

Division of Natural Sciences Astronomy Program http://learning.hccs.edu/programs/Astronomy

ASTR 1304: Solar System | Lecture | #13486

Spring 2020 | 16 Weeks (1/21/2020-5/17/2020) In-Person | Southeast-Felix Fraga 352 | MW 7:00 p.m.-8:20 p.m. 3 Credit Hours | 48 hours per semester

Instructor Contact Information

Instructor: Hannah Lange Southeast-Felix Fraga, #130C Office: HCC Email: hannah.lange@hccs.edu

Office Hours: Office Phone:

MW 4:00-5:00 p.m. **Office Location:** Felix Fraga Faculty Room 713-718-2800

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 your concerns and discuss course topics with you.

Instructor's Preferred Method of Contact

You may reach me at my email, hannah.lange@hccs.edu (preferably via Eagle Online Canvas). Please use your student HCCS.edu email for communication. I will only send correspondence to your student account so please check it regularly as you are responsible for content of messages. Students may access email via Canvas or student sign-ins. Please allow sufficient time for a response. I will respond to email messages on weekends.

What's Exciting About This Course

Astronomy is the study of the entire universe, including objects such as planets, stars and entire galaxies, as well as smaller objects and gas clouds. It studies how we describe the motion of the satellites and planets. It looks at how the galaxies, stars and planets were formed. It is amazing that the universe works in a way that we, as curious human beings, can describe, explain and even predict how phenomena occur.

The information in this course will enable you to better understand the cosmos and your place in the universe. Do you know your updated universal "address"? The recent research regarding a possible new, larger 9th planet (NOT Pluto)? The newest technologies being developed for space travel to Mars and beyond? What is the possibility of life on other

planets? Did you know that time travel is now theoretically and mathematically possible? This is exciting to me and hopefully to you as well!

My Personal Welcome

Welcome to Astronomy 1304 - I'm delighted that you have chosen this course! My passion is to know as much as I can about the universe and how it works, and I can hardly wait to pass that on to you. I will present these physical principles in the most interesting way I know, so that you can grasp the concepts and apply them now and hopefully throughout your life.

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 HCC email via <u>Eagle Online Canvas</u>. However, the best way to discuss issues is in person, and I'm available during posted office hours to tackle any questions you might have. My goal is for you to walk out of the course with a better understanding of yourself and the universe around you. Please visit or contact me by email whenever you have a question.

Prerequisites and/or Co-Requisites

Must be placed into GUST 0341 (or higher) in reading and placed into MATH 0308 (or higher). If you have enrolled in this course having satisfied these prerequisites, you have a higher chance of success than students who have not done so. Please carefully read and consider the repeater policy in the <u>HCCS Student Handbook</u>.

Canvas Learning Management System

This course will use <u>Eagle Online Canvas</u> to post the Syllabus, Lecture PowerPoint files, inclass activities, assignments, pre- and post-test quizzes, and exam study guides. Any announcements, updates on HCC class star parties, opportunities for extra credit, supplemental material and grades will also be posted on Canvas. All assignments and exam grades are point-for-point.

****NOTE:** Updated schedule and messages for the class will be posted under "Announcements" in Canvas, so check online often.**

The Syllabus is also available on the Learning Web. To use the *LEARNING WEB*, go to <u>http://learning.hccs.edu</u>, type '*Lange*' in "Find a faculty member', and click on 'Search'.

HCCS Open Lab and Library locations may be used to access the Internet and Canvas, or you may use your own computer. **USE <u>FIREFOX</u> OR <u>CHROME</u> 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: <u>http://www.hccs.edu.online/</u>.

Scoring Rubrics

All assignments and exams are point-for-point. See Grading Scale below for final grade computation.

Homework sets, quizzes and exams will consist of show-work questions. Marks are usually reserved for:

- Making a sketch
- Writing the equations used
- Unit conversions, if required
- Calculation of intermediate values, and
- Correct units in the final answer.

