<table>
<tr><td></td><td>**Department of Mathematics**
COURSE SYLLABUS – Online

MATH 2412: PreCalculus
Spring 2018 – CRN 60146 – SS</td></tr>
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INSTRUCTOR:	Houssam Kalajo
CONTACT INFORMATION:	E-mail Houssam.kalajo@hccs.edu web page http://learning.hccs.edu/faculty/houssam.kalajo

(The MyMathLab access code is included in the book package at the bookstores. It can also be Purchased separately online at www.coursecompass.com).

Office location and hours: West Loop Campus, Student Success Center F15, 7–8 am, Mo – Th and 12-1 pm Tu/Th; by appointment.

Course Description
Math 2412: Precalculus. In-depth combined study of algebra, trigonometry, and other topics for calculus readiness. Topics include elementary theory of functions and equations, analytic geometry, vectors, mathematical induction, sequences and finite series, and an introduction limits.

Prerequisites
Math 1314: Pass with a "C" or better AND Math 1316: Pass with a "C" or better or Departmental approval

Credits: 4 credit hours (4 lectures).

Course Goal
This course is intended primarily to prepare students for calculus. It can also be used for general mathematics credit.

Course Student Learning Outcomes (SLO)
1. Demonstrate and apply knowledge of properties of functions.
2. Recognize and apply algebraic and transcendental functions and solve related equations.
3. Apply graphing techniques to algebraic and transcendental functions.
4. Compute the values of trigonometric functions for key angles in all quadrants of the unit circle
   measured in both degrees and radians.
5. Prove trigonometric identities.
6. Solve right and oblique triangles.
7. Evaluate limits analytically

Learning objectives
Students will:
1.   Develop and use various problem-solving techniques.
2.   Recognize functions as ordered pairs.
3.   Determine the graph of an algebraic equation or function.
4.   Understand synthetic division.
5.   Develop partial fraction decomposition.
6.   Find the zeros of real functions
7.   Solve polynomial equations.
8.   Utilize the six basic trigonometric functions.
9.   Apply the Law of sines and the Law of cosines for various types of situations.
10.   Verify various trigonometric identities.
11.   Find the powers and roots of complex numbers using DeMoivre's Theorem.
12.   Understand basic vectors (2 dimensional).
13.   Convert points in a rectangular coordinate system to polar coordinates.
14.   Recognize algebraic formulas relating to circles, parabolas, ellipses, and hyperbolas.
15.   Use translation of axes, rotation of axes, and polar equations of conics.

16.   Recognize the use of arithmetic and geometric sequences.
17.   Use summation notation to represent a series.
18.   Understand and use the Binomial theorem.
19.   Understand mathematical induction.
20.   Understand the basic concepts of limits.

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.

Instructional Materials

Textbook:
Precalculus 6/E

- Robert Blitzer
- Textbook ISBN- 13: 978-0134765488
- Publisher: Pearson Prentice Hall
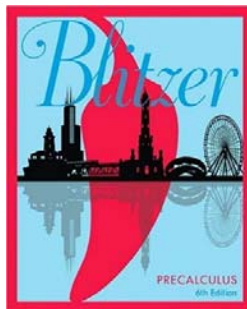
Students will either need to purchase their textbook/access code bundle from the bookstore, OR they can purchase online via the MML registration process. MyMathLab ALWAYS comes with an e-Text.

MATH 2412 – PRECALCULUS
LECTURE SCHEDULE

APPROXIMATE TIME	TEXT REFERENCE
Unit I – Factoring with negative rational exponents	**Section:** Addendum 1
Difference Quotient	**Section:** 1.3 p. 180-1
Partial Fractions	**Section:** 7.3

(3 hours)
Review Topics include the following: Graphs and graphing utilities, lines in the plane, slope, functions, polynomial functions of higher degree, synthetic division, real zeros of polynomial functions, and the intermediate value theorem. Required topics are: Factoring with negative rational exponents, finding the difference quotient, and partial fraction decomposition.

Addendum 1
Factoring with negative rational exponents
Page. 67 Example 13

Exercises: Page. 69 #93 – 101

Suggested supplementary problems:

