HCC | **HOUSTON COMMUNITY COLLEGE**

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

Math 1342: Elementary Statistical Methods| Online | 19735
Fall 2020 | 16 Weeks (8.24.2020-12.13.2020)
Online | Katy | TTH 9:30 a.m.-- 10:50 a.m.
3 Credit Hours | 48 hours per semester

Instructor Contact Information

Instructor: Sukhlal Ramharack   Office Phone: 713-718-5525
Office: Katy Rm 215A   Office Hours: By Appointment
HCC Email: sukhlal.ramharack@hccs.edu   Office Location: Katy Campus

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
My preferred method of contact is by e-mail: sukhlal.ramharack@hccs.edu When leaving me a message **please include in your e-mail, your class, days, time and section of concern.** 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

Statistics can be a very engaging and exciting subject. It is very relevant to everyday life, from looking at average income for certain jobs, examining election results, census data, life insurance information, medical information and collecting, describing, analyzing and interpreting data from various diseases, such as, COVID-19.

My Personal Welcome

Let me take a moment to welcome you to Statistics. I am absolutely thrilled that you have chosen to expand your mathematical horizon. Statistics is a difficult but exciting field. During the course we will try to examine the different ways data can be collected, depicted, analyzed, in order to provide answers to a multitude of questions. Statistics is a wonderful field and I am very happy to be part of your inquiry into this most exquisite of disciplines. I look forward to meeting all of you and I trust that we will have a great semester together.

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 and appreciation of Statistics. So please visit me or contact me by email whenever you have a question.

**Data is the sword
of the 21st century,
those who wield it well,
the Samurai.**
Jonathan Rosenberg
(former Google Inc. Senior Vice President)

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. You are expected to use canvas Daily, this is where you will find all your announcements that will be relevant to the course.
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

System Requirements needed for Class.

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.

Instructional Materials

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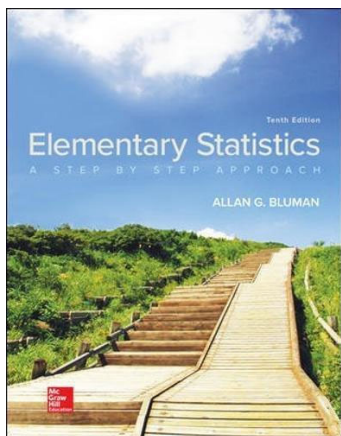
The textbook listed below is **required** for this course.
Elementary Statistics, A Step by Step Approach, 10th Edition, By Bluman, McGraw-Hill Education, ISBN: 978-1264094592

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.

Temporary Free Access to E-Book

For temporary free access to Connect Math and the online eBook, go to www.connectmath.com and register using the Connect Math **Course Code**: F9HG4-WELU9

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 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, Exams, and Activities

Instructional Method:

As an instructor, I want all my students to succeed in their endeavors. In order for one to succeed in this and any class two things will be expected of you (i) that you are prepared and (ii) that you are consistent in doing your homework. (i) Preparation requires that you have the relevant pre-requisite for the course. It also means that you attend class regularly you read and re-read as necessary the previous class material so that you are ready for the new material. I am always available to my students so if you have any questions please feel free to speak with me or e-mail me as necessary. (ii) Homework. In order to be successful in this course requires a level of commitment from you to do your home consistently. As the old adage goes "Math is not a

spectator sport." In order to be successful in math requires that you DO math. This may mean that you may need to work on your homework daily, if there is a concept that you do not understand, you go to (i) tutoring , (ii) you seek assistance from your fellow classmates, (iii) you go online to valid websites to get help with understanding or reinforcing certain concepts and (iv) seek your professor's assistance.