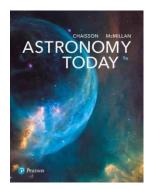
You must write the equation/s that you are using before plugging in the numbers. Your answer must not contain too many or too few significant figures. Use four to five significant figures in the intermediate calculations, and round off the final result to three significant figures. Do not round off during the intermediate calculations. You may lose points if you write 5 or more significant figures in the final answer, unless the question requires it. You may also lose points if your final answer is more than a few percent off from the correct answer, so do not round the final answer to less than three significant figures.

The points assigned to each question is specified on each Assignment. <u>Just giving the answer</u> without showing the work usually earns no points.

Instructional Materials

Textbook Information

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



Astronomy Today, 9th Edition, Eric Chaisson © 2018 Pearson Publishing ISBN 13: 978-0-13-456621-4

This book is a rental found in the <u>HCC Bookstore</u> or online via amazon.com.

Other Instructional Resources

Online Sources

Any online sources will be provided in assignments and posted on Canvas.

Tutoring

HCC provides free, confidential, and convenient academic support 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. Tutoring may be both online and/or in-person on most campuses. Visit the <u>HCC Tutoring Services</u> 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, including the Felix Fraga campus, third floor. 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 peerassisted 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 <u>http://www.hccs.edu/resources-for/current-students/supplemental-instruction/</u>.

Course Overview for ASTR 1304

An introduction to present theories about the structure and evolution of the solar system, compared to other models and theories since antiquity. A survey of the Sun, planets, moons, rings, asteroids, comets and debris in our solar system. The possibility of life in the Universe. Laboratory topics include planetary, lunar and solar observations with telescopes and/or the naked eye; measurements of the gravitational constant, gravitational acceleration and the speed of light; analysis of spectra and spacecraft images; and impact cratering simulations.

Core Curriculum Objectives (CCOs)

ASTR 1304 satisfies the Physical Science requirement in the HCCS core curriculum. The HCCS Astronomy Discipline Committee has specified that the course address the following core objectives:

- **Critical Thinking**: Students will demonstrate the ability to engage in inquiry and analysis, evaluation and synthesis of information, and creative thinking by demonstrating problem solving skills on homework and exams.
- **Communication Skills**: Students will demonstrate effective development, interpretation and expression of ideas through written, oral, and visual communication.
- **Quantitative and Empirical Literacy**: Students will demonstrate the ability to draw

conclusions based on the systematic analysis of topics using observation, experiment, and/or numerical skills by completing textbook reading assignments, completing assignments, and answering questions on quizzes and/or exams.

Program Student Learning Outcomes (PSLOs)

- 1. To provide the student a basic and practical understanding of astronomy (basic qualitative and quantitative concepts, and systematic problem-solving strategies) and recognize its relevance in our daily lives.
- 2. To prepare students to meet with success in astronomy and other science courses when they transfer to four-year universities.
- 3. To prepare students for professional programs requiring astronomy.
- 4. Demonstrate understanding of the fundamental concepts of Astronomy.

Demonstrate understanding of the fundamental principles underlying physics and astronomy including concepts and methods of inquiry at an appropriate level. Topics include, but are not limited to, the Scientific Method, Newtonian Mechanics, Electricity and Magnetism, Thermodynamics, Mechanical and Electromagnetic Waves, Solar Astronomy and Stars and Galaxies.

5. Solve conceptual and numerical problems in Astronomy.

Solve conceptual and numerical problems through the recognition of the type of problem at hand, analysis of relevant information, proper application of concepts and techniques applying mathematical tools at an appropriate level. Students should demonstrate improvement in problem solving skills as they progress through courses in the program.

6. Demonstrate appropriate laboratory skills.

Demonstrate appropriate laboratory skills including proper use of basic measuring devices, interpretation of laboratory directions and analysis of data obtained using appropriate tools, such as graphical/tabular methods using computers.

Course Student Learning Outcomes (CSLOs)

Upon completion of ASTR 1304, the student will be able to:

- 1. Develop an appreciation for the nature of science and the scientific method.
- 2. Demonstrate an understanding of the modern theories about the origins, structure and evolution of the solar system.
- 3. Understand properties of planets, and their moons.
- 4. Apply the scientific method to the study of the universe, and in varying degrees, to the student's own interest and particular field of work or study.