1. Factor: $2(2x+3)(4x+1)^{-\frac{1}{2}}+2(4x+1)^{\frac{1}{2}}$

2. Factor: $(3x+4)^{\frac{1}{2}}+\frac{3}{2}(x+5)(3x+4)^{-\frac{1}{2}}$

3. Factor: $4(x+5)^{-\frac{3}{2}}-\frac{3}{2}(4x+7)(x+5)^{-\frac{5}{2}}$

4. Factor: $3(5x-3)(2x-1)^{-\frac{1}{2}}+6(5x-3)^{2}(2x-1)^{\frac{1}{2}}$

5. Factor: $8(7x-3)^{\frac{1}{2}}(2x+5)^{-\frac{1}{3}}+4(7x-3)^{\frac{3}{2}}(2x+5)^{\frac{2}{3}}$

Unit II – Trigonometry (review)   **Sections:** {4.2, 4.5 - 4.7} (Review)
        Analytic Trigonometry (review)   **Sections:** {5.1 – 5.3}   (Review)
        Analytic Trigonometry   **Sections:** 5.4, 5.5
{5 hours at most for review}
(4 hours)
This unit contains Trigonometric Functions, the unit circle, graphs of the trigonometric functions, inverse trigonometric functions, verifying identities, sum and difference formulas, double angle and half-angle formulas, sum-to-product and product-to-sum formulas, and solving trigonometric equations.

Unit III – Applications of Trigonometry   **Sections:**   Chapter 6
(12 hours)
This unit includes Law of Sines, Law of Cosines, Polar coordinates, graphs of Polar equations, DeMoivre's Theorem, vectors, and the dot product.

Unit IV – Conic Sections and Analytic Geometry   **Sections:**   Chapter 9
(15 hours)
Topics include the ellipse, the hyperbola, the parabola, rotation of axes, parametric equations, and conic sections in polar coordinates.

Unit V – Sequences, Induction, and Probability   **Sections:**   10.1 – 10.5
(14 hours)
This unit contains Sequences and summation notation, arithmetic sequences, Geometric Sequences and Series, Mathematical Induction, and The Binomial Theorem.

Unit VI – Introduction to Calculus   **Sections:**   11.1 – 11.4
(12 hours)
This unit contains an introduction to limits using tables and properties, continuity, and an introduction to derivatives.

Instructional Methods
As an instructor, I want my students to be successful. I feel that it is my responsibility to provide you with knowledge concerning the field of mathematics, modeling good analytical problem solving strategies, and organizing and monitoring the success of each student with homework that allows you to connect the information that you learn in this course to applications in other course work and life in the real world.
As a student wanting to learn about the field of mathematics, it is your responsibility to read the textbook, submit assignments on the due dates, study for the exams, and enjoy yourself while experiencing the real world of mathematics**.**

Student Assignments
Assignments have been developed that will enhance your learning. To better understand a topic, you will be given assignments on key information that you will need to remember for your success in your career. Students will be required to successfully complete the following:

Mathematics Homework Assignments:
All homework assignments for this class must be completed online using MyMathLab. The MyMathLab Course ID to be used for registration purposes only, and the school zip code is <u>77477 or 77081</u>. To register for MyMathLab and to access the homework, go to <u>www.coursecompass.com</u>. The course ID you need is available on HCC Canvas.

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

Exam Policy: There will be four major examinations plus the final exam. You will be allowed 2 hours to complete each test.

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

Grading policy
Your course grade will be computed as follows:

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

One lowest major exam out of 4 will be dropped.
Final Average Score = Average of 3 exams * 0.45 + HWK (MyMathLab) * 0.20 + Final Exam * 0.35

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

Final Average	90 ≤ Avg. ≤ 100	80 ≤ Avg. < 90	70 ≤ Avg. < 80	60 ≤ Avg. < 70	Avg. < 60
Final Course Grade	A	B	C	D	F or FX

Final Examination:
The final exam is comprehensive and proctored (Must be taken in person at the Testing Center). All questions on it can deal with any of the course objectives. The final examination must be taken by all students on campus at 3100 Main Street or central campus. The final exam is a closed book exam. Do not bring any books, study questions, or notes. Cell phones or any other electronic devices are not allowed. Your professor may not be at the testing location, so if you have specific questions concerning the final exam, you need to contact your professor prior to the testing day.

If you are taking this class outside Houston, you may arrange for a proctor at a college or university near you. You have to do that through the Distance Education Department as soon as the class starts. You must take it at an HCC-approved institutional proctored testing center during the same days as the rest of the class. For additional questions, you may contact: de@hccs.edu

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

Test Schedule:

Test # 1	02/22/2018 – 02/24/2018	Sections: Addendum 1, 1.3, 7.3, 4.2, 4.5 – 4.7, and 5.1 – 5.3
Test # 2	03/15/2018 – 03/17/2018	Sections: 5.4 – 5.5 and 6.1 – 6.7
Test # 3	03/29/2018 – 03/31/2018	Sections: 10.1 – 10.5 and 11.1 – 11.2
Test # 4	04/19/2018 – 04/21/2018	Sections: 11.3 – 11.4 and Chapter 9
Final Exam	05/03/2018 – 05/05/2018	Comprehensive – All the above sections (proctored)

Technical Support
If you should experience technical difficulties during the semester, these problems are not under the control of the instructor. Such technical problems should be directed to technical support. For Canvas- Eagle Online tech support, go to the HCC Canvas - Eagle Online support website, www.hccs.edu/online/student-services/. For MyMathLab, please contact MyMathLab Support at https://support.pearson.com or call (855) 875-1797.