Assessments
Grading Policy:

90 – 100	**A**
80 – 89	**B**
70 – 79	**C**
60 – 69	**D**
Below 60	**F**

Evaluation:

Four Exams (15% each)	**60%**
Quizzes	**8%**
Final Exam	**20%**
Homework	**12%**
Total	**100%**

Final Grade = 0.6*Exam Avg + 0.2*Final Exam +Quizzes*.08 + 0.12*Homework

Tests:

Approximately 4 major exams and a **comprehensive** final will be given. Absence on a test date is severely discouraged! **There will be no make-up exam during the semester. If you miss an exam then you receive a 0 for that assessment**. ***NO exam will be "dropped" or replaced.***   The exams will definitely take place at the dates prescribed in the included class schedule at the scheduled exam times, so please plan your schedule accordingly. If for any reasons the exam dates need to be altered the professors reserves the right to make any such changes. The professor will then inform the students of the resulting changes.

Homework: Most homework will be completed online using www.connectmath.com

Computer Lab Assignments: Welcome to Elementary Statistics. To enroll in the homework system go to www.connectmath.com.

Course Code: F9HG4-WELU9

You will have to buy an access code in order to do the Homework. Homework will be closed prior to the final exam see below. Some problems will require the use of math software.

Due date for online assignments/Homework December 7th June, 2020 at 10:00 PM. There will be NO extensions.

The final exam can cover any material listed in the class content section of this syllabus even if the material is not covered in class. Grades will be posted online at the end of the semester when all grades have been finalized. It is HCCS policy that no grades will be discussed via telephone or email. If you wish to discuss your grade, please come by at the beginning of classes and I will be happy to go over your

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

For distance Ed (Online courses):
The Math Department requires that at least **45%** of your course grade will consist of scores from *at least two in-person proctored exams in the Testing Center*.

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

(Note: This is a tentative calendar and as such is subject to change, students will be notified of any such changes in Canvas).

Course:		Math 1342 Elementary Statistics			
Text:		Elementary Statistics, 10th ed			
Instructor:		Mr. Sukhlal Ramharack			
Time/Room		TuTh : 9:30 a.m. -- 10:50 a.m.			
E-mail:		sukhlal.ramharack@hccs.edu			

Week	Mon	Tue	Wed	Thu	Fri
1	8/24	8/25 1.1, 1.2	8/26	8/27 1.2, 1.3	8/28
2	8/31 **Labor Day Holidays** **(Offices closed - No Class)**	9/1 1.3, 1.4	9/2	9/3 1.5, 2.1	9/4
3	9/7	9/8 2.2 **Official Day**	9/9	9/10 2.3	9/11
4	9/14	9/15 3.1, 3.2	9/16	9/17 3.2 -- 3.4	9/18
5	9/21	9/22 4.1	9/23	9/24 4.2, 4.3 **Exam 1 Ch 1-3**	9/25
6	9/28	9/29 4.3, 4.4	9/30	10/1 4.4, 4.5	10/2
7	10/5	10/6 5.1, 5.2	10/7	10/8 5.2, 5.3	10/9

8	10/12	10/13	10/14	10/15	10/16
		5.3, 5.4		5.4, 6.1	
9	10/19	10/20	10/21	10/22	10/23
		6.1, 6.2		6.3, 6.4	
				Exam 2 Ch 4 & 5	
10	10/26	10/27	10/28	10/29	10/30
		7.1, 7.2		7.3, 7.4	
					W-day
11	11/2	11/3	11/4	11/5	11/6
		8.1, 8.2		8.3, 8.4	
12	11/9	11/10	11/11	11/12	11/13
		9.1, 9.2		9.2, 9.3	
				Exam 3 Ch 7 & 8	
13	11/16	11/17	11/18	11/19	11/20
		9.3, 9.4		9.4, 9.5	
14	11/23	11/24	11/25	11/26	11/27
		10.1		Thanksgiving Holidays	
		Exam 4 Ch 8 & 9			
15	11/30	12/1	12/2	12/3	12/4
		10.1, 10.2		10.2, 10.3	
16	12/7	12/8	12/9	12/10	12/11
		Final Exam @ 9:00 am			

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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

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 October 30th 2020

Student Conduct

Since our class is going to be conducted online. I would expected that you comport yourself with the proper etiquette, be respectful in your comments online, turn off your microphone so as to not disrupt the lectures. If you are not able to adhere to these basic of all requirements that you will no longer be a part of this class and you will be withdrawn by the professor.

Electronic Devices

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

EGLS³

The EGLS³ (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. EGLS³ 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.