HCC | **HOUSTON COMMUNITY COLLEGE**

Division of Mathematics
Mathematics Department
https://learning.hccs.edu/programs/mathematics

Math 1342: Elementary Statistical Methods| Online | CRN 22843
Spring 2021 (RT) | 16 weeks (1/19/2021 – 5/16/2021) |3 Credit Hours

Instructor Contact Information

Instructor: Mohammad Torki-Saberi   Math dept. phone #: (713)718-7770
Office location and hours: Learning Hub, Room 303, M - F   4:00 PM – 5:00 PM
HCC Email: mohammad.torkisaberi@hccs.edu

Please feel free to contact me concerning any problems that you are experiencing in this course. Your performance in my class is very important to me. I am available to hear the concerns and just to discuss course topics.

What's Exciting About This Course

Statistics is a science based on data with applications in various fields like health sciences, social sciences, business, and engineering. This course will help you to understand about both descriptive and inferential statistics and its applications.

My Personal Welcome

I'm delighted that you have chosen this course! I will present the information in the simplest way I know, so that you can grasp the concepts and learn the material. If you have any questions regarding course materials, please let me know. The fastest way to reach me is by my HCC email. I'm available during posted office hours to answer your questions. My goal is for you to succeed. So, contact me by email or canvas email whenever you have a question.

Prerequisites and/or Co-Requisites

Prerequisites: A grade of C or better in Math 0310 or its equivalent or an acceptable placement score. A grade of C or better in Math 0314 its equivalent or an acceptable placement score.
Co-Requisites: MATH 0342 is a co-requisite to MATH 1342. Since MATH 0342 is co-requisite with MATH 1342, withdrawing from either MATH 0342 or Math 1342 will necessitate withdrawal from the other as well. Please carefully read and consider the repeater policy in the HCCS Student Handbook.

Canvas Learning Management System

This section of MATH 1342 will use Canvas (https://eagleonline.hccs.edu) to supplement in-class assignments, exams, and activities. All course materials would be posted on both canvas and learning web. All your test scores and HW grades would also be posted on "Canvas".

HCCS Open Lab locations may be used to access the Internet and Canvas. **USE FIREFOX OR CHROME AS THE INTERNET BROWSER**.

HCC Online Information and Policies

Include if Online course. Here is the link to information about HCC Online classes including the required Online Orientation for all fully online classes: http://www.hccs.edu/online/

You need to register for Connect Math through Canvas since Canvas and Connect Math are paired. This way you will login only to Canvas and be directed to Connect Math to do your homework. You would also be able to see your homework grade on Canvas.

Instructional Materials

Textbook Information
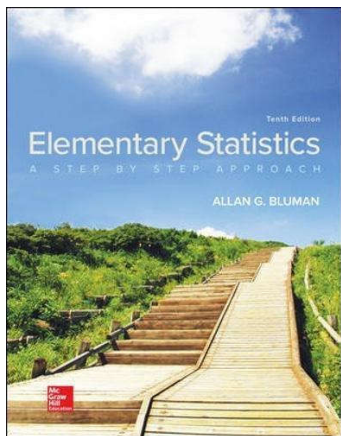
The textbook listed below is *required* for this course.
Elementary Statistics, A Step by Step Approach, 10th Edition, By Bluman, McGraw-Hill Education, ISBN: 978-1264094592

ISBN: 9781260364323 (access code with e-book)
It is included in a package that contains the text as well as an access code and are found at the HCC Bookstore. You may either use a hard copy of the book or the e-book through Connect Math.

Other Instructional Resources

Tutoring

HCC provides free, confidential, and convenient academic support, including writing critiques, to HCC students in an online environment and on campus. Tutoring is provided by HCC personnel in order to ensure that it is contextual and appropriate. Visit the HCC Tutoring Services website for services provided.

Libraries

The HCC Library System consists of 9 libraries and 6 Electronic Resource Centers (ERCs) that are inviting places to study and collaborate on projects. Librarians are available both at the libraries and online to show you how to locate and use the resources you need. The libraries maintain a large selection of electronic resources as well as collections of books, magazines,

newspapers, and audiovisual materials. The portal to all libraries' resources and services is the HCCS library web page at http://library.hccs.edu.

