



## Department of Mathematics COURSE SYLLABUS

**MATH 1324: Math for Bus. & Soc. Sci.**  
**Fall 2018 – CRN 20780 - F8B**

**CRN 20780 / Mo and We 8:00 – 10:50 AM / West Loop Center, Room 171**

INSTRUCTOR:	Houssam Kalajo
CONTACT INFORMATION:	<a href="mailto:Houssam.kalajo@hccs.edu">Houssam.kalajo@hccs.edu</a> web page <a href="http://learning.hccs.edu/faculty/houssam.kalajo">http://learning.hccs.edu/faculty/houssam.kalajo</a>
My Math Lab Course ID:	<b>Kalajo84482</b> <b>All homework assignments Due on or before 12/09/2018</b>

**Office location and hours:** West Loop Campus, Student Success Center F15, 11 - 1 pm, Mo/Wed and 11 – 12 PM, Th (By appointment).

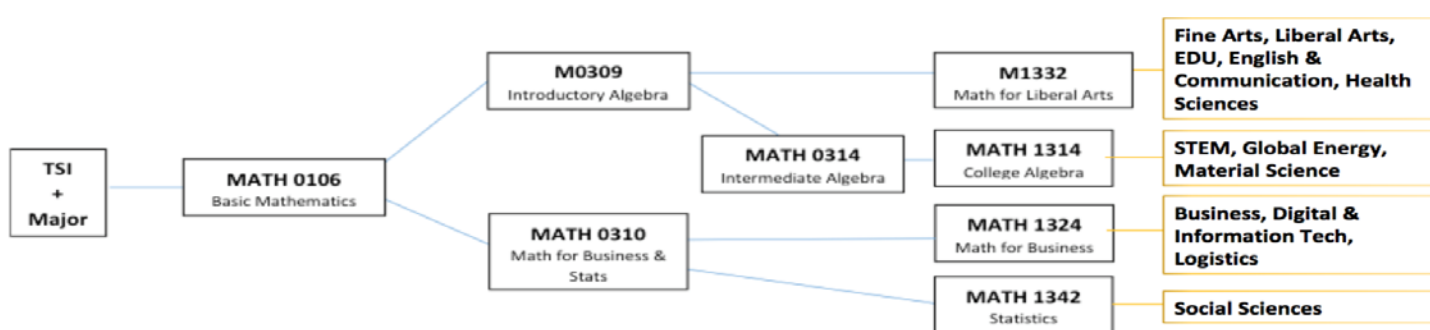
### Course Description

MATH 1324: Finite Mathematics with Applications. The application of common algebraic functions, including polynomial, exponential, logarithmic, and rational, to problems in business, economics, and the social sciences are addressed. The applications include mathematics of finance, including simple and compound interest and annuities; systems of linear equations; matrices; linear programming; and probability, including expected value.

**Prerequisites:** A grade of C or better in Math 0310 or a grade of C or better in MATH 0314 (or its equivalent) or meet TSI college-readiness standard for college-level mathematics.

**Co-requisite:** MATH 0310 is a co-requisite to MATH 1324. Since MATH 0310 is co-requisite with MATH 1324, withdrawing from MATH 0310 will necessitate withdrawal from MATH 1324 as well.

### HCC MATH PATHWAYS



**Course Intent:** This course is intended for students majoring in liberal arts and secondary education.

**Audience:** Students who are enrolled in the business area may take this course as an elective in order to obtain a broader background in the technique of linear programming and to further expand their mathematical knowledge.

### Course Student Learning Outcomes (SLO):

Upon successful completion of this course, students will:

1. Apply elementary functions, including linear, quadratic, polynomial, rational, logarithmic, and exponential functions to solving real-world problems.

2. Solve mathematics of finance problems, including the computation of interest, annuities, and amortization of loans.
3. Apply basic matrix operations, including linear programming methods, to solve application problems.
4. Demonstrate fundamental probability techniques and application of those techniques, including expected value, to solve problems.
5. Apply matrix skills and probability analyses to model applications to solve real-world problems.

