

TEXAS A & M INTERNATIONAL UNIVERSITY
FALL 2012
MATH 2412 – PRECALCULUS

SECTION: 101
ROOM: BH 201

MEETING DAYS: MTWR
MEETING HOURS: 1:30 – 2:20 PM

INSTRUCTOR: Eun Ju Lee, Ph.D.
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OFFICE: LBV 325

OFFICE HOURS: MW, 12:20-12:40, 2:20-2:40 or by appointment.

TEXT: *Precalculus – 9th edition*, M. Sullivan, Prentice-Hall, Pearson Education, Inc.; ISBN-978-0-321-71683-6

COURSE DESCRIPTION

A more advanced course than both MATH 1314 and 1316 giving a review of their combined content. Pre-Requisite: A COMPASS score of College Algebra 35 or above is required for students who do not have a THEA Mathematics score of 280 or above, an ACT Mathematics score of 25 or above, or an SAT Mathematics score of 600 or above.

CORE-CURRICULUM LEARNING OUTCOMES (CCO's)

1. **Critical Thinking:** This course is designated to enhance student's critical thinking in mathematics through their creative thinking, innovation, analysis, evaluation, and synthesis of information.
In this course they will be asked to analyze a primary source and use that source as an evidence for a wider argument on the ideas, values, and technical structures (SLO's 1, 2, 3, 4, 5, 6, & 7).
2. **Communication Skills:** Students will demonstrate their ability to communicate effectively by using *written* communication. (SLO's 8 & 9).
3. **Empirical and Quantitative Skills:** includes the manipulation and analysis of numerical data or observable facts resulting in informed conclusions. (SLO's 8 & 9).

STUDENTS LEARNING OUTCOMES (SLO's)

Upon successful completion of the course, the student will be able to:

1. Set up and solve polynomial, rational, radical, exponential, and logarithmic equations and inequalities of one variable, and systems of linear and non-linear equations with two or more variables.
2. Sketch the graphs of equations and inequalities.
3. Perform operations with complex numbers and matrices to apply them to solve problems. Use the Polar form and D'Moivre's formula to compute the n-th root of a complex number.
4. Compute the general term of arithmetic and geometric sequence and the sum of its terms, and perform the expansion of a positive integer power of a binomial.

5. Identify functions from algebraic, graphical, tabular, and verbal expressions and apply them to solve problems.
6. Recall the definition of the six basic trigonometric functions: sine, cosine, tangent, cotangent, secant, cosecant, as well as their basic periodicity properties, graphs and symmetries, and identify and use their inverse trigonometric functions, together with their domains and graphs, to solve trigonometric equations.
7. Verify trigonometric identities and their relative relationships, such as use the value of the trigonometric function of an angle to compute the value of a trigonometric function of the same angle, or double that angle, or half that angle;
8. Use vectors and trigonometry concepts to solve problems related to geometry using the sine and cosine laws, or to solve problems related to parametric equations or polar coordinates and physics.; and
9. Prepare and submit a final paper using phrases commonly found in mathematical literature.

ATTENDANCE:

Attendance is required, and is extremely important for success in this course. *It is the responsibility of the student* to sign the attendance sheet at the beginning of each class meeting. It is the responsibility of the student who fails to attend class to inform the instructor before the class and make up missed materials after class.

It is the responsibility of the student to withdraw a course formally before the drop date if she/he needs to. The instructor is not responsible for dropping students who suspend class attendance. *A student who abandons courses without officially withdrawing will receive an "F" in each course*, regardless of when that student ceases to attend classes.

TAMIU E-MAIL:

E-mails will be used for this course (class announcements, course materials and discussion, etc.). According to the Policies of the College of Arts and Sciences (see attachments), all these email communications should be via TAMIU e-mail accounts. Please check your TAMIU e-mail at least every Monday and Wednesday.

ASSIGNMENTS:

Homework will be assigned regularly so that students have opportunity to apply the theories learned from class. Your homework should be submitted at the beginning of class when it is due. Late assignments are not normally accepted, except only if excused with proper documentation. A student who experiences difficulty that affects his or her academic performance should talk to the instructor as early as possible.

ACADEMIC HONESTY:

Scholastic dishonesty will not be tolerated. Your attention is called to the University policy in the Student Handbook. Questions and discussions are welcome and encouraged in office hours as well as in class.

TESTS AND FINAL EXAM:

The students are expected to take three tests and one **comprehensive** final Exam.

MAKE-UP POLICIES:

There will be no make-up midterm and final exam. Zero score will be recorded for missed exam.

GRADING POLICY:

Attendance – 5 %, Tests (3) – 45%, Homework-10%, Final Paper – 10%, Final Exam – 30%.