Supplementary Instruction

Supplemental Instruction is an academic enrichment and support program that uses peer-assisted study sessions to improve student retention and success in historically difficult courses. Peer Support is provided by students who have already succeeded in completion of the specified course, and who earned a grade of A or B. Find details at http://www.hccs.edu/resources-for/current-students/supplemental-instruction/.

Remote Exam Proctoring (Remote Invigilation)

The Math Department is requiring the remote proctoring of all major examinations (including the Final Exam) to ensure the integrity of the assessment process and to prevent acts of academic dishonesty. In this course, in addition to a reliable internet connection, you will be required to have hardware that meets the following minimal requirements:

a) a functioning webcam and microphone, and

b) a computer with operating system that is capable of running the Respondus LockDown Browser and Respondus Monitor.

Course Overview

This course is intended for students primarily in health sciences and business rather than math or science majors. It consists of concepts, ideas, and applications of statistics rather than a theory course. Topics include histograms, measures of central tendency and variation, probability, binomial and normal distributions, and their applications, confidence intervals, and tests of statistical hypotheses.

Core Curriculum Objectives (CCOs)

Given the rapid evolution of necessary knowledge and skills and the need to take into account global, national, state, and local cultures, the core curriculum must ensure that students will develop the essential knowledge and skills they need to be successful in college, in a career, in their communities, and in life. Through the Texas Core Curriculum, students will gain a foundation of knowledge of human cultures and the physical and natural world, develop principles of personal and social responsibility for living in a diverse world, and advance intellectual and practical skills that are essential for all learning.

- *Critical Thinking*: to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.
- *Communication Skills*: to include effective development, interpretation and expression of ideas through written, oral and visual communication.
- *Quantitative and Empirical Literacy*: to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.

Program Student Learning Outcomes (PSLOs)

Students in the Mathematics Program will:
1. Engage in problem solving strategies, such as organizing information, drawing diagrams and modeling.
2. Use symbolic representations to solve problems. This includes manipulating formulas, solving equations, and graphing lines.
3. Build the foundational mathematical skills that will enable a student to successfully complete a college level mathematics course.

Course Student Learning Outcomes (CSLOs)

Upon completion of MATH 1342, the student will be able to:
1. Explain the use of data collection and statistics as tools to reach reasonable conclusions.
2. Recognize, examine and interpret the basic principles of describing and presenting data.
3. Compute and interpret empirical and theoretical probabilities using the rules of probabilities and combinatorics.
4. Explain the role of probability in statistics.
5. Examine, analyze and compare various sampling distributions for both discrete and continuous random variables.
6. Describe and compute confidence intervals.
7. Solve linear regression and correlation problems.
8. Perform hypothesis testing using statistical methods.

Learning Objectives

Upon completion of MATH 1342, the student will be able to:
1. Demonstrate knowledge of statistical terms.
2. Understand the different between descriptive and inferential statistics.
3. Identify: types of data, measurement level of variables, and four basic sampling techniques.
4. Construct the relative frequency table from a given set of ungroup data.
5. Know and use the different graphs: histogram, frequency polygon, Ogives, Pareto, and pie to present data.
6. Compute the mean, median, mode, midrange, range, variance, and standard deviation.
7. Identify the various measures of position such as percentiles, deciles, and quartiles.
8. Find the total number of outcomes in a sequence of events using tree diagram and multiplication rule.
9. Understand the use of permutation and combination rules.
10. Determine sample spaces and find the probability of an event using classical probability.
11. Find the probability of compound events using addition and/or multiplication rules.
12. Find the conditional probability of an event
13. Construct a probability distribution for a random variable
14. Find the mean, variance, and expected value for a probability distribution function.
15. Find the exact probability for X successes in n trial of a binomial experiment.
16. Find the mean, variance, and standard deviation for binomial distribution.
17. Identify the properties of the normal distribution.
18. Find the area under the normal curve, given various z values.
19. Find probabilities for a normally distributed variable by transforming it into a standard normal variable.
20. Find specific data values for given percentages using the standard normal distribution.
21. Apply the central limit theorem to solve problems involving sample means.
22. Use the normal approximation to compute probabilities for a binomial variable.
23. Find a confidence interval for the mean when   is known or n   30.
24. Determine the minimum sample size for finding a confidence interval for the mean.
25. Find a confidence interval for the mean when   is unknown and n < 30.
26. Find a confidence interval for proportion.
27. Determine the minimum sample size for finding a confidence interval for a proportion.
28. Find a confidence interval of variance and standard deviation.
29. Understand the definitions used in hypothesis testing.
30. State null hypothesis and alternative hypothesis.
31. Understand the terms: type I error and type II error, test criteria, level of significance, test statistic.
32. Find the critical values for the z-test, t-test, and -test.
33. Test hypothesis for: means (large and small sample), proportions, variance, and standard deviation.
34. Draw scatter plot for a set of ordered pairs.
35. Compute the correlation coefficient and the coefficient of determination.
36. Compute the equation of the regression line by using the least square method.
37. Test a distribution for goodness of fit using chi-square.
38. Test independence and homogeneity using chi-square.

