Mathematics
Katy Campus
Math 2414: Calculus II

CRN 13737 – Fall 2018

MW 8:00 p.m. – 9:50 p.m. Rm 215 (Katy Campus)
4 hour lecture course / 64 hours per semester/ 16 of weeks
Textbook: Calculus, 11th Edition, by Ron Larson & Bruce H. Edwards
ISBN-13: 978-1337275347

Instructor: Sukhlal Ramharack

Instructor Contact Information:
Email : sukhlal.ramharack@hccs.edu
Office : Room 215A Katy Campus
Office Number : 713 – 718 - 5525

Office hours: MW : 12:00 p.m. – 12:30 p.m. & 5:30 p.m. – 6:00 p.m. : TuTh 2:00 p.m. – 3:30 p.m.

Course Description
Math 2414: Calculus II. Integral calculus including differentiation and integration of transcendental functions; techniques of integration; applications of integration; sequences and series; improper integrals. Infinite series, Taylor series, plane curves; parametric equations and polar coordinates.

Prerequisites
MATH 2413:A grade of a **C** or better.

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

Course Goal
This course provides a detailed study of the logarithmic, exponential, and other transcendental functions, integration techniques with applications, L'Hopital's rule, an introduction to infinite series and power series, as well as Taylor polynomials and approximations, plane curves, parametric equations, and polar coordinates.

Course Student Learning Outcomes (SLO):
1. Compute derivatives and antiderivatives of transcendental functions.
2. Use the concepts of definite integrals to solve problems involving area, volume, work, and other physical applications.
3. Use substitution, integration by parts, trigonometric substitution, partial fractions, and tables of anti-derivatives to evaluate definite and indefinite integrals.
4. Define an improper integral.
5. Apply the concepts of limits, convergence, and divergence to evaluate some classes of improper integrals.
6. Demonstrate the correct use of L'Hopital's rule and various techniques for solving improper integrals
7. Determine convergence or divergence of sequences and series.
8. Use Taylor and MacLaurin series to represent functions.
9. Use Taylor or MacLaurin series to integrate functions not integrable by conventional methods.
10. Use the concept of polar coordinates to find areas, lengths of curves, and representations of conic sections.

Course Objectives:
Upon completion of this course, a student should be able to:
1. Define and use transcendental functions including logarithmic and exponential functions.
2. Compute derivatives and antiderivatives involving transcendental functions.
3. Apply integration to various applications.

4. Show various integration techniques.
5. Show correct usage of L'Hôpital's rule.
6. Describe and solve improper integrals.
7. Recognize and use infinite series.
8. Recognize and apply Taylor series to various problems.
9. Demonstrate knowledge of plane curves and polar coordinates.

Course Outline
The instructor may choose to organize topics in any order, but the following material will be covered.

Chapter 5 – Logarithmic, Exponential, and Other Transcendental Functions
5.5 Bases other than **e** and Applications.
5.6 Indeterminate Forms and L'Hôpital's Rule
5.7 Inverse Trigonometric Functions: Differentiation
5.8 Inverse Trigonometric Functions: Integration
5.9 Hyperbolic Functions
(Sections 5.1 – 5.4 are optional.)

Chapter 7- Applications of Integration
7.1 Area of Region Between Two Curves
7.2 Volume: The Disk Method
7.3 Volume: The Shell Method
7.4 Arc Length and Surface of Revolution
7.5 Work (Optional, if time permit)
7.6 Moments, Centers of Mass, and Centroids (Optional, if time permit)
7.7 Fluid Pressure and Fluid Force (Optional, if time permit)

Chapter 8- Applications of Integration
8.1 Basic Integration Rules
8.2 Integration by Parts
8.3 Trigonometric Integral
8.4 Trigonometric Substitution
8.5 Partial Fractions
8.6 Numerical Integration
8.7 Indeterminate Forms and L'Hôpital's Rule
8.8 Improper Integrals

Chapter 9- Infinite Series
9.1 Sequences
9.2 Series and Convergence
9.3 The Integral Test and p-Series
9.4 Comparisons of Series
9.5 Alternating Series
9.6 The Ratio and Root Tests
9.7 Taylor Polynomial and Approximations
9.8 Power Series
9.9 Representation of Functions by Power Series
9.10 Taylor and Maclaurin Series

Chapter 10- Conics, Parametric Equations, and Polar Coordinates
10.2 Plane Curves and Parametric Equations
10.3 Parametric Equations and Calculus
10.4 Polar Coordinates and Polar Graphs
10.5 Area and Arc Length in Polar Coordinates

10.6 Polar Equations of Conics and Kepler's Laws
(Section 10.1 is optional.)

Core Objectives

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 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.

CALENDAR

A tentative schedule for this class will be provided at the end of this syllabus, which will contain at least tentative dates for major assessments (in class exams and the final)

Instructional Methods

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 (16.25 % each)	65%
	Final Exam	25%
	Homework	10%
	Total	100%

Final Grade = 0.65 *Exam Ave + 0.25 * Final Exam + 0.10 * Homework Ave

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Tests:

Approximately 4 in-class major exams and a **comprehensive** final will be given. Absence on a test date is severely discouraged. **There will be no make up exams or quizzes during the semester. If you miss a quiz or an exam, then you will receive a 0 for that assessment**. *NO exam will be "dropped" or replaced.* The exams are closed-notes, closed-book non-collaborative exams. The exams will definitely take place at the dates prescribed in the included class schedule at the scheduled exam times (barring an event that closes the college), so please plan your schedule accordingly.