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

Ability Services Contact Information

Central College	713-718-6164	
Coleman College	713-718-7376	
Northeast College	713-718-8322	
Northwest College	713-718-5422	713-718-5408
Southeast College	713-718-7144	
Southwest College	713-718-5910	
Adaptive Equipment/Assistive Technology	713-718-6629	713-718-5604
Interpreting and CART services	713-718-6333	

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

David Cross
Director EEO/Compliance
Office of Institutional Equity & Diversity
3100 Main
Houston, TX 77266-7517 or Institutional.Equity@hccs.edu
Phone number: (713) 718-8271
Phone number: (713) 718-8271

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

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

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

against a student accused of scholastic dishonesty. "Scholastic dishonesty" includes, but is not limited to, cheating on a test, plagiarism, and collusion.

Cheating on a test includes:
• Copying from another students' test paper;
• Using materials not authorized by the person giving the test;
• Collaborating with another student during a test without authorization;
• Knowingly using, buying, selling, stealing, transporting, or soliciting in whole or part the contents of a test 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)

Internet Access:
This class is a distance-education class using Eagle Online CANVAS for notes, reviews, and assessments. Each student must maintain internet access throughout this course. Additionally, students are expected to maintain a state of technical compliance, including (but not limited to) the following: up-to-date software as required by the instructor, a stable Internet connection, and use of the Firefox browser when using Eagle Online CANVAS. The instructor is not required to give consideration for lost/missing/unacceptable work stemming from technical non-compliance or end-user technical issues. Failure to maintain internet access shall not constitute a valid excuse for missed work. Any student who cannot keep up with the coursework due to a lack of a computer or internet access must drop the course. Any student found to have quit logging in (two weeks during a regular term) and whom the Professor is unable to contact is subject to being dropped without further warning, resulting in either a "W" or a "FX" grade, depending upon the time of the term at which the behavior is noted.

Class Attendance:
As stated in the HCC Catalog, all students are expected to attend classes regularly. Students in DE courses must log into their Eagle Online Canvas class, or they will be counted as absent. Just like an on-campus class, your regular participation is required. The participation requirement is given below. Although it is the responsibility of the student to withdraw officially from a course, the instructor also has the authority to block a student from accessing Eagle Online, and/or to drop a student for excessive absences or failure to participate regularly. DE students who do not log into their Eagle Online CANVAS class before the Official Day of Record will be AUTOMATICALLY dropped for nonattendance. Completing the DE online orientation does not count as attendance. Logging into a DE course without active participation is regarded as non-attending.

Participation Requirement:
Students must complete the entire Syllabus & Orientation Section in the Eagle Online CANVAS course **by the Official Day of Record**. Evidence that the student has completed the participation requirement will be completion of the Introductory Quiz with a perfect score before the Official Day of Record.

Distance Education Student Handbook:
The Distance Education Student Handbook contains policies and procedures unique to the DE student. Students should have reviewed the handbook as part of the mandatory orientation. It is the student's responsibility to be familiar with the handbook's contents. The handbook contains valuable information, answers, and resources, such as DE contacts, policies and procedures (how to drop, attendance requirements, etc.), student services (ADA, financial aid, degree planning, etc.), course information, testing procedures, technical support, and academic calendars. Refer to the DE Student Handbook by visiting this link: http://de.hccs.edu/de/de-student-handbook

HCC Course Withdrawal Policy:
If you feel that you cannot complete this course, you will need to withdraw from the course prior to the final date of withdrawal, you **MUST** contact a HCC counselor or your professor prior to withdrawing (dropping) the class for approval and this must be done **PRIOR** to the withdrawal deadline to receive a "W" on your transcript. **Final withdrawal deadlines vary each semester and/or depending on class length, please visit the online registration calendars, HCC schedule of classes and catalog, any HCC Registration Office, or any HCC counselor to determine class withdrawal deadlines. *Remember to allow a 24-hour response time when communicating via email and/or telephone with a professor and/or counselor. Do not submit a request to discuss withdrawal options less than a day before the deadline.* If

you do not withdraw before the deadline, you will receive the grade that you are making in the class as your final grade. If you wish to drop the class, then it is your responsibility to do that before the final drop date. ***Neither you nor your instructor will be able to perform the drop after the final drop date and I will not drop you for nonattendance.*** **The last day to withdraw from this course with a grade of W is 04/12/2018.**

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.

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

Student Course Reinstatement Policy:

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

Resources:

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

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

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