

MATH 119: ELEMENTARY STATISTICS

FALL SEMESTER, 2024 (8/19/24-12/16/24); SYLLABUS DATE: 7/28/2024
CLASS # 71706; 3.0 Units; Mon. and Wed., 6:00-7:25pm; MS 418 (Mesa, 4th floor)

INSTRUCTOR: Ken Kuniyuki

Official Address: kkuniyuk@sdccd.edu (esp. for official business like applications).

2nd Email Address: kkuniyuk@yahoo.com; there is no "i" before the "@" in either.

- I usually **check** my email at least once a day, although busy periods may delay responses. To be safe, try emailing both accounts.
- When asking about **homework (HW)**, tell me what you are thinking about the problem, so I know where to start addressing your question. Please go beyond: "How do you do this problem?" Then, I may just give a hint! **Photos help!**

Office / Access Hours: MW 4:30-5:45pm, TTh 5:30-6:45pm in MS 215P (2nd floor).

Appointments are not required, although advance notice is appreciated for long discussions. **To get to MS 215P:** From the main stairs, make two rights, beyond the elevators. From the elevators, make three rights. When you reach the glass doors, you will see the triangle of math offices. I'm at the other end, across from the large glass study area (200G).

Office Phone / Voice Mail: (619) 388-2396. I will try to check messages MTWTh and I may be available for a call during office hours. Long messages could be cut off!

MY WEBSITE AT <http://www.kkuniyuk.com>

MATH 119 SITE: <http://www.kkuniyuk.com/Math119.html>

- Ready access to the Internet and email will be assumed.
- I expect to post **homework assignments; class notes; old and current exams and solutions; tips on test-taking and reducing test anxiety; old YouTube videos, and "Goodies" under "Class Notes."**
- I will try to help you form **study groups**. Email me.

THERE IS NO REQUIRED TEXTBOOK. NOTES ARE ONLINE. HW PROVIDED.

- **Homework (HW)** assignments will be provided on my website. Answers may be given in some class sessions. Students can help each other by "hitting the boards" in class.
- I use **Microsoft Excel** as statistical software, but you don't need it.

ADDITIONAL RESOURCES (OPTIONAL)

- I used to use **Triola's** "Essentials of Statistics" text. **Cheap, old editions** are sold on ebay.com and amazon.com. Weiss and Peck are respected authors, Moore for concepts.
- **Free** online textbooks are available at: <https://openstax.org/subjects/math>

• **My website** has Amazon links to other books and videos. Check ebay.com. The **Schaum's Outline** paperbacks are much cheaper than textbooks, and they have many worked-out problems.

Websites with tutorials, statistical calculators, and tools (see my website GOODIES):

- **Stat Trek** at <https://www.stattrek.com>
- **Statistical calculators** at http://www.tutor-homework.com/statistics_tables/statistics_tables.html

Optional software:

- **Microsoft Excel** – I demonstrate it, but you don't need it.
- **StatCrunch** at <https://www.statcrunch.com>
This costs about \$15. You are not required to use it in this class, but you may want to get it if your program requires you to have some exposure to user-friendly statistical software beyond Excel.

Optional statistics video series (Crash Course Statistics):

https://www.youtube.com/playlist?list=PLH2I6uzC4UEW3iJO4T0qUeUEp_X-f1U7S

Optional, cheap book with many worked-out problems:

- **Schaum's Outline of Statistics** by Murray R. Spiegel and Larry J. Stephens; Publisher: McGraw-Hill. Old editions should be fine, but 6th edition is © 2017, ISBN-10: 1260011461; ISBN-13: 978-1260011463; Amazon link: https://www.amazon.com/Schaums-Outline-Statistics-Sixth-Outlines/dp/1260011461/ref=sr_1_1?keywords=schaum%27s+outline+statistics&qid=1562363963&s=gateway&sr=8-1

Optional, cheap guide:

- **The Cartoon Guide to Statistics** by Larry Gonick; Publisher: HarperResource, 1993. ISBN-10: 0062731025; ISBN-13: 978-0062731029. Amazon link: https://www.amazon.com/Cartoon-Guide-Statistics-Larry-Gonick/dp/0062731025/ref=sr_1_2?keywords=cartoon+guide+to+statistics&qid=1562364499&s=gateway&sr=8-2