Homework: Most homework will be completed online using Webassign.net

You will have to buy an access code in order to do the Homeowrk. 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 is December 9th, 2018 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 grades.

Course : Math 2414 Calculus II Fall 2018

Class Key: hccs 1406 4155

Calculator:	A one – line scientific calculator is recommended for this course. Please see your professor concerning its use.
Software :	**Maple 18 is recommended**

The sharing of calculators or any other electronic device during examinations is strictly prohibited

If an unapproved calculator or electronic device is found in your possession after the examination has begun, then you will be dismissed and you will be assigned a score of zero (0).

Electronic Devices Policy
Any device having a QWERTY keypad arrangement similar to a typewriter or keyboard or other typewriter- like keyboards or keypads are prohibited. Devices with communication capabilities are prohibited. These include but are not limited to cameras; cell phones; desktop, hand-help, laptop, and palmtop computers; databanks; data collectors; organizers; pagers or beepers; PDAs; radios; headsets; tape players; portable fax machines; reproduction equipment; electronic dictionaries; electronic translators; and recorders

HCC Policy Statement - 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/support-services/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**
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 statement:
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/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 not yet 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 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

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. Before, you withdraw from your course; please take the time to meet with the instructor to discuss why you feel it is necessary to do so. The instructor may be able to provide you with suggestions that would enable you to complete the course. Your success is very important. Beginning in fall 2007, the Texas Legislature passed a law limiting first time entering freshmen to no more than **SIX** total course withdrawals **throughout** their educational career in obtaining a certificate and/or degree.

To help students avoid having to drop/withdraw from any class, HCC has instituted an Early Alert process by which your professor *may* "alert" you and HCC counselors that you might fail a class because of excessive absences and/or poor academic performance. It is your responsibility to visit with your professor or a counselor to learn about what, if any, HCC interventions might be available to assist you – online tutoring, child care, financial aid, job placement, etc. – to stay in class and improve your academic performance.

If you plan on withdrawing from your class, 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.

<div style="border:1px solid black; text-align:center; color:red; font-weight:bold;">The last day to withdraw November 2nd 2018</div>

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
Students should not engage in disruptive activities while in the classroom. Any conduct that is deemed detrimental to the academic atmosphere, such as cell phone use or consistent talking during instructional delivery, will not be tolerated. Any student found guilty of such conduct will be asked to leave the classroom.

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).

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 \$75 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 academic support to our diverse student population by creating an open atmosphere of learning for all students enrolled at HCC. Using a variety of tutoring techniques, we assist students across academic disciplines, addressing their individual needs in a constructive, safe, and welcoming environment. Our emphasis is on maximizing academic potential while promoting student success and retention. We are committed to helping students achieve their educational, personal, and career goals by empowering them to become confident, independent, lifelong learners.

Tutoring for individual subjects is offered at specific times throughout the week on various campuses. There is no need to make an appointment. If you need a tutor, please refer to our website: http://www.hccs.edu/findatutor for times and locations. For more information about tutoring at HCC, please go to http://www.hccs.edu/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, an HCC tutor or faculty answers posted questions within 24 hours (usually under 6 hours). In addition, you can find several online math resources through 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 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

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.

Course:	Math 2414 Calculus II
Text:	Calculus, by Larson, Hostetler, and Edwards, 11th ed
Instructor:	Mr. Sukhlal Ramharack
Time/Room	MW 8:00 -- 9:50 pm Room 216
E-mail:	sukhlal.ramharack@hccs.edu

Week	Mon	Tue	Wed	Thu	Fri
1	8/27 5.1, 5.2	8/28	8/29 5.3, 5.4	8/30	8/31
2	9/3 **Labor Day Holidays** **(Offices closed - No Class)**	9/4	9/5 5.5, 5.6	9/6	9/7
3	9/10 5.7, 5.8 **Official Day**	9/11	9/12 7.1, 7.2	9/13	9/14
4	9/17 7.3, 7.4	9/18	9/19 *Exam I Ch 5*	9/20	9/21
5	9/24 7.5, 7.6	9/25	9/26 7.7, 8.1	9/27	9/28
6	10/1 8.2	10/2	10/3 *Exam II Ch 7*	10/4	10/5
7	10/8 8.3, 8.4	10/9	10/10 8.4, 8.5	10/11	10/12
8	10/15 8.6, 8.7	10/16	10/17 8.8, 9.1	10/18	10/19
9	10/22 9.1, 9.2	10/23	10/24 **Exam III Ch 8**	10/25	10/26

10	**10/29**	**10/30**	**10/31**	**11/1**	**11/2**
	9,3, 9.4		9.4, 9.5		
					W-day @ 4:30 pm
11	**11/5**	**11/6**	**11/7**	**11/8**	**11/9**
	9.6, 9.7		9.7, 9.8		
12	**11/12**	**11/13**	**11/14**	**11/15**	**11/16**
	9.9, 9.9		9.10, 10,2		
13	**11/19**	**11/20**	**11/21**	**11/22**	**11/23**
	10.2, 10.3		10.3, 10.4	**Thanksgiving Holidays**	
14	**11/26**	**11/27**	**11/28**	**11/29**	**11/30**
	Exam IV Ch 9		10.4, 10.5		
15	**12/3**	**12/4**	**12/5**	**12/6**	**12/7**
	10.5, 10.6		*Review*		
16	**12/10** ***Final Exam @ 8:00 p.m.***	**12/11**	**12/12**	**12/13**	**12/14**
G r a d e s D u e B y N o o n O n M o n d a y , D e c e m b e r 1 9 t h , 2 0 1 8					