HCC | HOUSTON COMMUNITY COLLEGE

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

Math 2413: Calculus I| Lecture | #19662
Spring 2021 | 16 Weeks (1.20.2021-5.16.2021)
Online-on-schedule (WS) MW 12 – 1:50 PM
4 Credit Hours | 64 hours per semester

Instructor Contact Information

Instructor:	Domingo Litong	Office Phone:	713-718-5473
Office:	Katy Campus Rm 359H	Office Hours:	MW 2-3:30 TR 10:30-11:30am
HCC Email:	domingo.litong@hccs.edu	Office Location:	Canvas Cisco Webex

Please feel free to contact me about any problems that you have in this course. Your performance in this class is very important to me. Let us discuss what will make you succeed in this course and do concrete steps to achieve it. Office hours are by appointment on a first come, first served basis.

Instructor's Preferred Method of Contact
domingo.litong@hccs.edu (preferred); 713 718 5473 phone

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

The goal is for you to be able to do math on your own. You will own your solutions and not just depend on examples or solution manual. You will become independent in your thinking. You will become creative in solving problems.

My Personal Welcome

Welcome to the class! Learning math is doing math. We'll look at the theorems, axioms, properties, and definitions that lay the foundation of the course. We'll work out problems that should solidify our grasp of the concepts and show the practical applications of those concepts. For every section we will cover in this class, there are carefully chosen exercises for you to practice on in the HW sets, and this is when your own learning really takes shape.

I emphasize the importance of doing homework. Though I try to include different problems for each section, it is not possible to exhaust all types of situations. You must discover some of the ways yourself, and this is when you learn to think independently, making the resolutions to those problems your own. I guarantee that your moments of 'Eureka!' will be just as exhilarating as overcoming a seemingly impossible obstacle.

I understand that there will always be some obnoxious problems, and these types of problems are the ones that will teach you and will make you crave for more. When that moment arrives, your journey has begun, and I would have achieved my goal as your teacher. You will then look with a different eye those mathematicians of long ago who have prepared the world for us at this stage.

Prerequisites and/or Co-Requisites

Prerequisites: Math 2412: Pass with a "C" or better, or consent of the Department Chair. 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 HCCS Student Handbook.

Canvas Learning Management System

This section of MATH 2413 will use Canvas (https://eagleonline.hccs.edu) to supplement in-class assignments, exams, and activities. Class attendance is checked each time you attend the virtual class via Webex. All classwork is done online using WebAssign. Your lectures and exam reviews are in the Modules. You may access your grades in Canvas.

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

HCC Online Information and Policies
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

Instructional Materials

Textbook Information
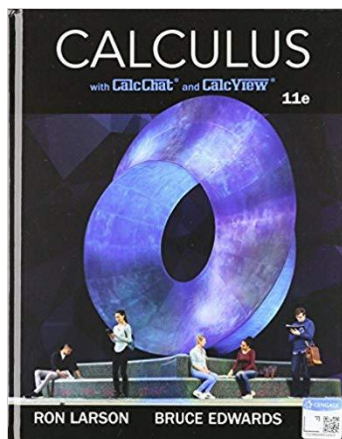
The textbook listed below is **required** for this course.
Textbook: Calculus, 11th Edition, by Ron Larson & Bruce H. Edwards, ISBN-13: 978-1337275347

Textbook Options for: Calculus, 11th Edition, by Ron Larson & Bruce H. Edwards
Loose-leaf Textbook + WebAssign Multi-Term Printed Access Card: Edwards ISBN-13: 978-1337604741
Hardbound Textbook + WebAssign Multi-Term Printed Access Card: Edwards ISBN-13: 978-1337604758
Hardbound Textbook: ISBN-13: 978-1337275347
WebAssign Multi-Term Printed Access Card: ISBN-13: 978-1285858265

Temporary Free Access to E-Book

To register in WebAssign, see this video:
https://play.vidyard.com/bM35vuk2ftNDTWbb18yURE

You may avail of temporary 14-day free access to online homework and the online eBook when you register in WebAssign.

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 a freshman level course that provides the background in mathematics for science and engineering students, and or further study in mathematics and its application. It is an integrated study of differential calculus with analytic geometry, which focusses on basic algebraic and transcendental functions. It is transferable as math credit to other disciplines.

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 2413, the student will be able to:
1. Develop solutions for tangent and area problems using the concepts of limits, derivatives, and integrals.
2. Draw graphs of algebraic and transcendental functions considering limits, continuity, and differentiability at a point.
3. Determine whether a function is continuous and/or differentiable at a point using limits.
4. Use differentiation rules to differentiate algebraic and transcendental functions.
5. Identify appropriate calculus concepts and techniques to provide mathematical models of real-world situations and determine solutions to applied problems.
6. Evaluate definite integrals using the Fundamental Theorem of Calculus.
7. Articulate the relationship between derivatives and integrals using the Fundamental Theorem Calculus.

