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Overview of Math 161a

• A *calculus-based* introductory course on probability and statistics.

• Students typically come from *stats*, *applied math*, *CS*, and *engineering*.

• **Catalog description:** Descriptive and inferential statistics. Collection and analysis of data, discrete and continuous probability models, random variables, central limit theorem, confidence intervals, hypothesis testing.

  – **Prerequisite:** MATH 31 Calc II

• This course is required by *Math 161B Applied Probability and Statistics II* and *Math 163 Probability Theory*. 
Know your professor
Know your professor - biography

• 198x: Born in China, Anhui Province
• 1998: Attended college (USTC) in Hefei
• 2003: Came to the US for graduate school
• 2009: Got my PhD degree in applied math from the University of Minnesota
• 2009-2013: Worked at Duke University as temporary faculty
• 2013-2014: Taught at Claremont McKenna College
• 2014: Joined SJSU as Assistant Prof. of Stats
Know your professor - teaching

- **Minnesota**: recitation instructor for calculus and college algebra
- **Duke**: calculus, differential equations, linear algebra
- **Claremont McKenna**: calculus, statistics (both lower and upper division)
- **SJSU**:
  - Math 42 (discrete math)
  - 161a, 163 (probability theory), 164 (mathematical statistics)
  - graduate-level courses (261b, 285, 298, 203)
Know your professor - research

I work in several areas of machine learning, such as clustering and classification, with applications to image processing and documents analysis.
Know your professor - research (cont’d)

I have taught/developed several machine learning courses (see my webpage at http://www.math.sjsu.edu/~gchen/).

I have also worked with several undergrad/grad students on such research and even published papers together.

This semester I am supervising a project course (Math 203) on scalable spectral clustering, sponsored by Verizon Wireless.

If you want to learn more from me on these topics, come to my office hours or utilize the “coffee with a professor” program at SJSU, whose details can be found at http://www.sjsu.edu/studentaffairs/about_us/chatwithaprof/.
Know your professor - personal

- Married with 3 kids: Mina (5), Zachary (3) and Noah (2)
- A Christian
- Hobbies:
  - reading (history, geography, politics, religion)
  - badminton, cue sports (billiards)
  - cooking
Now it’s your turn

You can say your name, major, year, why you want to take this course, and anything else interesting about you (to help us remember who you are).
Textbook


You may use the 8th ed for reading but homework will be based on the 9th ed.

Optional readings (to supplement lectures and the required book):


- A first course in probability, 8th edition (or newer), Ross, publisher: Pearson. This is the textbook used by Math 163, which contains many good (and hard!) problems.
Learning management system

We will use Canvas (accessible via http://my.sjsu.edu/) in various ways:

- Post homework assignments
- Record all homework and test scores (let me know ASAP if any mistake)
- Send out announcements (reminders, clarifications, deadline changes, etc.)
- Communicate within class (under Discussions)

Make sure to check your Canvas settings to receive timely notifications. Also, check if your email address in record is still good.
Technology requirements

You will need a **scientific calculator** for some questions on homework and tests.

This semester we will use **i-Clicker** to perform some in-class activities (such as polling and quizzing).

- Go to [https://www.iclicker.com/](https://www.iclicker.com/) to create a free account (as students) and add this class (search first for San Jose State University, then for Math 161a or my name).

- To participate, you will need to have a smart phone or laptop.

Occasionally, I will use **R** or **MATLAB** to do some statistical simulation and graphing (but you are not required to know them).
Course requirements

- **Homework (15%).** Assigned weekly on Canvas (collected in class).

- **Midterm 1 (25%).** March 7, Wednesday, in class

- **Midterm 2 (25%).** April 18, Wednesday, in class

- **Final exam (35%).** The University has fixed the date and time to be on May 22, Tuesday, 12:15pm–2:30pm.
Extra credit (up to 5%)

...may be earned in several ways, such as

- In-class pop quizzes
- Bonus questions on HW and tests
- Extra-credit activities assigned by the instructor (e.g., i-Clicker)

More opportunities may be given during the semester, at the instructor’s discretion.
Grading policy - homework

You may collaborate on homework but you must write independent solutions.

Copying at any level will result in a zero score for the homework, and will be reported to SJSU Office of Student Conduct.