Student Success

Expect to spend at least twice as many hours per week outside of class as you do in class studying the course content. Additional time will be required for written assignments. The assignments provided will help you use your study hours wisely. Successful completion of this course requires a combination of the following:
- Reading the textbook
- Attending class in person and/or online
- Completing assignments
- Participating in class activities

There is no short cut for success in this course; it requires reading (and probably re-reading) and studying the material using the course objectives as a guide.

Instructor and Student Responsibilities

As your Instructor, it is my responsibility to:
- Provide the grading scale and detailed grading formula explaining how student grades are to be derived
- Facilitate an effective learning environment through learner-centered instructional techniques
- Provide a description of any special projects or assignments
- Inform students of policies such as attendance, withdrawal, tardiness, and making up assignments
- Provide the course outline and class calendar that will include a description of any special projects or assignments
- Arrange to meet with individual students before and after class as required

As a student, it is your responsibility to:
- Attend class in person and/or online
- Participate actively by reviewing course material, interacting with classmates, and responding promptly in your communication with me
- Read and comprehend the textbook
- Complete the required assignments and exams
- Ask for help when there is a question or problem
- Keep copies of all paperwork, including this syllabus, handouts, and all assignments
- Be aware of and comply with academic honesty policies in the HCCS Student Handbook

Assignments and Exams

Student Assignments

Assignments have been developed that will enhance your learning. To better understand a topic, you will be given assignments on key information that you will need to remember for your success in your career. Students will be required to successfully complete the following:

Homework:

All homework must be completed online using "Connect Math". To register for "Connect Math" and to access the homework, go to canvas and click Connect Math where you will register for Connect Math. Connect Math is not free. You will need to buy "access code". It gives you access to e-book and homework. All students are required to do homework and it counts as a part of final course grade (counts 100 points). **Please register using same name which you used to register for the course.**

The deadline for all homework on Connect Math is Friday, May 14 @ 11:59 PM.

Exam Policy:
There will be 4 major exams, and a final exam. All exams including the final exams will be taken in "Canvas".

Final course grade will be the average of best 2 test scores (Will drop one of the lowest exam grades), Homework, Midterm, and Final exam as shown in the following formula.

Course Grade = (best 2 test scores + HW + Midterm + Final) /600 ; Final = 200 ; HW = 100

The exam dates are given in "Test Schedule" and will be announced on canvas.

Calculators
Students are allowed to use calculators, formulas, and tables for all exams including final exam.

Make-up
There are no make-up exams.

Final Examination:

All exams will be on LockDown browser. The midterm and final exam will be on LockDown browser and webcam monitor.