ACCOMMODATIONS; DSPS

- Students with disabilities who may need academic accommodations are encouraged to **discuss** their authorized accommodations from Disability Support Programs and Services (DSPS) with their professors **early** in the semester so that accommodations may be implemented as soon as possible.
- The faculty member will work with the DSPS Office to ensure that proper **accommodations** are made for each student. By law, it is up to the DSPS Office to determine which accommodations are appropriate, not the student or the faculty.
- Students with disabilities or medical concerns who may need academic accommodations should notify their professors **immediately**. See the DSPS website at <https://www.sdmesa.edu/student-support/disability-services/learn-about-dsps.shtml>
- If you are involved in professional or college **activities** (e.g., military duty or athletics) that may, for example, hinder your ability to attend class and/or submit homework, let me know **as soon as possible** so that accommodations may be made.
- Students who need **evacuation assistance** during campus emergencies should meet with the instructor as soon as possible to ensure the health and safety of all students.

ADDITIONAL HELP

Canvas site. I base my class on my website, not a Canvas site, but a **discussion board** and **NetTutor** can be accessed on Canvas: <https://sdccd.instructure.com/login/canvas>
Notes: <http://www.kkuniyuk.com/Math119CanvasNotes.pdf>

Websites! My website has links; see “Goodies” under “Class Notes.”

Your fellow students! We meet during office hours and “hit the boards” after class.
Email me. The **Canvas discussion board** may help also.

TUTORING!

- **Mesa Tutoring and Computing Centers (MT2C): Math & Science Tutoring and Computing:** <http://www.sdmesa.edu/mt2c> (link also in Canvas, left sidebar)

Canvas site (including hours, tech help with Zoom and Canvas):
<https://sdccd.instructure.com/courses/2371983>

- **NetTutor.** Free online tutoring via **Canvas:** <https://sdccd.instructure.com/login/canvas>

Live Tutoring (look up “Statistics”): https://www.worldwidewhiteboard.com/w/wb5/php/nt_subject.php?v=x

- **STAR/TRIO Tutoring.** One-on-one weekly tutoring for eligible students (low-income, first-generation college, or disabled).

Email: MesaStarTrio@sdccd.edu

Web: <https://www.sdmesa.edu/student-support/star-trio/index.shtml>

Student resources: <https://www.sdmesa.edu/student-support/>
<https://www.sdmesa.edu/student-support/support-programs-guide.shtml>

- **List of resources:** <https://www.sdmesa.edu/about-mesa/institutional-effectiveness/institutional-research/flyer-resources-student-services-aug24%20with%20links.pdf>
(some links are broken; search on <https://www.sdmesa.edu>)

DEADLINES (SEE THE “VERY TENTATIVE SCHEDULE” AT THE END)

Adding (*); Drops w/no “W”; Refunds	Fri.	Aug. 30	Week 2
Pass / No Pass petition	Fri.	Oct. 25	Week 10
Withdrawal deadline (**)	Fri.	Oct. 25	Week 10

(*) Tuition and fees must be paid within two (?) days of adding a course, or by this deadline, whichever comes first.

(**) If you do not withdraw from the class by this deadline, I must give you an evaluative grade (like A-F, Pass / No Pass).

GRADES / EXAMS / ASSIGNMENTS

- **Points may be deducted** for lateness, not adhering to “good form and procedure (showing good work)” as presented in class, unreadability, and the like. **(Think of me judging you as a tutor – or as a tutee who needs step-by-step help.)** Promptly inform me if there are circumstances preventing you from submitting work on time.
- **Your course score will be out of 600 points (600 points = "100%"), divided as such:**

EXAMS: 520 points (which is about 87% of 600 points)

-- 4 quizzes given, each worth 100 points (each about 17% of 600 points; about 67% total)

-- 1 final given, worth 120 points (20% of 600 points)