Late homework will not be accepted for any reason, but your lowest homework score will be dropped.
Grading policy - tests

The exams are all closed-book but cheat sheets of specified sizes will be allowed.

Before each exam, a study guide with some practice problems will be provided to you; however, there is no guarantee of any level of similarity with those problems. Thus, it is in your best interest to review for each exam thoroughly.

No make-up exams will be given if you miss a midterm exam. If you have a legitimate excuse (e.g., illness or other personal emergencies) AND can provide some kind of evidence, the weight of the midterm will be incorporated into the final.
Important reminders

Show all necessary steps for both homework and tests:

- It is your entire work (in terms of correctness, completeness, and clarity) that is graded.
- Correct answers with no or poorly written supporting steps will be given very little credit.

Please staple your homework!

Please write legibly (unrecognizable work will receive no credit).
Grade cutoffs

...will be determined based on the following percentages:

- A+: 97%, A: 93%, A-: 90%
- B+: 85%, B: 80%, B-: 75%
- C+: 70%, C: 65%, C-: 60%
- D+: 57%, D: 53%, D-: 50%
- F: <50%

AND the actual distribution of the class at the end of the semester.
Potential challenges

- Too much material in one semester
- Statistical concepts can be sometimes difficult to understand
- You need to have solid calculus skills (to deal with series, integrals)
- Ability of abstract thinking and reasoning is also important.
Your responsibilities in learning

My duty as an instructor is to disseminate knowledge while helping you learn. The ultimate responsibility of learning is upon the student, not the instructor. Thus, you should

- Attend all classes
- Participate in-class discussions
- Read the textbook before and after class
- Take time to think through the concepts
- Do your homework
- ASK whenever you don’t understand something!!!
Classroom protocols

- The class starts on time, so do not be late.

- Please remember to turn off or mute your cell phone during class.

- Please do not perform irrelevant or distracting activities in class.

- If you miss a class, you are responsible for finding out what’s said/done in that class (such as new material, deadline change, etc.) and responding accordingly.

- Academic dishonesty at any level is not tolerated and will be surely reported to the Office of Student Conduct, per SJSU policy.
Study groups

You are strongly encouraged to form study groups, so that you may learn from each other and collaborate on homework (but you must write independent solutions).

Let me know once you have found your study partner(s). I’ll create a group for you on Canvas.

Every student group gets their own calendar, discussion board and collaboration tools so they can organize themselves and work together more effectively.
Special accommodations

If you anticipate needing any special accommodation during the semester (e.g., you have a disability registered with SJSU’s Accessible Education Center), please let me know as soon as possible.
Instructor feedback

I strive to teach in the best ways to facilitate your learning. To achieve this goal, it is very helpful for me to receive timely feedback from you.

You can choose to

- talk to me in person, or
- send me an email, or,
- submit your feedback anonymously through http://goo.gl/forms/f0wUD5aZSK.
Contact information

- **Office**: 417 MacQuarrie Hall
- **Phone**: (408) 924-5131
- **Email**: guangliang.chen@sjsu.edu. I check my emails frequently, but you should allow a turnaround time of up to 24 hours (on weekdays) or 48 hours (during weekends).
- **Office hours**: MW 11 - 11:50am, and TR by appointment (I am mostly available between 9am-2pm).
Assignments from today (*extra credit)

1. *Complete the **background survey** (if you haven’t) at the following url: https://goo.gl/forms/DFz4Pjt8h6SNNvT22.

2. *Create an **i-Clicker** student account and add this class.

3. *Log in to **Canvas**, and complete a task (under Discussions):
   - Please post a photo (of you, of an artifact, of a place, or of an event) that captures something meaningful about you. Explain your selection (in a few sentences).
   - Peruse the posts of your classmates, and comment on at least one.

4. **HW0 (calculus review)**: see Canvas (under Assignments)
If you are not enrolled yet

You should write down your name and sign on the attendance sheet and complete the background survey as soon as possible. I will let you know by next class whether you can add this class.

Meanwhile, you should do HW0 (due in a week) through my website: http://www.math.sjsu.edu/~gchen/.

Departmental policy is that add codes (when available) be given out in the order: graduating seniors (with yellow cards) > first timers > repeaters > OU students

If you are not able to receive an add code next Monday, you are welcome to continue attending classes until the drop deadline (Feb. 5, Monday).