Learning Objectives

Upon completion of this course the student will demonstrate
1. knowledge of limits by:
    (a) computing limits at a point and at infinity analytically,
    (b) applying the definition of continuity,
    (c) determining where a function is continuous or discontinuous,
2. knowledge of differentiation by:
    (a) finding the derivative of a function using the limit definition,
    (b) finding the equation of the tangent line to a curve at a point,
    (c) finding the rate of change of a function,
    (d) finding derivatives of polynomial, trigonometric, using differentiation rules,
    (e) finding derivatives using the product, quotient and chain rules,
    (f) implicitly differentiating equations,
    (g) computing higher order derivatives,
    (h) finding the intervals on which a function increases or decreases,
    (i) determining maximum and minimum points of a function,
    (j) finding the intervals on which a function is concave up or concave down
    (k) determining points of inflection of a function
    (l) using the first and second derivative tests to find relative extrema,
    (m) applying Rolle's theorem and the Mean Value theorem,
    (n) solving 'real world' optimization problems,
    (o) solving 'real world' problems involving related rates,
3. knowledge of integration by:
    (a) finding antiderivatives involving polynomial and trigonometric functions,
    (b) evaluating a definite integral using Riemann sums,
    (c) computing the average value of a function over an interval,
    (d) computing definite integrals using the Fundamental Theorem of Calculus,
    (e) solving applied problems using definite integrals,
    (f) finding indefinite integrals with a change of variables,
    (g) finding the area or regions under and between curves
4. knowledge of transcendental functions by:
    (a) finding derivatives of the natural logarithmic function
    (b) finding derivatives of exponential functions
    (b) finding antiderivatives which result in natural logarithmic and exponential
    functions
5. knowledge of inverse functions

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

All exams in class are worth 25% of your overall course grade.

There are three (3) major exams and a comprehensive final exam. All the exams are each worth 100 points. Actual graded exams are done in CANVAS using Respondus Lockdown Browser with monitor.

Doing homework, where feedback is instant, serves as a daily check-up and must be done regularly to monitor one's progress. Homework is due BEFORE each scheduled exam. Overall HW grade for the semester may replace one of the three major exams; the comprehensive final exam always counts.

There is NO MAKE UP for missed exams. There are NO formula sheets and NO calculators during the exams. See the calculator policy at the end of the syllabus. Lecture videos provided by the publisher are found under the Resources tab in WebAssign.

Final Exam

All students will be required to take a cumulative Final.

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 2413 **Final Exam Study Guide** and the **dates** for the Math Days review sessions are located at:
https://cofinite.com/MathDays/Math2413.php

Grading Formula

[(Best 3 grades of Exam 1, 2, 3, and Homework) + Finals] / 4

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

(Dates are subject to change)

Week	Dates	Topic/What's due
1		Syllabus Sec 1.2, 1.3, 1.4
2		Sec 1.5, 2.1, 2.2
3		Sec 2.3, 2.4
4		Sec 2.5, 2.6
5	Feb 17	Sec 3.1, 3.2, Exam 1
6		Sec 3.3, 3.4, 3.5
7		Sec 3.6, 3.7
8		Sec 3.8, 3.9
9	Mar 24	Sec 4.1, 4.2, Exam 2
10	Apr 6	Sec 4.3, 4.4 Last Day to Withdraw
11		Sec 4.5, 5.1
12		Sec 5.2, 5.3
13		Sec 5.4
14		HW Completion
15	May 3	Review for Finals, Exam 3
16	May 12	Final Exam

Syllabus Modifications

I reserve the right to modify the syllabus at any time during the semester and will promptly notify you in writing, typically by e-mail, of any such changes.

Instructor's Practices and Procedures

Missed Assignments

There is NO MAKE UP for missed exams. Any missed exam is replaced by the overall HW grade.

