Instructor: Dr. Shih-Kang Chao  
Office: HAAS 120  
email: skchao74@purdue.edu. This is only for special situations. Please allow 24hrs response time. For questions on course logistics or content, please ask on Piazza (see p.2).

Division:  
20/21 9:30 am – 10:20 am  
MF: ME 1051  
W: Lab SC 231 (ME 1051*)  
70/71 11:30 am – 12:20 pm  
MF: UNIV 001  
W: Lab SC 231 (BRNG B222*)  
40/41 12:30 pm – 1:20 pm  
MF: UNIV 001  
W: Lab SC 231 (BRNG B222*)  

*For Wednesdays: 1/17, 1/31, 2/21, 4/25  
Class cancelled on 2/28 (Wednesday) & 4/13 (Friday)

Graduate Teaching Assistant:  
Division: 20/21  
Ashutosh Srivastava  
70/71  
Yumin Zhang  
40/41  
Ryan Murphy

Office Hours:  
- Instructor: Fridays 1:30-2:20pm in HAAS 115 (STAT help room), Mondays 10:30-11:20am  
- Additional office hours managed by graduate teaching assistants will be held in the Stat Help Room located at HAAS 115. Schedule is posted on the Blackboard (BL)-Announcements, will be mostly on Mondays and Thursdays with Wednesdays night in BRNG B286

ISBN: 978-1-46-4111169-3 --- REQUIRED (online materials are not required)

Exam dates (Please mark your calendar)  
Exam 1 6:30 PM - 7:30 PM Tuesday  
Feb. 27, 2018  
WALC 1055  
Exam 2 6:30 PM - 7:30 PM Tuesday  
Apr. 10, 2018  
WALC 1055  
Final TBA

Calculus 1 (integration) is a prerequisite for this course. You will be required to perform integrations on the homework and the exams.

Our Statistics Philosophy:  
This is not a math class. This is a critical thinking class. Our goal is to help you make wise and educated decisions at work and in life. “Statistical thinking will one day be as necessary for efficient citizenship as the ability to read and write.” H.G. Wells

Purdue Honors Pledge:  
As a boilemker pursuing academic excellence, I pledge to be honest and true in all that I do. Accountable together - we are Purdue.

Grading Policy:  

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation</td>
<td>4%</td>
</tr>
<tr>
<td>Course Evaluation</td>
<td>1%</td>
</tr>
<tr>
<td>Homework</td>
<td>15%</td>
</tr>
<tr>
<td>Labs</td>
<td>12%</td>
</tr>
<tr>
<td>Group Project</td>
<td>3%</td>
</tr>
<tr>
<td>MIDTERM Exams</td>
<td>20% x 2</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
</tr>
</tbody>
</table>

The letter-grade cutoffs for this course are approximately:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Score Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-</td>
<td>90 – 96</td>
</tr>
<tr>
<td>A/A+</td>
<td>80 – 94</td>
</tr>
<tr>
<td>B/-B+</td>
<td>80 – 86</td>
</tr>
<tr>
<td>B</td>
<td>70 – 79</td>
</tr>
<tr>
<td>C/-C+</td>
<td>60 – 69</td>
</tr>
<tr>
<td>C</td>
<td>60 – 59</td>
</tr>
<tr>
<td>D/-D+</td>
<td>50 – 49</td>
</tr>
<tr>
<td>D</td>
<td>50 – 49</td>
</tr>
<tr>
<td>F</td>
<td>&lt;50</td>
</tr>
</tbody>
</table>

I reserve the right to change the grading scheme should unusual circumstances demand it.

This SYLLABUS is subject to change. All changes will be posted on Blackboard.
Learning Outcomes:
1. Statistical Literacy: Students will be able to use basic terms and symbols, construct graphs, and interpret and analyze statistics in the media.
2. Statistical Reasoning: Students will be able to explain statistical processes and fully interpret statistical results.
3. Big Ideas in Statistics: Students will be able to explain foundational concepts in statistics such as variability, distributions, models etc., and apply these concepts in statistical process.
4. Statistical Thinking: Students will be able to assess statistical problems, and justify and apply statistical methods used to solve the problem.
5. Statistical Computing: Students will be able to analyze data and interpret results using a statistical software package.

Book Website: (http://www.macmillanlearning.com/catalog/studentresources/introstats2e/)
This link is also in Blackboard. This site contains the complete data sets, option of downloading the tables from the book in a pdf file, and Section 6.5 here which is not in the hard copy of the textbook.

