism. Therefore, the following policy, quoted from UCSD’s Academic Integrity website, applies to Math 11: “Students agree that by taking this course all required papers will be subject to submission for textual similarity review to Turnitin.com for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the terms of use agreement posted on the Turnitin.com site.”

**Additional Resources:**

The teaching and learning center is providing some additional learning resources for interested students:

**Supplemental Instruction:** The teaching and learning center will hold three 50-minute supplemental instruction sections per week: Mondays at 6pm in Center 316, Thursdays at 7pm in TLC 1505, and Fridays at 3pm in TLC 1505.

**In-Person Tutoring:** They will also run in-person tutoring in the Teaching and Learning Commons Monday-Thursday 9am-8pm, Friday 9am-5pm, and Sunday 4pm-6pm.

For more information on these additional resources visit [http://commons.ucsd.edu/students/tap/index.html](http://commons.ucsd.edu/students/tap/index.html).

**Academic Integrity:** Academic integrity will be taken very seriously by the course staff. Breaches of integrity may have broader consequences outside of the assignment in question. The following will all considered to be breaches of academic integrity:

- Collaboration on homeworks or labs beyond the scope outlined in the section above (including sharing of homework solutions with other students before the homework deadline).
- Collaboration or copying on exams of any kind.
- Attempting to look up homework or lab solutions online. Failure to cite such solutions if found incidentally.
- Use of aids on exams outside of explicitly allowed materials.
- Posting of homework or lab solutions or sharing them with future Math 11 students.

**Grading:** Course grades will be determined using the following breakdown:

- Homework: 15%
- Labs: 20%
- Midterms: 2 × 15%
- Final: 35%
I will attempt to keep the grade distribution for this class similar to what it has been historically for Math 11 (though I may adjust this slightly if I am particularly impressed or disappointed with the class as a whole). Your grade will be determined relative to other students in the class, but the exact standing required for a given letter grade is not decided in advance.

**Schedule:** Below is a rough schedule for topics covered in the class:

Week 1: Summarizing Data, Correlations, Linear Regression (Chapters 3, 4, 6, 7)

Week 2: Linear Regression, Introduction to Probability, Conditional Probability, Independence (Chapters 8, 9, 13, 14)

Week 3: Bayes’ Rule, Random Variables (Chapters 14, 15)

Week 4: Geometric, Binomial and Poisson Distribution, Exam 1 (Chapter 16)

Week 5: Continuous Distributions, and Normal Distribution (Chapter 5 and handout)

Week 6: Surveys, Sampling Distributions, Central Limit Theorem, Confidence Intervals for Proportions (Chapters 11, 16.4, 17, 18)

Week 7: Hypothesis Testing for Proportions (Chapters 19)

Week 8: Confidence Intervals for Means, One-Sample $t$-tests, Exam 2 (Chapters 20, 21)

Week 9: Two-Sample $t$-Test, Paired $t$-Test, Regression Inference (Chapters 22, 23, 25)

Week 10: Regression Inference, Chi-Squared Test, Review (Chapters 24, 25)