- Bring a **scientific calculator** to all exams.
- **Graphing calculators and cell phones will be forbidden**; grade reductions may result from their use. (See **COME TO CLASS WITH / CALCULATOR INFO.**)
- **There are no guarantees regarding makeup exams, although I will make a solid effort to accommodate them.** Even if one is allowed, you may get less time for a harder exam, and it might not be returned; also, it may hurt if you end up at a “borderline” grade. **Testing conditions may be very poor.** You must inform me **as soon as possible** if accommodations are necessary. **Promptly inform me if there is a problem taking an exam; do not expect do-overs of exams to be allowed.**
- **I do not expect to drop exams.**
- **Bring a scientific calculator, a pencil or a pen, and maybe an eraser. Paper will be provided.**
- **Exams are “closed book” and “closed notes,” but a scientific calculator may be allowed on some parts. (See **COME TO CLASS WITH / CALCULATOR INFO.**)**

QUIZZES (more like chapter tests): 400 points (which is about 67% of 600 points)

-- 4 quizzes given, each worth 100 points (about 17% of 600 points)

I expect to provide **formula sheets** on exams. I have drafts on my 119 website.

FINAL: 120 points (20%)

- The Final will be given **during the last class session, on Mon., Dec. 16, in our regular room.**
 - While not technically cumulative, it will tentatively cover Lessons 32-43, and parts of prior Lessons will be reviewed along the way. You’ll need to know a lot!
- I expect to provide a **formula sheet**. See the draft on my 119 website.

HOMEWORK (“HW”): 50 points (about 8% of course grade)

-- 10 points for each of 5 submissions

- The **HW assignments** are on my Math 119 website:
<http://www.kkuniyuk.com/Math119.html>
- Although you are strongly encouraged to do problems as soon as you can, homework will typically be **collected on the day of the corresponding exam (after the HW discussions during the previous session)**, unless the due date is explicitly postponed. For example (see the last page on this syllabus), expect HW #1 to be **discussed** on Day 5 and to be **turned in** to me on Day 6, when you should be taking Quiz 1.
- **Expect late HW to be penalized.** Expect late HW to lose about 5% each day after the due date. Email me if there are difficulties. **The last HW is to be turned in on time.**

HOW TO DO HW: SEE NEXT PAGE!

HOW TO DO HOMEWORK IN OUR CLASS

- Students can write out (or type) their solutions to problems on paper and turn in their HW to me at the corresponding exam. Alternatively, you can email scans or photos of HW to me at **both** kkuniyuk@sdccd.edu and kkuniyuk@yahoo.com (there is a danger of emails going to Spam / Junk folders).
- You **do not have to copy the given problem statements**, though sometimes it helps students.
- **The HW is meant to help you learn and study for exams. Feel free to mark it up! I encourage highlighting, comments in margins, etc.** Your key work must be readable, though. For grading, it will be scanned for completeness and overall integrity.
- If pressed for time, it is usually better to do **parts of all assigned lessons** as opposed to the entirety of a few lessons.
- If you have trouble with HW problems, it may be a good strategy to **leave space for them, temporarily skip them, and come back to them** later. Your spacing does not have to be perfect. **Make sure your solutions are in the correct order so that there is no confusion and you can get all the points.**
- **Make sure you clearly separate sections/lessons on your homework!**
- **Write your first name, last name, and “Math 119” on either a title page or on the upper right corner of the first page.**
- **Put PAGE NUMBERS at the top of your pages. You want credit if you accidentally submit your pages in the wrong order!**
- **Do not turn in a thick, bulky binder.** I collect many HWs, and the HW might not be returned to you for a while.
- On your homework, **show work where appropriate. Points may be deducted** from submissions that are notably incomplete or illegible, that are systematically copied (aside from me), that are turned in late, that do not adhere to “good form and procedure (showing good work)” as presented in class, or that have insufficient, unreadable, or unordered work.
- **Showing work** is critical! My notes and videos will give you guidance on how to show work. Try to think of yourself as a **tutor** who is helping a student who has to be shown **all the steps** – I have the right to grade you like I am that student!
- **Failure to do homework in a timely manner can wreck your grade in this class - in terms of both points and exam preparation!**

CLASS PARTICIPATION / ATTENDANCE: 30 points (5% of 600 points)

- I will take attendance in class, except on exam dates.
- Students who miss the first two weeks of class by not registering attendance **will be dropped.**
- Students who miss three sessions **may be dropped.**
- **Contact me** if you have a problem with attendance.
- This may involve participation in class, class attendance and promptness, avoiding disruptive behavior, office / access hours, email, HW sessions, in-class activities and exercises, possibly Canvas discussion boards, etc.
- **Students are distracted by late arrivals to (or premature departures from) class.**
- Your grade in this class will be affected by class participation as follows: **Everyone will get the 30 points here.** However, class participation can be a **key factor in determining grade “borderline” cases.**

The following are guarantees:

	At least ... out of 600 points			
Course score	540 (90%)	480 (80%)	420 (70%)	360 (60%)
Grade guarantee	A	B or better	C or better	D or better

I do not reverse curve. The grade cutoffs may be lowered.