Learning Objectives

Upon completion of this course the student should be able to:

- 1.1 Compare and contrast the size of the planet Earth to the size of the solar system and the Milky Way Galaxy.
- 1.2 Distinguish among astronomical unit, light year and parsec.
- 1.3 Name a few of the constellations, and relate brightness of stars to their size and distance.
- 1.4 Describe the cycles of the moon and state the conditions for solar and lunar eclipses.
- 2.1 Explain the difference between heliocentric and geocentric models of the universe.
- 3.1 Demonstrate knowledge of the basic laws of physics that pertain to the study of the bodies of the solar system.
- 3.2 Compare and contrast the characteristics of the terrestrial planets, and demonstrate understanding of the causes of their similarities and differences.
- 3.3 Compare and contrast the characteristics of the jovian planets, and demonstrate understanding of the causes of their similarities and differences.
- 3.4 List the differences between the terrestrial and jovian planets, and of how those differences came to be.
- 3.5 Discuss the properties of the lesser bodies of the solar system.
- 4.1 Describe the current best scientific explanation of the origin of the solar system.

Student Success

Expect to spend <u>at least twice as many hours per week</u> outside of class as you do 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 chapter before coming to class
- Attending class in person
- Completing assignments
- Solving as many end-of-chapter problems as possible
- Participating in Lab/class activities.

There is no shortcut for success in this course; it requires studying the material and solving problems using the course objectives as your 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 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 the class in person.
- 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 <u>HCCS Student</u> <u>Handbook</u>.

Assignments, Exams, and Activities

Homework Assignments

Problems are assigned from the text after every chapter is covered. Students are strongly advised to attempt all these selected problems and other problems from the text. In general, students who fail to do these assigned problems will not do well in the course. *Homework assignments are to be turned in at the start of class on the day they are due to be counted for full credit.* **Late** homework is accepted for **half credit** (until the date of the final class session before the final exam). Homework can be done collaboratively but every student is responsible for submitting their own solutions. <u>All work necessary in obtaining a solution should be shown in order to receive full credit</u>.

Exams

There will be four (4) exams consisting of 22-23 multiple-choice questions and 2-3 shortanswer essay questions, for a total of 25 questions on each exam. Each question and exam total will be point-for-point toward a student's final course grade. Dates of each exam are listed in the syllabus and any changes will be announced on Canvas; exams will be held during regularly-scheduled class time, with the Final Exam as scheduled by HCCS (NO EXCEPTIONS ALLOWED). During exams, all book bags, satchels, cellphones, notebooks, laptops etc. will be placed under the desk. Visits to the restroom will be limited. All exams are <u>closed</u> book and notes. An equation sheet and/or formulas will be provided for each exam. The purpose of the exam is to test knowledge of the principles and theories presented during class. Exam problems will be similar (not the same!) as examples worked during class or problems from the homework.

There are no make-up exams, therefore, make every effort to take exams on their scheduled date. If an exam is missed, the grade in the final exam will replace it, for at most one exam.

In-Class Activities

Please participate in activities during class, such as discussions, group work, and star parties.

Final Exam

All students are required to take a comprehensive final exam. Students who are absent from the final exam without a valid and compelling reason will receive a failing course grade (see "*Incomplete Policy*", below). The final exam will be comprehensive, i.e. includes all chapters done in class.

Grading Formula

The final grade is based on the total possible score of 100%, which the student can accumulate from all exams, class work, homework, and the final exam.

Grading Scale

Three Exams (25 points each):		75 points
Homework:		Point-for-point
Final Exam (mandatory):		25 points
TOTAL:		Total points earned divided by total points
		possible = total percentage out of 100%
Final Grading Scale:	A = 90 - 100%	
	B = 80 - 89%	
	C = 70 - 79%	

F < 60

D = 60 - 69%

Incomplete Policy

A student who has completed at least 85% of the work in the class, but misses the final exam due to unavoidable circumstances may receive a grade of "Incomplete" ("I"). The student must provide proof of these circumstances before or within 24 hours of the exam. Such students would have to take the final exam in the following semester.