Blackboard (BL): (https://mycourses.purdue.edu/)
All announcements will be posted on Blackboard including changes in due dates; important announcements will also be sent directly to your Purdue e-mail account. It is your responsibility to read the e-mails and keep track of the announcements.
The syllabus, current schedule, tables, slides information for homework, computer labs, projects, exams and other resources are available in this site. The Syllabus Assignment will also include questions concerning Blackboard.
All online submissions will be on Blackboard. This includes the homework assignments, lab reports and project reports.
Your grades will also be posted online in this location. It is your responsibility to make sure the grades recorded on Blackboard are correct. All grades in Blackboard (other than the final exam) are final before the final exam. If there is a mistake on a grade, submit a re-grade request in a timely manner (see Re-grade Request section below for details).

- This is an online platform for students (of all the instructor’s three sections) to discuss course contents and forming groups for lab/projects or study groups for themselves. Questions and answers are checked occasionally.
- It is not appropriate to post “direct” answers to homework or labs on this forum, but explaining the ways to get them is encouraged.

Participation (4%):
Ways to earn points:
1. Answer questions on piazza (including those asked by yourself), one “good” answer = 0.5%.
2. Coming to classes on 2/23, 4/9, 4/27, each date = 0.5%.
3. Other ways that I might indicate later.

Course Evaluation (1%):
- During the last two weeks of the semester, you will be provided an opportunity to evaluate this course, your instructor and TAs using an online evaluation.
- The lecture section will be for your instructor and the lab section will be for your lab TA. It will be indicated on Blackboard at the appropriate time which section number is for which person.
- You will need to submit a screen shot of a screen that shows that you have completed the surveys for STAT 350.
Labs (9 lab reports, 12%):
- Labs will be held on most Wednesdays; please see the schedule and Lab folder on Blackboard for details. Lab attendance is not required as long as the labs are completed on time.
- Each lab consists of a pre-lab quiz (completed on Blackboard, 10 pts) which is due before 8:25 am of the lab day (strict), and the lab report (90 pts) which is due on Thursday 11:59 pm (strict).
- Lab usually consists of individual and group parts. Lab groups should be in size of 3-4 persons all from Dr. Chao’s sections, though they do not need to be in the same section. You may use piazza to find group mates. For group assignments, only one report per group needs to be submitted on Blackboard. Make sure the 1) Instructor’s name; 2) group members’ names*; 3) members’ sections time and number; are at the top of the report.
  *The official name you use when you register in Purdue
- All students have a choice of using SAS or R for their lab assignments. It is strongly recommended that all students use R.
- The lab report is to be turned in electronically on Blackboard in ONE file in PDF, DOC or DOCX format. No late work will be accepted (no mercy). Computer difficulties are not a valid excuse. Please see the Lab Syllabus for more details. If there is a group part to the lab, that part needs to be turned in separately from the individual part in the appropriate location. There is only one report needs to be submitted with all members and section times included at the top.
- One lowest lab score will be dropped at the end of the semester.
- Besides office hours, please see the lab folder in Blackboard for additional ways for getting help on the software packages.

Project (one, 3%):
- There will be one group project this semester which is due at the end of the semester. The specifics will be posted later in the semester. Each group should consist of 3 - 4 students all in Dr. Chao’s sections. Please form your group early in the semester. Again, you may use Piazza to help in forming your groups. Late projects will NOT be accepted (no mercy).

Homework (12 homework, 15%):
- The homework problems will be posted on Blackboard weekly (usually).
- Only the clearly marked assigned problems (with points) will need to be turned in; optional problems are for your benefit only. For each problem set, there will be odd problems from the book with answers in the back of the book which are not required.
- Due on Mondays 11:59 pm (strict) except when Monday is a holiday (in that case, consult specific time on BL). The due dates are marked on Blackboard. No late work will be accepted (no mercy).
- The assignment must be submitted via Blackboard in one file in PDF, DOC or DOCX format (per person). Make sure that 1) Instructor's name; 2) your name*; 3) your section time and number; are on the top.
  *The official name you use when you register in Purdue
- Please avoid submitting scanned files of your writing on physical papers. If you have to, it is your responsibility to make your writing clear and readable. No re-grade request due to dispute on unreadable files will be processed.
- Each homework has maximum 20 points (excl. bonus).
- The lowest score will be dropped at the end of the semester.