### **Objectives:**

Students will:

1. Be able to graph systems of linear equations in two variables.
2. Be able to solve systems of linear equations using Gauss-Jordan elimination.
3. Be able to add, subtract, and multiply matrices.
4. Be able to find the inverse of a square matrix.
5. Find simple and compound interest.
6. Find the future value of a given annuity.
7. Find the monthly payment and the total interest for a given simple interest amortized loan.
8. Be able to graph systems of linear inequalities in two variables.
9. Use the graphical method for solving a linear programming problem.
10. Use the simplex method for solving standard maximization and standard minimization problems.
11. Be able to perform the basic set operations.
12. Be able to use the multiplication principle, permutations and combinations in counting arguments.
14. Calculate basic probabilities using classical methods.
15. Calculate conditional probabilities.
16. Use expected values in real-world applications.
17. Use the binomial distribution to model and analyze probability experiments.

**Critical Thinking Skills:** 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.

**Empirical and Quantitative Skills:** to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.

### **Instructional Methods**

As an instructor, I want my students to be successful. I feel that it is my responsibility to provide you with knowledge concerning the field of mathematics, modeling good analytical problem solving strategies, and organizing and monitoring the success of each student with homework that allows you to connect the information that you learn in this course to applications in other course work and life in the real world.

As a student wanting to learn about the field of mathematics, it is your responsibility to read the textbook, submit assignments on the due dates, study for the exams, and enjoy yourself while experiencing the real world of mathematics.

### **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:

### **Mathematics Homework Assignments:**

All homework assignments for this class must be completed online using MyMathLab. The MyMathLab Course ID to be used for registration purposes only, and the school zip code is 77477 or 77081. To register for MyMathLab and to access the homework, go to [www.coursecompass.com](http://www.coursecompass.com).

### **Note:**

- ❖ No extra work is given for extra credit.
- ❖ No extra work is given to "bring up my grade" or because this is the "last class I need to graduate".
- ❖ Be sure that your name in MyMathLab exactly matches your name on HCC Canvas.

**Exam Policy:** There will be four major examinations plus the final exam. Each exam is worth 100 points. Before each exam, please clear your desk of all material except pencils/pens, erasers, calculator, and scratch work. In addition, please do not share any material during an exam.

### Make-up Policy

Exams must be taken on the specified date. **No MAKE-UP** examinations will be given. The final examination grade will be substituted for one missed exam only, **regardless of the reason**. If a second test is missed, the score for that test is zero.

### Grading policy

Your course grade will be computed as follows:

3 exams	45% (each 15%)
Homework (MyMathLab)	20%
Final exam	35%

One lowest major exam out of four will be dropped.

$$\text{Final Average Score} = \frac{(\text{Sum of 3 highest exams out of 4})}{3} \times 0.45 + \text{HWK (MyMathLab)} \times 0.20 + \text{Final Exam} \times 0.35$$

Your final course grade is based on the following standard HCC scale.

Final Average	$90 \leq \text{Avg} \leq 100$	$80 \leq \text{Avg} < 90$	$70 \leq \text{Avg} < 80$	$60 \leq \text{Avg} < 70$	$\text{Avg} < 60$
Final Course Grade	A	B	C	D	F or FX

### Final Examination:

The final exam is comprehensive, consisting of 33 multiple choice problems and it must be taken by all students. The problems cover only the required material.

### Calculators:

A scientific or graphing calculator is allowed to be used ***on any examinations, including the final exam.***

### Exam Schedule:

Exam 1	Sections 2.1 - 2.2, 3.4, 3.6, 4.1, 4.3, and 4.4	TBA in class
Exam 2	Sections 6.1 – 6.5 and 7.1 – 7.3	TBA in class
Exam3	Sections 7.4 – 7.5 and 8.1 – 8.5	TBA in class
Exam 4	Sections 9.1 – 9.4 and 5.1 – 5.4	TBA in class
Final Exam	Comprehensive – All the above section	12/12/2018   8:00 AM – 10:00 AM

### Technical Support

If you should experience technical difficulties during the semester, these problems are not under the control of the instructor. Such technical problems should be directed to technical support. For MyMathLab, please contact MyMathLab tech support at <https://support.pearson.com> or call (855) 875-1797.