Course content and testing

Unit 1: Nature of probability and statistics and data presentation
        Sections to be covered: 1.1-1.5 ; 2.1-2.3 ; 3.1-3.4
        Chapter 1 - Nature of Probability and Statistics
        Chapter 2 - Frequency distribution and Graphs.
        Chapter 3 - Data Description

    Unit 2: Counting techniques, probability, and distributions
        Sections to be covered: 4.1-4.5 ; 5.1-5.4
        Chapter 4 - Probability and Counting Rules
        Chapter 5 - Discrete Probability Distributions

    Unit 3: Normal distribution and Confidence Intervals
        Sections to be covered: 6.1-6.4 ; 7.1-7.4
        Chapter 6 - Normal Distribution
        Chapter 7 - Confidence Intervals and Sample size

    Unit 4: Hypothesis testing, Testing the difference , and Regression
        Sections to be covered: 8.1-8.5 ; 9.1-9.5 ; 10.1-10.3
        Chapter 8 - Hypothesis Testing
        Chapter 9 - Testing the difference
        Chapter 10 - Correlation and Regression

Test **1**: is on unit 1 which covers chapters **1, 2, 3**
Test **2**: is on unit 2 which covers chapters **4, 5**
Test **3**: is on unit 3 which covers chapters **6, 7**
Test **4**: is on unit 4 which covers chapters **8, 9 but not chapter 10**

Final exam covers all chapters including chapter 10.

EXAMS : There will be 4 home exams and a final exam and will be given on following dates.

Test Schedule:

Test	Chapter Covered on Test	Exam dates
Test #1 (Online - Canvas) (LockDown Browser)	Chapter 1, 2, 3	Opens on Saturday, Feb. 13 @10:00 AM and closes on Sunday, Feb. 14 @ 10:00 PM (1 attempt)
Test # 2 (Midterm) (**Online - Canvas**) (**LockDown Browser & webcam monitor**)	Chapter 4, 5	Opens on Saturday, March 13 @10:00 AM and closes Sunday, March 14 @ 10:00 PM (1 attempt)
Test # 3 (Online -Canvas) (LockDown Browser)	Chapter 6, 7	Opens on Saturday, April 17 @10:00 AM and closes on Sunday, April 18 @ 10:00 PM (1 attempt)
Test # 4 (Online - Canvas) (LockDown Browser)	Chapter 8, 9	Opens on Saturday, May 8 @ 10:00 AM and closes on Sunday, May 9 @ 10:00 PM (1 attempt)
Final Exam (**Online - Canvas**) (**LockDown Browser & webcam monitor**)	Comprehensive (all sections) including Chapter 10	Opens on Thursday, May 13 @ 10:00 AM and closes on Friday, May 14 @ 10:00 PM

Please read below:

LockDown Browser Requirement
This course requires the use of LockDown Browser for online exams. Watch this video to get a basic understanding of LockDown Browser:

https://www.respondus.com/products/lockdown-browser/student-movie.shtml

Download Instructions
Download and install LockDown Browser from this link:

https://download.respondus.com/lockdown/download.php?id=355612798

Once Installed

- Start LockDown Browser
- Log into to Canvas
- Navigate to the quiz

Grading Scale
90 - 100 = A ; 80 - 89 = B ; 70 - 79 = C ; 60 - 69 = D ; Below 60 = F

Final course grade will be the average of best 2 test scores (Will drop one of the lowest exam grades), Homework, Midterm, and Final exam as shown in the following formula.

Course Grade = (best 2 test scores + HW + Midterm + Final) /600 ; Final = 200 ; HW = 100

The deadline for all homework on Connect Math is Friday, May 14 @ 11:59 PM.

Instructor's Practices and Procedures

Missed Assignments

Make-up
Make-up will be given only under exceptional circumstances, and at the instructor's discretion. A student missing an exam shall provide original, appropriate documentation justifying their absence in order to be considered for a make-up exam.

Academic Integrity

All forms of academic dishonesty including, but not limited to cheating, plagiarism, and collusion are serious offenses. Possible consequences for academic dishonesty include a grade a 0 or F in the particular assignment, failure in the course, and/or recommendations for probation or dismissal from the institution.

Here's the link to the HCC information about academic integrity (Scholastic Dishonesty and Violation of Academic Scholastic Dishonesty and Grievance):
http://www.hccs.edu/about-hcc/procedures/student-rights-policies--procedures/student-procedures/

Attendance Procedures

Class Attendance - It is important that you come to class! Attending class regularly is the best way to succeed in this class. Research has shown that the single most important factor in student success is attendance. Simply put, going to class greatly increases your ability to succeed. You are expected to be on time at the beginning of each class period. For complete information regarding Houston Community College's policies on attendance, please refer to the Student Handbook. You are responsible for materials covered during your absences. Class attendance is checked daily. Although it is your responsibility to drop a course for nonattendance, the instructor has the authority to drop you for excessive absences.