A: 90 – 100; B: 80 – 89; C: 70 – 79; D: 60 – 69; F: below 60

50% on the Final Exam is necessary (but not sufficient) for a grade better than C.

IMPORTANT DATES:

08/23, Thursday First Class Day

09/17, Test 1

09/19, Wednesday Twelfth Class Day; last day courses may be dropped without record

10/17, Test 2

10/18-20, Thursday. Mid Semester Break. No Classes

11/9, Friday Last day to drop a course or withdraw from the University

11/12, Test 3

11/21-24, Wednesday Thanksgiving Holidays

12/04, Tuesday Last Class Day

TBA, Final Exam

NOTE: This syllabus is subject to be changed throughout the semester by the instructor.

SYLLABUS (TENTATIVE):

Date	Section(s)	Topic(s)
August 23	Introduction to course	
August 27 - 30	1.1 – 1.4	The Distance and Midpoint Formulas, Graphs of Equations, Lines, Circles
September 3 -6	2.1 – 2.4	Functions
September 10 - 13	3.1, 3.3, 3.5	Linear Functions, Quadratic Functions
September 17 - 20	Test 1, 4.1 – 4.2	Polynomial Functions
September 24 -27	4.3 – 4.6	Polynomials and Rational Functions
October 1 - 4	5.1 – 5.3	Composite Functions, Inverse Functions, Exponential Functions
October 8 - 11	5.4 – 5.6	Logarithmic Functions, Properties of Logarithms
October 15 - 17	6.1 – 6.3, Test 2	Exponential Functions, Angles, Trigonometric Functions
October 22 - 25	6.4 – 6.5	Graphs of the Sine and Cosine Functions
October 29 - 31	7.1 – 7.2	The Inverse Trigonometric Functions
November 1	7.3 – 7.5	Trigonometric Equations, Identities
November 5 -8	7.6 – 7.7, 8.1 – 8.2	Sum and Difference, Double-Angle and Half-Angle Formulas, Product-Sum and Sum-Product Formulas
November 12 - 15	Test 3, 8.3, 9.1 – 9.2	Right Triangles, The Law of Sines, The Law of Cosines, Polar Coordinates, Polar Equations
November 19 - 20	9.3 – 9.7	The Complex Plane: De Moivre’s Theorem, Vectors, The Dot Products, The Cross Products
November 26 - 29	11.1 – 11.2, 11.4, 11.6	Systems of Linear Equations
December 3 - 4	12.1 – 12.3	Sequences and Series
	Final Exam (Comprehensive)	TBA

Policies of the College of Arts and Sciences

(Required on all COAS Syllabi)

Classroom Behavior

The College of Arts and Sciences encourages classroom discussion and academic debate as an essential intellectual activity. It is essential that students learn to express and defend their beliefs, but it is also essential that they learn to listen and respond respectfully to others whose beliefs they may not share. The College will always tolerate diverse, unorthodox, and unpopular points of view, but it will not tolerate condescending or insulting remarks. When students verbally abuse or ridicule and intimidate others whose views they do not agree with, they subvert the free exchange of ideas that should characterize a university classroom. If their actions are deemed by the professor to be disruptive, they will be subject to appropriate disciplinary action, which may include being involuntarily withdrawn from the class.

Plagiarism and Cheating

Plagiarism is the presentation of someone else's work as your own. **1)** When you borrow someone else's facts, ideas, or opinions and put them entirely in your own words, you must acknowledge that these thoughts are not your own by immediately citing the source in your paper. Failure to do this is plagiarism. **2)** When you also borrow someone else's words (short phrases, clauses, or sentences), you must enclose the copied words in quotation marks as well as citing the source. Failure to do this is plagiarism. **3)** When you present someone else's paper or exam (stolen, borrowed, or bought) as your own, you have committed a clearly intentional form of intellectual theft and have put your academic future in jeopardy. This is the worst form of plagiarism.

Here is another explanation from the 2010, sixth edition of the *Manual of The American Psychological Association (APA)*:

Plagiarism: Researchers do not claim the words and ideas of another as their own; they give credit where credit is due. Quotations marks should be used to indicate the exact words of another. *Each* time you paraphrase another author (i.e., summarize a passage or rearrange the order of a sentence and change some of the words), you need to credit the source in the text.