### Students with disabilities

HCC strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including 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/district/students/disability-services/>

### Ability Services Contact Information

Central College	713-718-6164	
Coleman College	713-718-7376	

Northeast College	713-718-8322	
Northwest College	713-718-5422	713-718-5408
Southeast College	713-718-7144	
Southwest College	713-718-5910	
Adaptive Equipment/Assistive Technology	713-718-6629	713-718-5604
Interpreting and CART services	713-718-6333	

### **HCC Policy Statement: 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  
 Houston, TX 77266-7517 or [Institutional.Equity@hccs.edu](mailto:Institutional.Equity@hccs.edu)  
 Phone number: (713) 718-8271

### **Basic Needs Security Statement**

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

### **Campus Carry – HCC**

At HCC the safety of our students, staff, and faculty is our first priority. As of August 1, 2017, Houston Community College is subject to the Campus Carry Law (SB11 2015). For more information, visit the HCC Campus Carry web page at <http://www.hccs.edu/district/departments/police/campus-carry/>

### **HCC Policy Statement: Academic Honesty**

A student who is academically dishonest is, by definition, not showing that the coursework has been learned, and that student is claiming an advantage not available to other students. The instructor is responsible for measuring each student's individual achievements and also for ensuring that all students compete on a level playing field. Thus, in our system, the instructor has teaching, grading, and enforcement roles. You are expected to be familiar with the University's Policy on Academic Honesty, found in the catalog. What that means is: If you are charged with an offense, pleading ignorance of the rules will not help you. Students are responsible for conducting themselves with honor and integrity in fulfilling course requirements. Penalties and/or disciplinary proceedings may be initiated by College System officials against a student accused of scholastic dishonesty. "Scholastic dishonesty": includes, but is not limited to, cheating on a test, plagiarism, and collusion.

Cheating on a test includes:

- Copying from another students' test paper;
- Using materials not authorized by the person giving the test;
- Collaborating with another student during a test without authorization;
- Knowingly using, buying, selling, stealing, transporting, or soliciting in whole or part the contents of a test that has not been administered;
- Bribing another person to obtain a test that is to be administered.

Plagiarism means the appropriation of another's work and the unacknowledged incorporation of that work in one's own written work offered for credit.

Collusion mean the unauthorized collaboration with another person in preparing written work offered for credit. Possible punishments for academic dishonesty may include a grade of 0 or F in the particular assignment, failure in the course, and/or recommendation for probation or dismissal from the College System. (See the Student Handbook)

## **HCC Policy Statements**

*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 attend all lecture and labs regularly. 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, for excessive tardiness or for 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 paper if you unavoidably miss a class. Class attendance equals class success.

## **HCC Course Withdrawal Policy**

If you feel that you cannot complete this course, you will need to withdraw from the course prior to the final date of withdrawal, you **MUST** contact a HCC counselor or your professor prior to withdrawing (dropping) the class for approval and this must be done **PRIOR** to the withdrawal deadline to receive a "W" on your transcript. \*\*Final withdrawal deadlines vary each semester and/or depending on class length, please visit the online registration calendars, HCC schedule of classes and catalog, any HCC Registration Office, or any HCC counselor to determine class withdrawal deadlines.

**Remember to allow a 24-hour response time when communicating via email and/or telephone with a professor and/or counselor. Do not submit a request to discuss withdrawal options less than a day before the deadline.** If you do not withdraw before the deadline, you will receive the grade that you are making in the class as your final grade. If you wish to drop the class, then it is your responsibility to do that before the final drop date. **Neither you nor your instructor will be able to perform the drop after the final drop date and I will not drop you for nonattendance.**

**The last day to withdraw from this course with a grade of W is November 27, 2018.**

**ATTENDANCE POLICY:** Attendance is compulsory and is checked during every class. When you have accumulated 12.5 %or 6 hours of absences, the instructor is obligated by law to drop you from the class. ***It is your responsibility to be sure that you are marked present before leaving the class.*** Students are expected to attend class regularly, and they are responsible for materials covered during their absences. Students can contact their friends or myself if available regarding it. The nature of the course is such that perfect attendance is essential for mastery of the course content. A missed class can never be duplicated.

