



**Division of Mathematics  
Mathematics Department**

<https://learning.hccs.edu/programs/mathematics>

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**Math 1342: Elementary Statistical Methods| Lecture | #19461**

Spring 2020 | 16 Weeks (1.21.2019-5.15.2020)

In-Person | Alief B219 | MW 7:00 p.m.-8:20 p.m.

3 Credit Hours | 48 hours per semester

**Instructor Contact Information**

Instructor: **Rick Prather**

Office Hours: **M/W 4:30-5:30 pm**

HCC Email: [richard.prather@hccs.edu](mailto:richard.prather@hccs.edu)

Office Phone: **713-718-6067 (no texts)**

**T/R 9:30-11 am**

Office Location: **Alief 4<sup>th</sup> Floor, Room C 413**

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.

**Instructor's Preferred Method of Contact**

**<< HCC Email or Office Visit >>** I will respond to emails within 24 hours Monday through Friday; I will reply to weekend messages on Monday mornings.

**What's Exciting About This Course**

Math 1342 is Statistics and is designed for students in Social Science fields. There are many real world applications that use Statistics and many fields of study benefit from it. Stat is not like most math classes and has both math calculations as well as writing aspects.

**My Personal Welcome**

Welcome to the start of the new semester and get ready for a fun and informative class that will provide you with skills and knowledge to be successful in all math classes.

As you read and wrestle with new ideas and facts that may challenge you, I am available to support you. The fastest way to reach me is by my HCC email. The best way to really discuss issues is in person and I'm available during posted office hours to tackle the questions. My goal is for you to walk out of the course with a better understanding of yourself and math. So please visit me or contact me by email/phone 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) (<https://eagleonline.hccs.edu>) to supplement in-class assignments, exams, and activities.

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

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/>

### Scoring Rubrics, Sample Assignments, etc.

Look in Canvas for the scoring rubrics for assignments, samples of class assignments, and other information to assist you in the course. <https://eagleonline.hccs.edu/login/ldap>

Professor Prather's 2020 Spring Schedule:

Monday/Wednesday

11:00-12:20 PM = Math 1316

12:30-1:50 PM = Math 1342

4:30-5:20 PM = Office Hours (C413)

5:30-6:50 PM = Math 0342

7:00-8:20 PM = Math 1342

Tuesday/Thursday

8:00-9:20 AM = Math 1316

9:30-10:50 AM = Office Hours (C413)

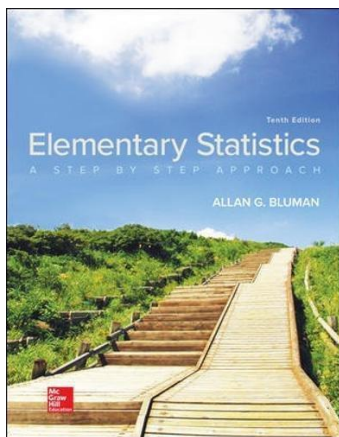
12:30-1:50 PM = Math 1316

2:00-3:50 PM = Math 2412

Note I am not on campus on Friday's or weekends.

## Instructional Materials

### Textbook Information



The textbook listed below is **required** for this course.

**Elementary Statistics, A Step by Step Approach, 10<sup>th</sup> 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.

### Temporary Free Access to E-Book

For temporary free access to Connect Math and the online eBook, go to [www.connectmath.com](http://www.connectmath.com) and register using the temporary access.