If you are not attending class, you are not learning the information. As the information that is discussed in class is important for your career, **students may be dropped from a course after accumulating absences in excess of six (6) hours of instruction**. The six hours of class time would include any total classes missed or for excessive tardiness or leaving class early.

You may decide NOT to come to class for whatever reason. As an adult making the decision not to attend, you do not have to notify the instructor prior to missing a class. However, if this happens too many times, you may suddenly find that you have "lost" the class.
Poor attendance records tend to correlate with poor grades. If you miss any class, including the first week, you are responsible for all material missed. It is a good idea to find a friend or a buddy in class who would be willing to share class notes or discussion or be able to hand in your work if you unavoidably miss a class.

The last day to withdraw is: Tuesday, April 6, 2021

Student Conduct

Classroom Behavior
It is our shared responsibility to develop and maintain a positive learning environment for everyone. As your instructor, I take this responsibility very seriously and will inform members of the class if their behavior makes it difficult for him/her to carry out this task. As a fellow learner, you are to respect the learning needs of your classmates and assist your instructor achieve this critical goal.

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Electronic Devices

Use of Camera and/or Recording Devices
As a student active in the learning community of this course, it is your responsibility to be respectful of the learning atmosphere in your classroom. To show respect of your fellow students and instructor, you will turn off your phone and other electronic devices, and will not use these devices in the classroom unless you receive permission from the instructor.

Use of recording devices, including camera phones and tape recorders, is prohibited in classrooms, laboratories, faculty offices, and other locations where instruction, tutoring, or testing occurs. Students with disabilities who need to use a recording device as a reasonable accommodation should contact the Office for Students with Disabilities for information regarding reasonable accommodations.

Mathematics Program Information

- HCC Math Student Organizations: Mu Alpha Theta: Application: https://www.hccs.edu/resources-for/current-students/stem--science-technology-engineering--mathematics/stem-clubs/mu-alpha-theta-application/

HCC Policies
Here's the link to the HCC Student Handbook http://www.hccs.edu/resources-for/current-students/student-handbook/   In it you will find information about the following:

- Academic Information
- Academic Support
- Attendance, Repeating Courses, and Withdrawal
- Career Planning and Job Search
- Childcare
- disAbility Support Services
- Electronic Devices
- Equal Educational Opportunity
- Financial Aid TV (FATV)
- General Student Complaints
- Grade of FX
- Incomplete Grades
- International Student Services
- Health Awareness
- Libraries/Bookstore
- Police Services & Campus Safety
- Student Life at HCC
- Student Rights and Responsibilities
- Student Services
- Testing
- Transfer Planning
- Veteran Services

EGLS[3]
The EGLS[3] (Evaluation for Greater Learning Student Survey System) will be available for most courses near the end of the term until finals start. This brief survey will give invaluable

information to your faculty about their teaching. Results are anonymous and will be available to faculty and division chairs after the end of the term. EGLS[3] surveys are only available for the Fall and Spring semesters. –EGLS3 surveys are not offered during the Summer semester due to logistical constraints.
http://www.hccs.edu/resources-for/current-students/egls3-evaluate-your-professors/

Campus Carry Link

Here's the link to the HCC information about Campus Carry:
http://www.hccs.edu/departments/police/campus-carry/

HCC Email Policy

When communicating via email, HCC requires students to communicate only through the HCC email system to protect your privacy. If you have not activated your HCC student email account, you can go to HCC Eagle ID and activate it now. You may also use Canvas Inbox to communicate.

Housing and Food Assistance for Students

Any student who faces challenges securing their foods or housing and believes this may affect their performance in the course is urged to contact the Dean of Students at their college for support. Furthermore, please notify the professor if you are comfortable in doing so. This will enable HCC to provide any resources that HCC may possess.