**INSTRUCTIONS POLICY:** All instructions given in class must be followed strictly. No excuse shall be accepted if you do not follow or miss instructions. It is your responsibility to clarify the doubts immediately.

## **Repeat Course Fee**

The State of Texas encourages students to complete college without having to repeat failed classes. To increase student success, students who repeat the same course more than twice are required to pay extra tuition. The purpose of this extra tuition fee is to encourage students to pass their courses and to graduate. Effective fall 2006, HCC will charge a higher tuition rate to students registering the third or subsequent time for a course. If you are considering course withdrawal because you are not earning passing grades, confer with your instructor/counselor as early as possible about your study habits, reading and writing homework, test taking skills, attendance, course participation, and opportunities for tutoring or other assistance that might be available.

## **Classroom Behavior**

As your instructor and as a student in this class, it is our shared responsibility to develop and maintain a positive learning environment for everyone. Your instructor takes 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 asked to respect the learning needs of your classmates and assist your instructor achieve this critical goal.

## **Misuse of Electronic Devices in the Classroom**

The use of electronic devices by students in the classroom is up to the discretion of the instructor. Any use of such devices for purposes other than student learning is strictly prohibited unless authorized as an appropriate ADA accommodation from the ADA Counselor.

## **Personal Communication Device Policy**

All personal communication devices (any device with communication capabilities including but not limited to cell phones, blackberries, pagers, cameras, palmtop computers, lap tops, PDA's, radios, headsets, portable fax machines, recorders, organizers, databanks, and electronic dictionaries or translators) must be muted or turned off during class. Such activity during class time is deemed to be disruptive to the academic process. Personal communication devices are to not be on the student desk during examinations. Usage of such devices during exams is expressly prohibited during examinations and will be considered cheating (see academic honesty section above).

## **Instructor Requirements**

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 class activities, discussions, and lectures
- Provide a description of any special projects or assignments
- Inform students of policies such as attendance, withdrawal, tardiness and make up
- Provide the course outline and class calendar which will include a description of any special projects or assignments
- Arrange to meet with individual students before and after class as required

To be successful in this class, it is the student's responsibility to:

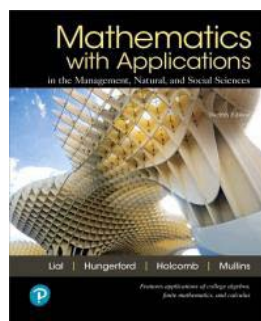
- Attend class and participate in class discussions and activities
- Read and comprehend the textbook
- Complete the required assignments and exams:
- Complete Chapter Exams, MyMathLab Homework, Final Exam
- Ask for help when there is a question or problem

Keep copies of all paperwork, including this syllabus, handouts and all assignments.

## **Instructional Materials**

### **Textbook:**

- Mathematics with Applications 12/e
- Lial | Hungerford | Holcomb | Mullins
- Textbook ISBN-13: **978-0135335215**
- Publisher: Pearson



Students will either need to purchase their textbook/access code bundle from the bookstore, OR they can purchase it online via the MyMathLab registration process. However, MyMathLab comes with an embedded electronic book; therefore, you may not need to purchase a physical textbook.

## **Course Outline**

### **APPROXIMATE TIME**

### **TEXT REFERENCE**

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#### **UNIT I Review (2 hours)**

1 hour	2.1 Graphs
1 hour	2.2 Equations of Lines

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#### **UNIT II Nonlinear Functions (12 hours)**

2 hours	3.4 Quadratic Functions and Applications
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2 hours	3.6 Rational Functions
2.5 hours	4.1 Exponential Functions
2.5 hours	4.3 Logarithmic Functions
3 hours	4.4 Logarithmic and Exponential Equations

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### **UNIT III      Systems of Linear Equations (8 hours)**

1.5 hours	6.1 Systems of Two Linear Equations in Two Variables
2 hours	6.2 Larger Systems of Linear Equations
2 hours	6.3 Applications of Systems of Linear Equations
1 hour	6.4 Basic Matrix Operations
1.5 hours	6.5 Matrix Products and Inverses