### 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/>.

## 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 difference 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  $\sigma$  is known or  $n \geq 30$ .
24. Determine the minimum sample size for finding a confidence interval for the mean.
25. Find a confidence interval for the mean when  $\sigma$  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  $F$ -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, Exams, and Activities

### Exams

You will take three (3) in class, on paper tests plus a cumulative final exam. Tests are a mixture of multiple choice and free response. Partial Credit is given when work is shown on free response questions. You can use a calculator and scratch paper on tests. Most formulas are provided. No notes, books, phones, computers or help of any kind is allowed during tests. Do not help or communicate with other students during tests. You cannot share calculators with other students during a test either. There are no dropped tests or extra credit so be sure to be prepared for all tests. There are no make up tests without an extreme emergency that can be documented. If you know you will miss a test, or an emergency

comes up contact your professor asap by phone or email. Do not wait until the next class meeting or you will receive a zero for that test. Tests will be graded and returned at the next class meeting and grades will be updated in Canvas. If you finish a test before the end of the class time, you may leave when finished. No lectures after a test.

## Final Exam

All students will be required to take a cumulative Final exam.

### Final Exam Review Sessions: HCC MATH DAYS

The Math Department will offer several Final Exam Review sessions (i.e., **HCC Math Days**) for this course near the end of the semester (Fall and Spring semesters only). We encourage you to attend at least one of these sessions as you prepare for the comprehensive Final Exam. Your professor will provide you with more information regarding HCC Math Days locations and session times later in this semester.

While the full-time Math Department faculty leading these review sessions are prepared to answer students' questions on a variety of course topics, the **Final Exam Study Guide** will provide the basis for the HCC Math Days sessions. Therefore, to get the most out of these review sessions, be sure review and to work through the **Final Exam Study Guide** before you attend the review session(s). Please ask your professor if you have any questions regarding these sessions. Finally, the Math 1342 **Final Exam Study Guide** and the **dates** for the Math Days review sessions are located at:

<https://cofinite.com/MathDays/Math1342.php>

## Grading Formula

Exam 1 (Ch. 1-3)	20% of your grade
Exam 2 (Ch. 4-6)	20% of your grade
Exam 3 (Ch. 7-9)	20% of your grade
Homework	10% of your grade
In-Class Quizzes	5% of your grade
Final Exam (Ch. 1-11)	25% of your grade

Grade	Overall Percentage
A	90% +
B	80%-89%
C	70%- 79%
D	60%-69%
F	<60%

### Incomplete Policy:

In order to receive a grade of Incomplete ("I"), a student must have completed at least 85% of the work in the course. In all cases, the instructor reserves the right to decline a student's request to receive a grade of Incomplete.

**HCC Grading Scale can be found on this site under Academic Information:**  
<http://www.hccs.edu/resources-for/current-students/student-handbook/>

## Course Calendar

(Sample)

<b>Week</b>	<b>Dates</b>	<b>Topic/What's due</b>
1	1/20 1/22	NO CLASS (Holiday) Syllabus
2	1/27 1/29	Chapter 1 Chapter 2
3	2/3 2/5	No Class (Prior Commitment) Chapter 3 & Quiz # 1 (Ch. 1-2)
4	2/10 2/12	Review for Test # 1 Test # 1 (Ch. 1-3)
5	2/17 2/19	NO CLASS (Holiday) Return Tests & 4.1 & 4.2 & 4.3
6	2/24 2/26	4.4 & 4.5 & 5.1 5.2 & 5.3 & 5.4
7	3/2 3/4	6.1 & 6.2 6.3 & 6.4 & Quiz # 2 (Ch. 4-5)
8	3/9 3/11	Review for Test # 2 Test # 2 (Ch. 4-6)
9	3/23 3/25	Return Tests & 7.1 & 7.2 7.3 & 7.4
10	3/30 4/1	8.1 & 8.2 8.3 & 8.4
11	4/6 4/8	9.1 & 9.2 9.4 & Quiz # 3 (Ch. 7-8)
12	4/13 4/15	Review for Test # 3 Test # 3 (Ch. 7-9)
13	4/20 4/22	Return Tests & 10.1 10.2
14	4/27 4/29	10.3 11.1 & Quiz # 4 (Ch. 10)
15	5/4 5/6	11.2 Review for Final Exam
16	5/11 5/13	NO CLASS (Exam Week) Final Exam (All Chapters) = 7:30 PM - 9:30 PM

### Syllabus Modifications

The instructor reserves the right to modify the syllabus at any time during the semester and will promptly notify students in writing, typically by e-mail, of any such changes.