Re-grade Request
- This applies to labs and homeworks. All re-grade requests must be in writing and submitted on Blackboard using the “request form”. No other requests will be accepted. Please explicitly explain in the request form which part(s) you demand re-grade and justify this re-grade with reasons. Re-grade requests include grading mistakes, approved re-submissions, and if a
group lab score is not recorded for a group member when other members have received their grades.

- To request a re-grade for assignments, you must submit a re-grade form (Blackboard) within one week from when the assignment is graded (note when the assignment is graded in the “date” on the form). If the assignment is a hard copy, e.g., exams, the re-grade request must be stapled on top of the assignment within the time frame stated. If the assignment was submitted electronically then only the re-grade request form needs to be submitted on Blackboard in the appropriate location. Do not submit the re-grade request in the same location as the assignment.
- Re-grade requests outside the re-grade time window will be denied (no mercy).
- Any rudeness accompanying a re-grade request will result in the assessment of a “technical foul” penalty equal to the total number of points for the disputed question.

Exams (two midterm exams – 20% each and one final exam – 25%):

- Dates are on the first page.
- The exams will be closed book exams.
- The statistical tables provided will be mentioned. No formulas will be provided.
- You are permitted to bring one double-sided 8 1/2” x 11” cheat sheet for each of the two midterm exams and two double-sided 8 1/2” x 11” cheat sheets for the Final Exam. The cheat sheet can be typed or written or any combination. This sheet of paper will be turned in at the end of the exam but will be returned later.
- Besides the cheat sheet, you need to bring pens, pencils, and calculators. A scientific calculator is required. Graphing calculators are forbidden.
- The final exam is comprehensive, i.e. including all the content of this semester.
- The final is not returned. Though students may look at their finals and get their cheat sheets by picking them up from my office after the end of the semester.

Policy for Make-up Exams:

- You must have a valid reason to request a makeup exam. Valid reasons include absence due to activities required by Purdue University or job or internship, direct conflict in exams, and /or a death in your family.
- If you must miss an exam for non-emergency reasons, please submit a completed Make-up Exam Form to Blackboard (in PDF, DOC or DOCX format) with appropriate written documentation to your instructor at least one week in advance of the exam. We need time to get your documentation (university or doctor’s note, obituary, etc.) approved before your exam grade will be recorded.
- If you are missing the exam due to an emergency, you must e-mail your instructor with details of your situation and the information requested on the Make-up Exam Form no later than 9 am the day after the scheduled exam.
- Failure to meet these deadlines may result in a score of 0 points for the exam.
- The format of the makeup exam may differ from the regular exam. It may include questions requiring the use of statistical software and/or oral examination.

We make every effort to accommodate student schedules while also protecting the integrity and security of the exam. Usually only one make-up exam time will be scheduled following each regular exam. The make-up exam time will be chosen based on students’ schedules, room and proctor availabilities.

Lectures:

- I strongly recommend that all students attend the lectures. Besides covering material that is not in the book; I also make comments and provide advice. If you do miss class, it is YOUR responsibility to obtain the material that you missed. It is preferable if you have read the book before class so that you have an idea of what I will be discussing.
STAT 350 (Spring 2018)  Introduction to Statistics

● Students are expected to speak English in lab. To ensure all students have positive learning experiences, disruptive behavior* in class will not be tolerated. Students who are disruptive will lose points up to 10% of the course grade and will be referred to the Office of Dean of Students. *Disruptive behavior includes constantly talking when other people are talking, having cell phones ring in class, noises from laptop computers, etc.

Section Change:
● If there is room in the classroom and lab of another of MY sections, there is no need to officially change sections unless necessary for other reasons. To change sections, you need to drop the first section and hope that there is room in the other section for you to add. Remember that the sections fill up quickly.
● If you change sections, it is YOUR responsibility to print off your grades from your old Blackboard site before you drop the course and give them to your new instructor within two weeks of the section change.
● Please observe the deadline for cancelling a course assignment without it appearing on record. The Purdue guidelines are at here. I reserve the right to NOT sign a student out of the course.