HCC Grading Scale can be found on this site under Academic Information:

http://www.hccs.edu/resources-for/current-students/student-handbook

Course Calendar

<u>Week 1</u> -W1/22	Introduction/Expectations
	Chapter 1, Part 1 – Charting the Heavens/Foundations of Astronomy
	Assignment 1: Mind Map
<u>Week 2</u> -M1/27	Planet Walk Activity
W11 (20	Assignment 2: Basics of Astronomy, Distances & Universal Address
W1/29	Chapter 1, Part 2 – Charting the Heavens/Constellations & Seasons
Maal 2 2/2	Assignment 3: Constellations & Seasons
Week 3-2/3	Chapter 1, Part 3 – Moon Phases
2/5	Assignment 4: Moon Phases
Week 4-2/10	Chapter 2 – Copernican Revolution
2/12	Assignment 5: Kepler's Laws of Planetary Motion
Week 5-2/17	**NO CLASS - PRESIDENT'S DAY HOLIDAY**
2/19	Chapters 3 & 4 – Radiation & Spectroscopy
	Exam 1 Review – Chapters 1-4 Exam I
Week 6-2/24	
2/26 <u>Week 7</u> -3/2	Chapter 5: Light & Telescopes Assignment 6: Observations/HCC Star Party*, 7:30-8:50 p.m.
<u>WEEK /</u> -3/2	(If cloudy: Chapter 6 – The Solar System)
3/4	Chapter 6 – The Solar System (OR Alternate HCC Star Party*)
Week 8-3/9	Chapter 7 – The Earth
<u>3/11</u>	Assignment 7: The Earth & Origins of the Solar System
Week 9-3/16	**NO CLASSES – SPRING BREAK**
3/18	
	Chapter 8 – The Moon & Mercury
	Chapters 9 & 10 – Venus & Mars
-, -	Exam 2 Review – Chapters 5-10
Week 11-3/30	
	Chapter 11 - Jupiter
	Chapter 12 - Saturn
4/8	Chapter 13 – Uranus & Neptune
<u>Week 13</u> -4/13	Chapter 14 – Solar System Debris, Kuiper Belt & Oort Cloud
4/15	Exam 2 Review – Chapters 11-14
	Assignment 8: Terrestrial vs. Jovian Planets (In class/Group work)
<u>Week 14</u> -4/20	
	6-8 pm, Astronomy Movie (Extra Credit = optional)
	Chapter 15 & 16 – Exoplanets & The Sun
	Chapter 26 – Cosmology: Big Bang & Fate of Universe
Week 16-5/4	
5/6	
	Review Video: "Journey to the Stars"
	CLASS Monday, May 11, 2020 – Wed. 5/6/20 is the final class***
	*** <mark>Wednesday, May 13, 2020, 7:30 p.m.</mark> *** (NO EXCEPTIONS)
	: <u>https://www.hccs.edu/student-experience/events-calendar/#/?i=1</u> , "Final Exam
Schedule" tab.	

*NOTE: This syllabus is subject to change to incorporate HCC Star Parties due to bad weather or other unforeseeable circumstances. Check for updates weekly with instructor and announcements online via Canvas.

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 announcements on Canvas, of any such changes.

Instructor's Practices and Procedures

Missed Assignments

Homework assignments are to be turned in at the start of class on the day they are due to be counted for full credit. Late homework is accepted for half credit (until the date of the final class session before the final exam).

Academic Integrity

Scholastic Dishonesty will result in a referral to the Dean of Student Services. See the link below for details. You are expected to be familiar with the College'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.

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

Attendance Procedures

The HCCS attendance policy states: "Students are expected to attend classes regularly. Students are responsible for materials covered during their absences, and it is the student's responsibility to consult with instructors for make-up assignments. *Although it is the responsibility of the student to drop a course for non-attendance, the instructor has full authority to drop a student for excessive absences. A student may be dropped from a course for excessive absences after the student has accumulated absences in excess of 12.5% of the hours of instruction (including lecture and laboratory time)."*

Note that for this course, **FIVE classes missed would exceed the 12.5% limit**. If circumstances significantly prevent you from attending classes, please inform me. I realize that sometimes outside circumstances can interfere with school, and I will try to be as accommodating as possible, but please be aware of the attendance policy.