Percents might not be rounded up!

Class participation could be critical here.

The course may be taken on a Pass / No Pass basis, but check your program requirements, first. The petition deadline is **Fri., Oct. 25 (Week 10)**.

WHAT IF WE GO ONLINE? (NOT EXPECTED)

Exams may go online, or HW could take on greater significance.

ACADEMIC INTEGRITY

- **Cheating is easier to detect than students think! I grade problem-by-problem and often compare student work. Exams may be photocopied any time (namely breaks).**
- Possible penalties include assigned scores of “0” and action by the school dean. Refer to Policy 5500 in the Mesa College catalog.
- **Collaboration** outside of class is encouraged, but **systematic copying is forbidden.**
- In the event of **systematic copying**, the instructor may consult with students before assigning points.
- **Online resources** should be used judiciously and only to **enhance the students’ learning**. Grading may be based on solution methods **as presented in class**.
- Problems and grading schemes from prior terms may not apply now.

CLASSROOM BEHAVIOR AND STUDENT CODE OF CONDUCT:

Students are expected to respect and obey standards of student conduct while in class and on the campus. The student Code of Conduct, disciplinary procedure, and student due process (Policy 5500) can be found in the current college catalog in the section Academic Information and Regulations, and at the office of the Dean of Student Affairs. Charges of misconduct and disciplinary sanctions may be imposed upon students who violate these standards of conduct or provisions of college regulations.

Statements from Mesa / Student Services:

San Diego Mesa College Academic Honesty Statement

San Diego Mesa College values honesty, academic integrity, and community. Our goal is to guide our students in maintaining academic excellence, in addition to fostering a sense of belonging to our campus.

[We expect a student to affirm the following:]

As a student at San Diego Mesa College, I am committed to producing my own work in connection with all lecture and laboratory assessments and assignments, and will refrain from any activity to include copying, cheating, plagiarizing, utilizing outside resources [inappropriately], or any form of academic misconduct. I will only use external sources when approved by faculty, and I will properly acknowledge these external sources. I understand failure to comply with these standards will be considered a violation of the Student Code of Conduct under Board Policy 5500 and may result in student disciplinary action.

We thank our students in advance for adhering to these community standards.

Students are expected to be honest and ethical at all times in the pursuit of academic goals. Students who are found to be in violation of Administrative Procedure (5500) Honest Academic Conduct, may receive a grade of zero on the assignment, quiz, or exam in question and may be referred for disciplinary action in accordance with Administrative Procedure (5500), Student Disciplinary Procedures.

PREPARATIONS FOR CLASS / CALCULATOR INFO:

- You will need **Internet and email** access.
- Copies of **homework** assignments
We will discuss the homework in a session prior to an exam session.
We may have time to discuss homework after class.
- **A scientific (not graphing) calculator - you will need one for the course.**

Some sections at City, Mesa, and Miramar (and at Cuyamaca and Grossmont) are more graphing calculator-based; check the online schedule.

Many scientific calculators are like graphing calculators as far as WYSIWYG (What You See Is What You Get) entry goes. The Sharp EL733A is a good business calculator; the HP 30S has a large display; and the **TI-30X IIS** (which I have and which I can help you with) can also be good, though it relies on menus.

Many instructors like the **TI-36X Pro**. You may be able to borrow one for the semester from the first floor of the library (LRC) – in the STEM Center or at the front desk.