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/
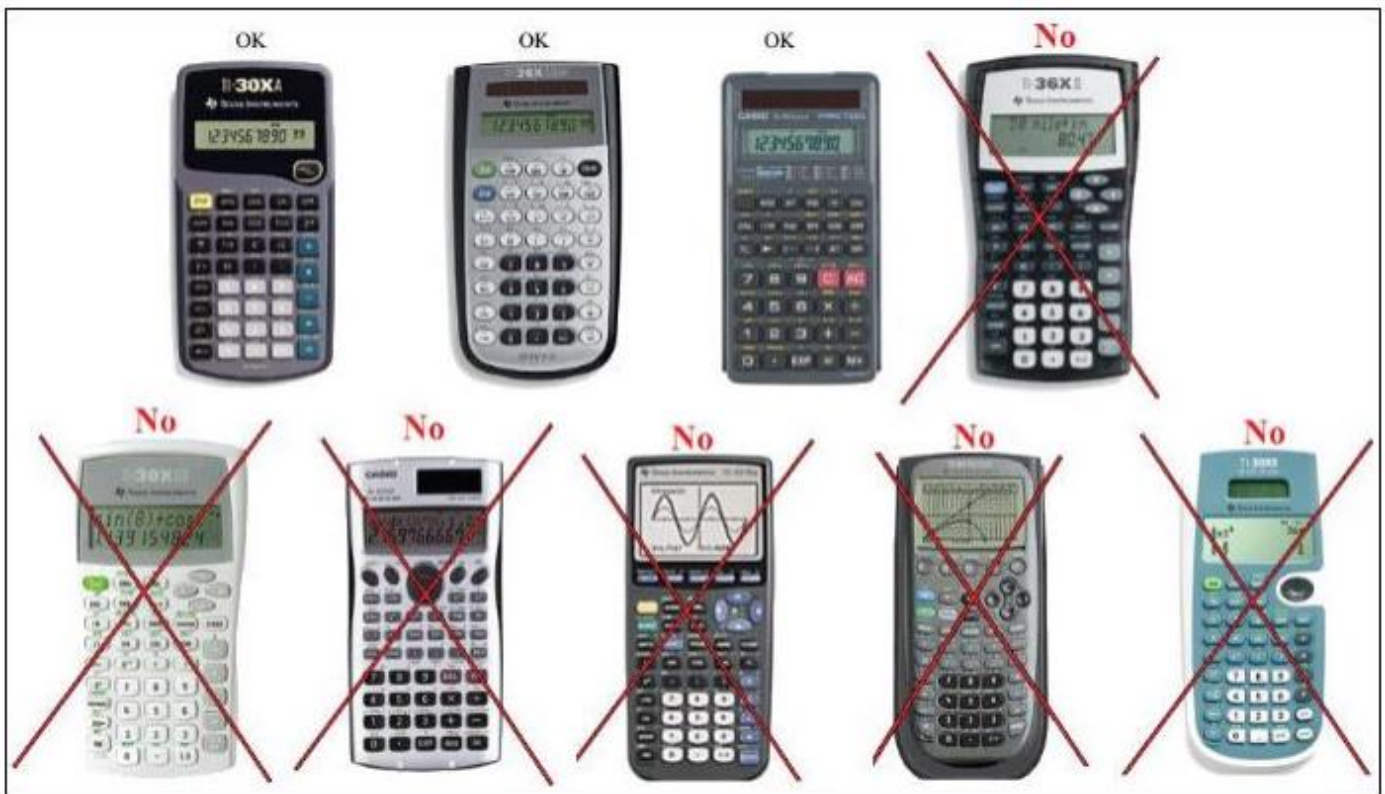
Attendance Procedures

Attendance is checked when you attend virtual class via Cisco Webex in CANVAS. **The last day to withdraw is on April 6, 2021.**

Student Conduct

As college students, I expect you to behave like responsible adults. As with on-campus classes, all students in HCC Distance Education courses are required to follow all HCC Policies & Procedures, the Student Code of Conduct, the Student Handbook, and relevant sections of the Texas Education Code when interacting and communicating in a virtual classroom with me and fellow students. Students who violate these policies and guidelines will be subject to disciplinary action as such violation may warrant.

Electronic Devices

ANY scientific, graphing calculator may be used to do and understand homework. For the FINAL exam, only scientific, stand-alone, non-graphing calculator is allowed. A calculator that can find derivatives and integrals is strictly prohibited during graded exams (see figure below). You need to know how to graph by hand and memorize EXACT values of trig functions of the special angles 30º , 45º , 60º, and quadrantal angles 0º, 90º, 180º, and 270º.

Mathematics Program Information

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

HCC Policies

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

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

EGLS[3]

The EGLS[3] (Evaluation for Greater Learning Student Survey System) will be available for most courses near the end of the term until finals start. This brief survey will give invaluable information to your faculty about their teaching. Results are anonymous and will be available to faculty and division chairs after the end of the term. EGLS[3] surveys are only available for the Fall and Spring semesters. –EGLS3 surveys are not offered during the Summer semester due to logistical constraints.
http://www.hccs.edu/resources-for/current-students/egls3-evaluate-your-professors/

Campus Carry Link

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

HCC Email Policy

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

Housing and Food Assistance for Students

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

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

Office of Institutional Equity

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

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

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

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

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

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

Department Chair Contact Information

College - Level Math Courses

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

Developmental Math Courses

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

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