Office of Institutional Equity

Use the link below to access the HCC Office of Institutional Equity, Inclusion, and Engagement (http://www.hccs.edu/departments/institutional-equity/)

disAbility Services

HCC strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including long and short term conditions, mental health, chronic or temporary medical conditions), please meet with a campus Abilities Counselor as soon as possible in order to establish reasonable accommodations. Reasonable accommodations are established through an interactive process between you, your instructor(s) and Ability Services. It is the policy and practice of HCC to create inclusive and accessible learning environments consistent with federal and state law. For more information, please go to http://www.hccs.edu/support-services/disability-services/

Title IX

Houston Community College is committed to cultivating an environment free from inappropriate conduct of a sexual or gender-based nature including sex discrimination, sexual assault, sexual harassment, and sexual violence. Sex discrimination includes all forms of sexual and gender-based misconduct and violates an individual's fundamental rights and personal dignity. Title IX prohibits discrimination on the basis of sex-including pregnancy and parental status in educational programs and activities. If you require an accommodation due to pregnancy please contact an Abilities Services Counselor. The Director of EEO/Compliance is designated as the Title IX Coordinator and Section 504 Coordinator. All inquiries concerning HCC policies, compliance with applicable laws, statutes, and regulations (such as Title VI, Title IX, and Section 504), and complaints may be directed to:

David Cross
Director EEO/Compliance
Office of Institutional Equity & Diversity
3100 Main
(713) 718-8271
Houston, TX 77266-7517 or Institutional.Equity@hccs.edu
http://www.hccs.edu/departments/institutional-equity/title-ix-know-your-rights/

Office of the Dean of Students

Contact the office of the Dean of Students to seek assistance in determining the correct complaint procedure to follow or to identify the appropriate academic dean or supervisor for informal resolution of complaints.

https://www.hccs.edu/about-hcc/procedures/student-rights-policies--procedures/student-complaints/speak-with-the-dean-of-students/

Department Chair Contact Information

College - Level Math Courses

Chair of Math	Susan Fife	SW Campus	713-718-7241	Stafford, Scarcella, N108
- Admin. Assistant	Tiffany Pham	SW Campus	713-718-7770	Stafford, Scarcella, N108
- Admin. Assistant	Christopher Cochran	SW Campus	713-718-2477	Stafford, Scarcella, N108
Math Assoc. Chair	Jaime Hernandez	CE Campus	713-718-7772	San Jacinto Building, Rm 369
Math Assoc. Chair	Mahmoud Basharat	NW Campus	713-718-2438	Katy Campus Building, Rm 112
Math Assoc. Chair	Emmanuel Usen	NE Campus	713-718-8062	Northline, Rm 324

Developmental Math Courses

Chair of Dev. Math	Marisol Montemayor	SE Campus	713-718-7153	Felix Morales Building, Rm 124
- Admin. Assistant	Carmen Vasquez	SE Campus	713-718-7056	Felix Morales Building, Rm 124
Dev. Math Assoc. Chair	Hien Nguyen	SE Campus	713-718-2440	Felix Morales Building, Rm 124
Dev. Math Assoc. Chair	Jack Hatton	SW Campus	713-718-2434	Stafford, Learning Hub, Room 208

For issues related to your class, please first contact your instructor.
If you need to contact departmental administration, then contact the appropriate Associate Chair.
If further administrative contact is necessary, then contact the appropriate Department Chair.

PROGRAM INSTRUCTIONAL PLAN FOR LOST WEEKS

Program Suggested Out-Of-Class Methods to Recover Lost Time

A. Complete learning activity worksheet on a topic in the mathematics course.

Learning activity worksheets on hypothesis testing.

B. Engage students in an online discussion on a course related topic using instructional software

Online discussions using canvas and Connect Math on various topics to help students

C. Faculty will Engage in online chat with students regarding course content

Communicate using online chats on Canvas or email regarding course content.

D. Complete learning activity: Instructional Video

Instructional videos in Connect Math are mandatory in order for students to watch and learn topics more.

I. Test outside of class time, freeing up additional instructional time

All exams except final exam will be given on Saturday and Sunday to recover lost time.