Academic Honesty:
● You are expected to uphold The Honor Code of Purdue University. The Purdue Honor Pledge is: "As a boilemaker pursuing academic excellence, I pledge to be honest and true in all that I do. Accountable together - we are Purdue."
● Academic integrity is one of the highest values that Purdue University holds. Individuals are encouraged to alert university officials to potential breaches of this value by either emailing integrity@purdue.edu or by calling 765-494-8778. While information may be submitted anonymously, the more information that is submitted provides the greatest opportunity for the university to investigate the concern.
● All cheating in the course will be referred to the Office of the Dean of Students (www.purdue.edu/odos), calling 765-494-8778 or via e-mail at integrity@purdue.edu.
● Any cheating on exams will result in an “F” in the course. This includes communicating details of an exam to other students who have not yet taken the exam.
● Cheatings on labs, homework, projects, etc. will result in zero for that assignment and a letter grade reduction.

In STAT 350, we encourage students to work together. However, there is a difference between good collaboration and academic misconduct. We expect you to read over this list, and you will be held responsible for violating these rules. We are serious about protecting the hard-working students in this course. We want a grade for STAT 350 to have value for everyone. We punish both the student who cheats and the student who allows or enables another student to cheat (even by not keeping an exam covered). Make sure that you are doing everything you can to protect the value of your work on exams, homework, discussion posts, and even class participation and studying.

Good Collaboration:
● Try all of the homework problems yourself, on your own.
● After working on every problem yourself, then get together with a small group of other students who have also worked on every problem themselves.
● Discuss ideas for how to do the more difficult problems.
● Finish the homework problems on your own so that what you turn in truly represents your own understanding of the material.
● Work the review problems individually, and then use the group for discussion.
● Discuss concepts or practice problems in the group.
● Explain concepts or practice problems to each other.

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If the assignment involves writing a long, worded explanation (like an essay question), you may proofread somebody’s completed written work and allow them to proofread your work. Do this only after you have both completed your own assignments, though.

- Ask a tutor or TA for help on a problem related to a homework problem, but do the actual homework problem yourself. The odd-numbered problems in the book have answers in the back, so they’re great for examples.

Academic Misconduct:
- Divide up the problems among a group. (You do #1, I’ll do #2, and he’ll do #3: then we’ll share our work to get the assignment done more quickly.)
- Post answers to a homework question publically on piazza.
- Attend a group work session without having first worked all of the problems yourself.
- Participate in group work without being prepared, allowing your partners to do all of the work while you copy answers down, or allowing an unprepared partner to copy your answers.
- Start the problem yourself but then copy somebody else’s solution for the rest of the problem after you got stuck.
- Read someone else’s answers before you have completed your work.
- Have a tutor or TA work through all (or some) of your HW problems for you.
- Share lab work, print off two copies of the output, or two people use the same computer to do lab.
- Not keeping your exam covered.

Additional Policy statements are available on Blackboard.

Approximate Outline
- A more detailed list of readings is on the Blackboard. If sections are skipped, they will be posted on Blackboard. Additional readings will be assigned on Blackboard.

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Topic</th>
<th>Sections Covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Why Study Statistics</td>
<td>all</td>
</tr>
<tr>
<td>1</td>
<td>Introduction</td>
<td>1.1, 1.2</td>
</tr>
<tr>
<td>2</td>
<td>Graphs for Summarizing Data</td>
<td>2.1, 2.2, 2.4</td>
</tr>
<tr>
<td>3</td>
<td>Numeric Summary Measures</td>
<td>all</td>
</tr>
<tr>
<td>4</td>
<td>Probability</td>
<td>4.1, 4.2, 4.4, 4.5</td>
</tr>
<tr>
<td>5</td>
<td>Random Variables and Discrete Probability Distributions</td>
<td>all (only some parts of 5.5)</td>
</tr>
<tr>
<td>6</td>
<td>Continuous Probability Distributions</td>
<td>6.1, 6.2, 6.3, 6.4, 6.5 (online, not in the book) + extra readings</td>
</tr>
<tr>
<td>7</td>
<td>Sampling Distributions</td>
<td>7.1, 7.2</td>
</tr>
<tr>
<td>1</td>
<td>Experimental Design</td>
<td>1.3 + extra readings</td>
</tr>
<tr>
<td>8</td>
<td>Confidence Intervals – Single Sample</td>
<td>8.1, 8.2, 8.3</td>
</tr>
<tr>
<td>10</td>
<td>Confidence Intervals and Hypothesis Tests on Two Samples</td>
<td>10.1, 10.2, 10.3</td>
</tr>
<tr>
<td>11</td>
<td>The Analysis of Variance</td>
<td>11.1, 11.2</td>
</tr>
<tr>
<td>12</td>
<td>Correlation and Linear Regression</td>
<td>12.1, 12.2, 12.4, 12.3, 12.5</td>
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