- **Some paper and a pencil or pen: for notetaking and in-class exercises**

RESPONSIBILITY TO ADD, DROP, OR WITHDRAW

It is the student's responsibility to drop all classes in which they are no longer attending. Students who remain enrolled in a class beyond the published withdrawal deadline, as stated in the class schedule, will receive an evaluative letter grade in this class. If you decide to withdraw from this course, you are reminded to do so by **Fri., Oct. 25 (Week 10). To avoid a mark from appearing on your transcript, remember to drop by **Fri., Aug. 30 (Week 2)**.**

Petitions to add, drop, or withdraw after the deadline will not be approved without proof of circumstances beyond the student's control which made them unable to meet the deadline. Lack of money to pay fees is not considered an extenuating circumstance. Students anticipating difficulty in paying fees before the add deadline should check with the Financial Aid Office about sources of funds or other alternatives for which they may be eligible. **Expect "late" adds, drops, and withdrawals to no longer be accepted, with few exceptions (contact Admissions).**

Please discuss your plans to withdraw from class with your instructors. They may have other options for you that may allow you to continue in class.

INSTRUCTOR ABSENCE (DISTRICT POLICY)

If neither the instructor nor a substitute appears at the beginning of the scheduled class time, students shall wait 15 minutes; if neither the instructor nor a substitute appears within those 15 minutes, students may “leave the classroom.”

DO YOU NEED THIS CLASS?

Make sure that you check www.assist.org to see that your major requirements for transfer have not changed. Bear in mind that the site needs updating.

OFFICIAL STUFF WE CAN SKIP 😊

PREREQUISITES

Successful completion of Intermediate Algebra or appropriate placement Milestone M40 or M50 based on CA Title 5 regulations. Students with a Milestone M30 must enroll in MATH 119X (Mathematics 119 and Mathematics 15A learning community).

COURSE DESCRIPTION

This course covers descriptive and inferential statistics. The descriptive portion analyzes data through graphs, measures of central tendency and dispersion. The inferential statistics portion covers statistical rules to compute basic probability, including binomial, normal, Chi-squares, and T-distributions. This course also covers estimation of population parameters, hypothesis testing, linear regression, correlation and ANOVA. Emphasis is placed on applications of technology, using software packages, for statistical analysis and interpretation of statistical values based on data from disciplines including business, social sciences, psychology, life science, health science and education. This course is intended for transfer students interested in statistical analysis.

Credit - Degree Applicable

Transfer Credit: UC,CSU

CSU GE: B4. Mathematics/Quantitative Reasoning

DIST GE: A2. Communications & Analytical Thinking

IGETC: 2. Mathematics

COURSE LEARNING OUTCOMES (MATH 119 COURSE CLOs)

- #1 - Given a variety of situations, students will identify the appropriate hypothesis test.
- #2 - Utilize the correct procedure to conduct a hypothesis test and communicate in words the result of the hypothesis test.

PROGRAM LEARNING OUTCOMES (DEPARTMENTAL / MATH)

“Students who complete the Mathematics program will be able to.....”

- 1) Problem Solving: Apply appropriate mathematical definitions, properties, techniques, and/or technology to a variety of problem solving situations.
- 2) Interrelatedness of Concepts: Demonstrate knowledge of the interrelatedness of several mathematical concepts.
- 3) Communication and Reasoning: Demonstrate the ability to communicate mathematical reasoning both in the context of solving a problem and in the reasonableness of a solution.

STUDENT LEARNING OBJECTIVES

Technology-based statistical analyses are implemented throughout the entire course.

1. Organize qualitative and quantitative data into meaningful charts and graphs.
2. Evaluate measures of location, central tendency and variation of data and probability distribution
3. Analyze data by implementing various scales of measurements and formalize results based on statistical procedures.
4. Evaluate probabilities using a variety of computational methods.
5. Analyze various discrete and continuous probability density functions, and use these to generate cumulative probability distribution functions, emphasizing the expected value and variance of the corresponding random variables.
6. Apply the appropriate probability distribution functions including the binomial, the normal, the Chi-Squared and the t-distributions, to calculate probabilities of random variable values in prescribed ranges.
7. Identify the standard methods of obtaining data and identify advantages and disadvantages of each.
8. Apply the Central Limit Theorem to sampling distributions.
9. Calculate confidence intervals using test statistics to determine the level of significance of the mean, the variance, and the sample proportion.
10. Formulate hypothesis tests discussing the differences between Type I and Type II errors.