For Spring 2020, the last date to withdraw from the course is **Monday April 6, 2020**. I urge any student who is contemplating withdrawing from the class to see me first! You may be doing better than you think. Either way, I want to be accessible and supportive. I do not believe in classes that "weed out" students, and I consider you to be much more than just a name or number! Note my email address above; if you need assistance, I'm here to help.

Students desiring to withdraw from a class must do so by the above withdrawal date by filling out a withdrawal form at the registrar's office. After this date, instructors can no longer enter a grade of "W" for the course for any reason.

Student Conduct

Students are expected to maintain cordial and professional conduct as would be expected of an academic environment and as laid out in the Student Handbook. Please be considerate in your correspondence with the instructor and/or any classmates as well as in any in-person interaction.

Please make every effort to arrive and leave class on time so as to cause little to no disruption, as well as to avoid missing important class information and/or assignments.

Academic integrity is also considered to be a part of appropriate conduct.

Every student as well as the professor has the right to work in a healthy learning environment based on mutual respect and adherence to rules. Conduct unbecoming of such an environment will not be tolerated.

Instructor's Course – Specific Information

All grades will be posted online via Canvas. <u>Check with instructor if you do not see a grade</u>.

Electronic Devices

The use of electronic devices (cell phones, laptops, etc.) 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. If an instructor perceives such use as disruptive and/or inappropriate, the instructor has the right to terminate such use. If the behavior continues, the student may be subject to disciplinary action to include removal from the classroom or referral to the dean of student services.

Cell phone or electronic device use in class is NOT PERMITTED, particularly during testing. It is understandable that a need arises to tend to personal or urgent matters, but that should not be habitual nor disruptive. A student may excuse themselves from class to tend to a pressing matter. However, cell phone use is otherwise not permitted in class.

No communication or photographs may be taken during class either, of persons or course material (i.e. exams, keys, quizzes, etc.) using a device, and no testing material may be removed from the class at any time.

If students choose to use laptops or tablets (or other electronic device with Wi-Fi, cellular or communication capabilities including cell phones and watches), they should be for classroom related purposes only and during times permitted.

Cell phones are not calculators and will not be permitted to be used as a calculator.

Astronomy Program Information

Please visit the Astronomy Program page on the HCCS website for information regarding degree offerings, requirements, employment prospects and more:

https://www.hccs.edu/programs/areas-of-study/science-technology-engineering---math/astronomy/.

HCC Policies

Here's the link to the HCC Student Handbook <u>http://www.hccs.edu/resources-for/current-students/student-handbook/</u>. 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
- Health Awareness
- Incomplete Grades
- International Student Services
- Libraries/Bookstore
- Police Services & Campus Safety
- Student Life at HCC
- Student Rights and Responsibilities
- Student Services
- Testing
- Transfer Planning
- Veteran Services

EGLS³

The EGLS³ (<u>Evaluation for Greater Learning Student Survey System</u>) 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/egsl3-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 HCCS email system to protect your privacy. If you have not activated your HCCS student email account, you can go to <u>HCC Eagle ID</u> and activate it now. You may also use <u>Canvas Inbox</u> to communicate as it is linked to the HCCS email system directly.

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 doing so.

This will enable HCC to provide any resources that HCC may possess.

Office of Institutional Equity

Use the link provided to access the HCC Office of Institutional Equity, Inclusion, and Engagement: <u>http://www.hccs.edu/departments/institutional-equity/</u>.

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 mental health, chronic or temporary medical conditions), please meet with a campus Abilities Counselor 30 days before date of first class 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 <u>Institutional.Equity@hccs.edu</u> http://www.hccs.edu/departments/institutionale-guity/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/studentcomplaints/speak-with-the-dean-of-students/

Department Chair Contact Information

Departmental Chair: Dr. Kumela Tafa, kumela.tafa@hccs.edu, 713-718-5569

Department Chair's Secretary: Ms. Nettie Muhammad, <u>nettie.muhammad@hccs.edu</u>, 713-718-6050.