## Instructor's Practices and Procedures

### Academic Integrity

Consequences for academic dishonesty can include but are not limited to (and a report to the school will be filled out):

1. Receiving a grade of zero or "F" for an exam or assignment
2. Receiving a grade of "F" for the course
3. Being withdrawn from the course
4. Being expelled from the college district



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

Attendance is taken every class with a sign in sheet. If you are more than 30 minutes late or leave more than 30 minutes early, you are counted absent even if you sign in. **The last day to withdraw Apr/06/2020.**

### Student Conduct

**Students who attend class the most typically achieve higher grades. Please be on time to class as late arrivers can be disruptive to those who showed up on time. Be considerate of other students learning needs.**

### Instructor's Course-Specific Information

Tests and Quizzes are in class on paper. You can keep all tests/quizzes except the final exam.

Homework is done online in Canvas using the many resources available of ConnectMath.

Any calculator is allowed for all work in the class but a TI-83 or 84 is preferred.

An actual textbook is not required. Free electronic textbook comes with ConnectMath.

Due dates for homework and reviews are when class starts on test days.

You cannot work on any homework or reviews after due date to improve your grade.

All past due work in CM can be "reviewed" in the gradebook tab after completed.

Pen or pencil can be used on quizzes and tests (but no red pens).

Scratch paper will be provided for quizzes and tests but you must have your own calculator.

No sharing calculators during quiz/testing and no cell phones either.

No books, no notes, and no help from others during quiz/tests. Do not help others either.

Some formulas are provided but everything else must be memorized.

No make up tests without a true emergency (must provide documentation)

In an emergency contact me by phone or email ASAP and make up must be done before next class

Quizzes can be made up if missed when absent, but they are a study tool if taken when scheduled

Attendance is taken every class and make sure you print (so I can read it) and sign (so I know it's you)

If you arrive more than 30 minutes late or leave more than 30 minutes early, you are counted absent.

You can leave class when you finish a quiz/test (no lectures are done after a quiz/test starts)

If you care about grades, make sure you work hard at the time you can. No extensions later.

No extra credit, no make up work, no replacement grades, no dropped tests, and no re-tests.

Tests are close to the reviews but also study your notes, homework, and the textbook.

You can show up anytime during office hours, no appointment necessary.

Don't be shy about asking questions, or emails about homework any time day or night.

Tests/quizzes are passed back the next class meeting.

Updated grades are provided after each test in Canvas.

First three tests are 3 chapters at a time and not cumulative with some multiple choice.

Final Exam is Cumulative and mostly multiple choice over all chapters.

When final exam is completed, you can check Canvas if you want to know score and final average.

Form a study group with other students in the class or find a study buddy.

## Electronic Devices

Students are encourage to bring a device/laptop during class to work on MyMathLab and use the electronic textbook. The use of electronic devices by students in the classroom is up to the discretion of the instructor. Any use of such devices for the purposes other than student learning is strictly prohibited unless authorized as an appropriate ADA accommodation from the ADA Counselor.

## 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<sup>3</sup>

The EGLS<sup>3</sup> (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<sup>3</sup> 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/ecls3-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](mailto: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	Ernest Lowery	NW Campus	713-718-5512	Katy Campus Building, Rm 112
Math Assoc. Chair	Mahmoud Basharat	NE Campus	713-718-2438	Codwell Hall Rm 105

### Developmental Math Courses

Chair of Dev. Math	Jack Hatton	SE Campus	713-718-2434	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	Adnan Ulhaque	SW Campus	713-718-5463	Stafford, Learning Hub, Room 208
Technical Support Specialist	Douglas Bump	SE Campus	713-718-7317	Angela Morales Building, Rm 101

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.

**Remember: There are No Make-up Tests, No Extra Credit, No HW Extensions, and No Dropped Tests.**