11. Perform hypothesis tests for various random variables including means, one and two-sample proportions, and variance.
12. Evaluate correlation to determine the corresponding linear regression between two sets of data.
13. Apply ANOVA analysis of estimation and inference, and interpret corresponding statistics.

STUDENT SERVICES SUPPORT: SAN DIEGO MESA JOURNEYS TOOL

The San Diego Mesa Journeys tool (<http://www.sdmesa.edu/mesa-journeys/>) provides free access to over 30+ support programs and services to help you succeed. The “Your Mesa Journey” tool is a short survey asking various questions about your demographics and educational goals. Based on your responses, the application will then provide you a list of recommended programs and services that may help you with your educational journey here at Mesa College. Please complete it today at: <http://www.sdmesa.edu/mesa-journeys/>

INTERNET TECHNOLOGY

- **YOUTUBE**

Optional: Old lecture videos are posted on my website:

<http://www.kkuniyuk.com/Math119.html> (general)

<http://www.kkuniyuk.com/Math119YouTube.html>

- **CANVAS:** <https://sdccd.instructure.com/login/canvas>

Student discussion boards and **NetTutor** are available.

I do not plan to use Canvas much. **Grade** info will be on returned exams or in emails.

LEARNING CULTURE (Motivation & Student Success)

<http://turning-on-the-lights.com/>

- Student potential is not questioned.

- You define you! Seek solutions and be mentally tough!

NOTES / CLASS CONTACTS

MATH 119 VERY TENTATIVE SCHEDULE (version 1)

Can be changed; L = Lesson Number; HW = Discuss student questions about homework

FALL 2024; Week # (Holidays / Deadlines)	MONDAY	WEDNESDAY
1	8/19 (Day 1) – Hello; L1 / L2 / L3 / L4 / L5	8/21 (Day 2) L6 / L7
2 <i>Add; Drop w/no W; Refund (Fri., 8/30)</i>	8/26 (Day 3) L8 / L9 (start)	8/28 (Day 4) L9 (finish) / L10
3 Holiday (Mon., 9/2)	9/2 HOLIDAY	9/4 (Day 5) HW (discussing it)
4	9/9 (Day 6) QUIZ 1: L1-10	9/11 (Day 7) L11
5	9/16 (Day 8) L12 / L13	9/18 (Day 9) L14 / L15
6	9/23 (Day 10) L16 / L17	9/25 (Day 11) L18
7	9/30 (Day 12) HW (discussing it)	10/2 (Day 13) QUIZ 2: L11-18
8	10/7 (Day 14) L19 / L20	10/9 (Day 15) L21 / L22 (start)
9	10/14 (Day 16) L22 (finish) / L23	10/16 (Day 17) HW (discussing it)
10 <i>“W” deadline; Pass/No Pass (Fri., 10/25)</i>	10/21 (Day 18) QUIZ 3: L19-23	10/23 (Day 19) L24 / L25
11	10/28 (Day 20) L26 / L27 / L28 (start)	10/30 (Day 21) L28 (finish) / L29
12	11/4 (Day 22) L30 / L31	11/6 (Day 23) HW (discussing it)
13 Holiday (Mon., 11/11)	11/11 HOLIDAY	11/13 (Day 24) QUIZ 4: L24-31
14	11/18 (Day 25) L32	11/20 (Day 26) L33 / L34
No classes this week!	NO CLASS	NO CLASS
15	12/2 (Day 27) L35 / L36 / L37 / L38	12/4 (Day 28) L39 / L40 / L41
16	12/9 (Day 29) L42 / L43	12/11 (Day 30) HW (discussing it)
17 <i>Semester ends (Mon., 12/16)</i>	12/16 (Day 31) FINAL: L32-43	

MATH 119: Elementary Statistics; Mesa; Class # 71706; 3 units; MW 6:00-7:25pm; MS 418 (4th floor)

Ken Kuniyuki; kkuniyuk@sdccd.edu (official) and kkuniyuk@yahoo.com (backup)

YouTube: (organized on my website)

Office / Access Hours: MW 4:30-5:45p, TTh 5:30-6:45p; MS 215P (2nd floor); no appointment needed

Website (with complete syllabus): www.kkuniyuk.com