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### **UNIT IV      Linear Programming (8.5 hours)**

1 hour	7.1 Graphing Linear Inequalities in Two Variables
1.5 hours	7.2 Linear Programming: The Graphical Method
2 hours	7.3 Applications of Linear Programming
2 hours	7.4 The Simplex Method: Maximization
2 hours	7.5 Maximization Applications

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### **UNIT V      Sets and Probability (6 hours)**

1 hour	8.1 Sets
	8.2 Applications of Venn Diagrams and Contingency Tables
1.5 hours	8.3 Introduction to Probability
1.5 hours	8.4 Basic Concepts of Probability
2 hours	8.5 Conditional Probability and Independent Events

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### **UNIT VI      Counting, Probability Distributions, and Further Topics in Probability (6 hours)**

1.5 hours	9.1 Probability Distributions and Expected Value
1.5 hours	9.2 The Multiplication Principle, Permutations, and Combinations
1.5 hours	9.3 Applications of Counting
1.5 hours	9.4 Binomial Probability

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### **UNIT VII      Mathematics of Finance (5.5 hours)**

1 hour	5.1 Simple Interest and Discount
1 hour	5.2 Compound Interest
1.5 hours	5.3 Annuities, Future Value, and Sinking Funds
2 hours	5.4 Annuities, Present Value, and Amortization

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**FINAL GRADE OF FX:** Students who stop attending class and do not withdraw themselves prior to the withdrawal deadline may either be dropped by their professor for excessive absences or be assigned the final grade of "FX" at the end of the semester. Students who stop attending classes will receive a grade of "FX", compared to an earned grade of "F" which is due to poor performance. Logging into a DE course without active participation is seen as non-attending. Please note that HCC will not disperse financial aid funding for students who have never attended class. Students who receive financial aid but fail to attend class will be reported to the Department of Education and may have to pay back their aid. A grade of "FX" is treated exactly the same as a grade of "F" in terms of GPA, probation, suspension, and satisfactory academic progress.

### Student Course Reinstatement Policy:

Students have a responsibility to arrange payment for their classes when they register, either through cash, credit card, financial aid, or the installment plan. Faculty members have a responsibility to check their class rolls regularly, especially during the early weeks of a term, and reconcile the official class roll to ensure that no one is attending class whose name does not appear on it. Students who are dropped from their courses for nonpayment of tuition and fees who request reinstatement after the official date of record (OE Date) can be reinstated by making payment in full and paying an additional/ per course reinstatement fee. A student requesting reinstatement should present the registrar with a completed **Enrollment Authorization Form** with the signature of the instructor, department chair, or dean who should verify that the student has been attending class regularly. Students who are reinstated are responsible for all course policies and procedures, including attendance requirements.

### Resources:

The HCC Tutoring Centers provide free tutoring for individual subjects offered at specific times throughout the week on various campuses. There is no need to make an appointment. If you need a tutor, visit: [www.hccs.edu/findatutor](http://www.hccs.edu/findatutor) for times and locations. For more information about tutoring at HCC, visit [www.hccs.edu/district/students/tutoring](http://www.hccs.edu/district/students/tutoring).

Additional help is also available through Student Support Services. Students can get free assistance, 24 hours a day, 7 days a week, in Math, English and other subjects, at <https://hccs.upswing.io/>. Typically, posted questions are answered by an HCC tutor or faculty within 24 hours (usually under 6 hours). There are also several online math resources that you can find with an internet search. You may also find information on the Learning Web site accessible through your specific HCCS campus website.

### EGLS3 -- Evaluation for Greater Learning Student Survey System:

At Houston Community College, professors believe that thoughtful student feedback is necessary to improve teaching and learning. During a designated time, you will be asked to answer a short online survey of research-based questions related to instruction. The anonymous results of the survey will be made available to your professors and division chairs for continual improvement of instruction. Look for the survey as part of the Houston Community College Student System online near the end of the term. Visit [www.hccs.edu/EGLS3](http://www.hccs.edu/EGLS3) for more information.

### Administration 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	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	NE Campus	713-718-2434	Northline Building, Room 321
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.