

STAT 1034 – 002: Elementary Statistics I
(Spring 2020)

Instructor: Shun Dong

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Office hours: T, Th 5:00-6:00pm

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Text: “Introduction to the Practice of Statistics”, 9th edition; David S. Moore, George P. McCabe & Bruce Craig.

Prerequisites: Knowledge of high school algebra. Score of 420 or above on the Math Placement Test is strongly recommended.

Description: An introduction to statistics for students without a calculus background. The course covers data analysis (numerical summaries and graphics for describing and displaying one- and two-variables); basic principles of data collection from sampling and experimentation; elementary probability and random variables; applications of the normal distribution; sampling distributions for counts, proportions and the sample mean; statistical estimation (construction and interpretation of one sample mean confidence intervals); and an introduction to hypothesis testing (one sample mean tests and the logic of using them to make decisions).

Learning Outcomes: 1) produce appropriate numerical, graphical and/or tabular summaries of data to investigate and describe the distribution of a variable or the relationship or association between two variables, correctly interpret correlation; 2) distinguish between observational and experimental studies and evaluate the design of real studies; 3) compute probabilities using discrete probability models and random variables, and demonstrate an understanding of independence; 4) use the Normal distribution to compute probabilities and make statements about the distribution of the sample mean or sample proportion under repeated independent sampling (Central Limit Theorem); 5) estimate a population parameter using point estimates and confidence intervals, and provide correct interpretations of the confidence interval, margin of error and confidence level; 6) convert a research question into a statistical hypothesis, describe the logic of the test, and use the p-value or statistical significance to draw the correct conclusion.

Attendance: Please plan to attend all classes: be on time; do not leave early; and turn off your cell phones.

MASS Center: One-on-one & study-table tutoring help is offered by the Math And Science Support (MASS) center of the Learning Commons. Visit the website: <https://www.uc.edu/learningcommons/masscenter.html>

Exam & Grading: Your final grade will be determined on the following basis:

25% from the average of homework and/or quizzes

5% from your attendance

70% from **your choice** of **either** (a) **or** (b) below

(a) Do not take the comprehensive final exam, average of the 3 test scores.

(b) Do take the comprehensive final exam, average of the final exam and the 2 highest test scores of the 3 test scores. **For (b), the final exam will not be dropped.**

Numerical averages may be converted into letter grades using the following:

A– to A	90 – 100
B– to B+	80 – 89
C– to C+	70 – 79
D– to D+	60 – 69
F	less than 60

An “I” (Incomplete) will be given only to those students who cannot complete the course due to some very serious problem or illness.

A grade of “C–” or better is needed to move on to STAT 1035.

Make-ups: **NO LATE or MAKE-UPS for tests, quizzes or homework will be allowed.** Make-up for the final exam will be given only in very special situations and must be approved in advance of the final.

Withdrawals: April 3rd is the last day to withdraw from the class. If you withdraw, I will be required to affirm whether or not you minimally participated in the class. Although I will do my best to answer accurately, *in the absence of any evidence to the contrary, I will affirm that you did **not** minimally participate.* Ways for you to provide clear evidence of your presence in the class would include completing a homework assignment, taking a test, etc. Other important dates are contained on the following webpage:

<https://www.uc.edu/about/registrar/calendars/spring-2020-calendars/spring-2020-dates-deadlines.html>

General Education and Competencies: This course was designed following the guidelines of the University of Cincinnati General Education Program. It satisfies the Quantitative Reasoning Breath of Knowledge. The course addresses the Critical Thinking, Effective Communication, Knowledge Integration, and Information Literacy Baccalaureate Competencies. Transferrable skills include critiquing data and claims, making inferences from data, crafting an effective presentation for a particular audience, and using objective evidence to make a case.

Academic Integrity: The University Rules, including the Code of Conduct, and other documented policies of the department, college, and university related to academic integrity, will be enforced. Any violation of these regulations, including acts of plagiarism or cheating, will be dealt with on an individual basis according to the severity of the misconduct.

Special Needs Policy: Students with special needs should meet with the instructor as soon as possible to arrange for reasonable provisions to ensure an equitable opportunity to meet all of the requirements of this course. At the discretion of the instructor, some accommodations may require prior approval by Accessibility Resources Office (formerly Disability Services).

Blackboard / Electronic Communications: Blackboard will be used to post pertinent class information including the syllabus, announcements, graded homework, test review sheets, and other course documents used in class. For problems with Blackboard immediately contact Blackboard support at 513-556- 1602.

Calculator: A calculator or its equivalent that will perform TWO-variable statistical functions (e.g., TI-83, TI-84) is required for this class. Manuals detailing how to use a TI-83/84 and Excel for the course are posted on Blackboard under "Course Documents". **Calculators and other resources may not be shared during tests or exam. All wireless network capable devices, e.g., PCs, phones, must be off and should not be visible during tests or exams.**

Course Schedule: We will cover Chapters 1 – 6 and tentatively cover the material weekly as follows:

First:	1.1, 1.2, 1.3
Second:	1.3, 1.4
Third:	1.4, 2.1, 2.2, 2.3, 2.4
Fourth:	2.4, 2.5, 2.6
Fifth:	2.7, Review, Test 1 (Feb. 13)
Sixth:	3.1, 3.2, 3.3
Seventh:	3.3, 3.4, 4.1, 4.2
Eighth:	4.2, 4.3, 4.4, 4.5
Ninth:	Review, Test 2 (Mar. 10), 5.1
Tenth:	Spring break
Eleventh:	5.1, 5.2, 5.3
Twelfth:	5.3, 6.1
Thirteenth:	6.2, 6.3
Fourteenth:	6.4, Review, Test 3 (Apr. 16)
Fifteenth:	Review for final exam
Final exam *:	TBD

*See <https://www.uc.edu/about/registrar/calendars/spring-2020-calendars/spring-exam-schedule.html>

Homework:

Graded: All Graded Homework will be done in Blackboard. **NO LATE homework** will be accepted. **You are responsible for verifying that Blackboard has correctly recorded your score after each homework submission since no retroactive scoring changes will be made.** For technical or verification problems with Blackboard immediately contact Blackboard support at 513-556-1602.

Assigned (not graded or collected) **: The following assigned problems by section you are expected to work. However, they will **not** be graded or collected.

- 1.1: 1.1, 1.3, 1.5, 1.7, 1.11
- 1.2: 1.17 (do not split stems), 1.23, 1.21, 1.23, 1.35, 1.37
- 1.3: 1.43, 1.47, 1.50, 1.52, 1.57, 1.59, 1.61, 1.67(a)&(b), 1.75, 1.77, 1.79, 1.89
- 1.4: 1.93, 1.97, 1.98, 1.99, 1.113, 1.115, 1.127, 1.131, 1.135
- 2.1: 2.1, 2.3, 2.5
- 2.2: 2.17, 2.24, 2.27, 2.32
- 2.3: 2.41, 2.47(a), 2.46
- 2.4: 2.62, 2.64, 2.71, 2.73, 2.79, 2.87
- 2.5: 2.95, 2.101, 2.103, 2.111
- 2.6: 2.113, 2.121, 2.125, 2.127
- 2.7: 2.133, 2.139, 2.141
- 3.1: 3.3, 3.9, 3.11, 3.13, 3.15, 3.16
- 3.2: 3.17, 3.19, 3.21, 3.25, 3.27, 3.30, 3.31
- 3.3: 3.45, 3.51, 3.54, 3.55, 3.67, 3.69
- 3.4: 3.72, 3.80
- 4.1: 4.1, 4.4
- 4.2: 4.11, 4.13, 4.17, 4.18, 4.19, 4.25, 4.29, 4.33, 4.34, 4.35
- 4.3: 4.45, 4.47, 4.51, 4.57, 4.58
- 4.4: 4.63, 4.68, 4.71, 4.73, 4.85
- 4.5: 4.99, 4.105, 4.107, 4.109, 4.113, 4.115
- 5.1: 5.1, 5.5, 5.7, 5.9, 5.10, 5.12
- 5.2: 5.15, 5.29, 5.31, 5.33, 5.37, 5.39
- 5.3: 5.57, 5.59, 5.61, 5.67, 5.71, 5.78
- 6.1: 6.6, 6.9, 6.15, 6.17, 6.19, 6.21, 6.33
- 6.2: 6.44, 6.47, 6.48, 6.53, 6.55, 6.57, 6.58, 6.69, 6.73($\alpha = 1\%$), 6.74($\alpha = 1\%$), 6.75($\alpha = 1\%$)
- 6.3: 6.93, 6.95, 6.99, 6.106, 6.107
- 6.4: 6.111, 6.112, 6.113

Additional (not graded or collected) **: The following additional problems by section you may want to work. However, they will **not** be graded or collected.

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| 1.1: 1.1 — 1.15 (odd) | 4.1: 4.1 — 4.5 (odd) |
| 1.2: 1.17 — 1.41 (odd) | 4.2: 4.9 — 4.41 (odd) |
| 1.3: 1.43 — 1.87 (odd) | 4.3: 4.43 — 4.61 (odd), 4.42 |
| 1.4: 1.93 — 1.143 (odd) | 4.4: 4.63 — 4.93 (odd), 4.72 |
| 2.1: 2.1 — 2.9 (odd) | 4.5: 4.89 — 4.123 (odd), 4.9 |
| 2.2: 2.11 — 2.32 (odd) | 5.1: 5.1 — 5.15 (odd) |
| 2.3: 2.41 — 2.59 (odd) | 5.2: 5.17 — 5.41 (odd) |
| 2.4: 2.61 — 2.91 (odd) | 5.3: 5.43 — 5.79 (odd) |
| 2.5: 2.93 — 2.111 (odd) | 6.1: 6.1 — 6.35 (odd) |
| 2.6: 2.113 — 2.129 (odd) | 6.2: 6.39 — 6.89(odd) |
| 2.7: 2.131 — 2.145 (odd) | 6.3: 6.91 — 6.107 (odd), 6.100 |
| 3.1: 3.1 — 3.15 (odd) | 6.4: 6.111 — 6.113 (odd) |
| 3.2: 3.17 — 3.35 (odd), 3.39, 3.40, 3.41, 3.43 | |
| 3.3: 3.45 — 3.69 (odd) | |
| 3.4: 3.71 — 3.89 (odd) | |

Continued in next column

Note: Problems with the “Challenge” icon are typical of bonus-type test & exam problems.

**Solutions to all problems from the text are posted in Blackboard under “Course Documents”