



Mathematics
Stafford Campus

Math 2414: Calculus II
CRN 38251– F8B Fall, 2017
Online INSTRUCTION

4 hour lecture course / 64 hours per semester/ 8weeks
Textbook: Calculus, 10th Edition, by Ron Larson & Bruce H. Edwards
ISBN-13: 978-1285057095
Web assign course key : hccs 0672 0603

Instructor: Eunice Kallarackal

Instructor Contact Information: Eunice.kallarackal@hccs.edu 713 718 5578

Office location and hours: Room 303.2, Stafford Campus, 10141 Cash Road, Stafford 77477,
Monday and Wednesday 12pm-1pm. Tuesday and Thursday 8am-9:30am

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: passing with a “C” or better.

Textbook Options for: Calculus, 10th Edition, by Ron Larson & Bruce H. Edwards

Loose-leaf Textbook + WebAssign Multi-Term Printed Access Card: Edwards ISBN-13: 978-1305718661

Hardbound Textbook + WebAssign Multi-Term Printed Access Card: Edwards ISBN-13: 978-1285338231

Hardbound Textbook: ISBN-13: 978-1285057095

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'Hopital'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 Inverse Trigonometric Functions: Differentiation
- 5.7 Inverse Trigonometric Functions: Integration
- 5.8 Hyperbolic Functions

(Sections 5.1 – 5.4 are optional, Please do the review assignment in homework)

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
- 8.7 Intermediate Forms and L'Hopital'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.

Exams and Quizzes:

There are three exams (taken online , from home) and a comprehensive final exam taken on campus. Exams may be in webassign or on eagle online. If you perform below your expectations or fail any exam, please set-up a conference with me as soon as possible.

There is no Make-up exam for any reason. However I will drop your lowest exam grade and replace it with the final exam grade. Make sure that you do not miss more than one exam.

Only the final exam is proctored and it is mandatory that you take the final exam.

If you are taking class outside of Houston, You have to arrange a proctor through the distance education department. You have to do that at least two weeks prior to the exam. That is by Oc, More information is posted in eagle on line.

CALENDAR (subject to change)

Exam 1 (Chapter5, Sec7.1 and Sec8.1): November5, 2017

Exam 2 (7.2-7.4 and Chapter 8): November21, 2017

Exam 3 (Chapter 9&10): December9, 2017

Final Exam (Comprehensive, chapters 5-10): has to be taken either on December14, @3100Main, Houston 77002, the system building or on December15, Central campus 1300Holman,

Note that Final exam has to be taken on campus. No Exceptions.

Instructional Methods

Instruction is done through Canvas and Web assign.

Web assign is an online program that you have to use for mandatory homework. You have to purchase an access code to access the homework. **When you purchase the access code you can access the text book also.** Web assign has videos of lessons.

The course key required to register for homework is given at the beginning of the syllabus.

Remember this is an online class. You have to be diligent about the work you have to do. You cannot procrastinate. Calculus2 is really a challenging but interesting class.

If any of you took Calculus1 the first 8 weeks of this semester using the 11th edition of the text book, contact me .

Assessments

Your grade will be calculated as follows

Homework 20%, 3 exams 45%, Final exam 35%

There is no makeup. However I will drop the lowest exam grade and replace it with the final exam grade. If you miss an exam that exam grade will be 0 and will be replaced by the final exam grade.

Please note that you cannot miss more than one exam.

Final Exam is mandatory. If you do not take the final you fail the class. There is no make up for the final.

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/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

Phone number: 713-718-8271

Phone number: 713-718-8271

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/district/departments/police/campus-carry/>.”

HCC Policy Statement: Academic Honesty

Any kind of cheating will result in a course grade of F.

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. 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.

Since this is an online class, the work you do on webassign tells me about your participation.

If you are not attending class, you are not learning the information. **Students may be dropped from a course if you do not participate in class by doing work work in web assign. If you do not sign up for web assign by October 30, you will be dropped from class.**

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** do so **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. If you do not withdraw before the deadline, you will receive the grade that you are making in the class as your final grade. The last day to withdraw for Fall Second 8 weeks class is 11/28/2017**

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

I want my students to be respectful of other students. During discussion in web assign or eagle online be careful about what you communicate and how you communicate.

Use of Camera and/or Recording Devices

Use of recording devices, including camera phones and tape recorders, is prohibited in classrooms, laboratories, faculty offices, and other locations where instruction, tutoring, or testing occurs. Students with disabilities who need to use a recording device as a reasonable accommodation should contact the Office for Students with Disabilities for information regarding reasonable accommodations

Instructor Requirements

I expect my students to sign up for homework the first day of class itself. Web assign offers a free trial period which helps you to sign up for the homework the first day itself. After October 30 you will not be able to sign up for homework as I will be closing the enrollment on that date.

Do the assignments regularly. Homework for all sections covered in an exam is due the day of the exam.

Grading Scale

90 - 100 = A

80 - 89 = B

70 - 79 = C

60 - 69 = D

Below 60 = F

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 the final exam

Personal communication devices are to not be on the student desk during examinations. Usage of such devices is expressly prohibited during examinations and will be considered cheating (see academic honesty section above).

Calculators:

Only non-programmable non graphing calculators are allowed on the final.

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:

Any student enrolled in Math 2414 at HCCS has access to the Academic Support Center where they may get additional help in understanding the theory or improving their skill. The Center is staffed with mathematics faculty and student assistants, and offers tutorial help. A Chapter Tests preparation video CD comes with the text.

Students can get free assistance, 24 hours a day, 7 days a week, in Math, English and other subjects, at www.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 for more information.

Administration contact information

College level Math Courses

Chair of Math	Jaime Hernandez	SW Campus	713-718-2477	Stafford, Scarcella, N108
- Admin. Assistant	Tiffany Pham	SW Campus	713-718-7770	Stafford, Scarcella, N108
- Admin. Assistant	Dipal Parekh	SW Campus	713-718-2477	Stafford, Scarcella, N108
Math Assoc. Chair	Clen Vance	CE Campus	713-718-6421	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	Susan Fife	SE Campus	713-718-7241	Felix Morales Building, Rm 124
- Admin. Assistant	Carmen Vasquez	SE Campus	713-718-7056	Felix Morales Building, Rm 124
Dev. Math Assoc. Chair	Marisol Montemayor	SE Campus	713-718-7153	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.