The key element of this principle is that authors do not present the work of another as if it were their own words. This can extend to ideas as well as written words. If authors model a study after one done by someone else, the originating author should be given credit. If the rationale for a study was suggested in the Discussion section of someone else's article, the person should be given credit. Given the free exchange of ideas, which is very important for the health of intellectual discourse, authors may not know where an idea for a study originated. If authors do know, however, they should acknowledge the source; this includes personal communications. (pp. 15-16)

Consult the Writing Center or a recommended guide to documentation and research such as the *Manual of the APA* or the *MLA Handbook for Writers of Research Papers* for guidance on proper documentation. If you still have doubts concerning proper documentation, seek advice from your instructor prior to submitting a final draft.

Penalties for Plagiarism: Should a faculty member discover that a student has committed plagiarism, the student should receive a grade of 'F' in that course and the matter will be referred to the Honor Council for possible disciplinary action. The faculty member, however, may elect to give freshmen and sophomore students a "zero" for the assignment and to allow them to revise the assignment up to a grade of "F" (50%) if they believe that the student plagiarized out of ignorance or carelessness and not out of an attempt to deceive in order to earn an unmerited grade. This option should not be available to juniors, seniors, or graduate students, who cannot reasonably claim ignorance of documentation rules as an excuse.

Caution: Be very careful what you upload to Turnitin or send to your professor for evaluation. Whatever you upload for evaluation will be considered your final, approved draft. If it is plagiarized, you will be held responsible. The excuse that "it was only a draft" will not be accepted.

Caution: Also, do not share your electronic files with others. If you do, you are responsible for the possible consequences. If another student takes your file of a paper and changes the name to his or her name and submits it and you also submit the paper, we will hold both of you responsible for plagiarism. It is impossible for us to know with certainty who wrote the paper and who stole it. And, of course, we cannot know if there was collusion between you and the other student in the matter.

Penalties for Cheating: Should a faculty member discover a student cheating on an exam or quiz or other class project, the student should receive a "zero" for the assignment and not be allowed to make the assignment up. The incident should be reported to the chair of the department and to the Honor Council. If the cheating is extensive, however, or if the assignment constitutes a major grade for the course (e.g., a final exam), or if the student has cheated in the past, the student should receive an "F" in the course, and the matter should be referred to the Honor Council. Under no circumstances should a student who deserves an "F" in the course be allowed to withdraw from the course with a "W."

Student Right of Appeal: Faculty will notify students immediately via the student's TAMU e-mail account that they have submitted plagiarized work. Students have the right to appeal a faculty member's charge of academic dishonesty by notifying the TAMU Honor Council of their intent to appeal as long as the notification of appeal comes within 5 business days of the faculty member's e-mail message to the student. The *Student Handbook* provides details

UConnect, TAMU E-Mail, and Dusty Alert

Personal Announcements sent to students through TAMIU's UConnect Portal and TAMIU E-mail are the official means of communicating course and university business with students and faculty – not the U.S. Mail and not other e-mail addresses. Students and faculty must check UConnect and their TAMIU e-mail accounts regularly, if not daily. Not having seen an important TAMIU e-mail or UConnect message from a faculty member, chair, or dean is not accepted as an excuse for failure to take important action. Students, faculty, and staff are encouraged to sign-up for *Dusty Alert* (see www.tamtu.edu). *Dusty Alert* is an instant cell phone text-messaging system allowing the university to communicate immediately with you if there is an on-campus emergency, something of immediate danger to you, or a campus closing.

Copyright Restrictions

The Copyright Act of 1976 grants to copyright owners the exclusive right to reproduce their works and distribute copies of their work. Works that receive copyright protection include published works such as a textbook. Copying a textbook without permission from the owner of the copyright may constitute copyright infringement. Civil and criminal penalties may be assessed for copyright infringement. Civil penalties include damages up to \$100,000; criminal penalties include a fine up to \$250,000 and imprisonment.

Students with Disabilities

Texas A&M International University seeks to provide reasonable accommodations for all qualified persons with disabilities. This University will adhere to all applicable federal, state, and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal education opportunity. It is the student's responsibility to register with the Director of Student Counseling and to contact the faculty member in a timely fashion to arrange for suitable accommodations.

Incompletes

Students who are unable to complete a course should withdraw from the course before the final date for withdrawal and receive a "W." To qualify for an "incomplete" and thus have the opportunity to complete the course at a later date, a student must meet the following criteria:

1. The student must have completed 90% of the course work assigned before the final date for withdrawing from a course with a "W", and the student must be passing the course;
2. The student cannot complete the course because an accident, an illness, or a traumatic personal or family event occurred after the final date for withdrawal from a course;
3. The student must sign an "Incomplete Grade Contract" and secure signatures of approval from the professor and the college dean.
4. The student must agree to complete the missing course work before the end of the next long semester; failure to meet this deadline will cause the "I" to automatically be converted to a "F"; extensions to this deadline may be granted by the dean of the college.

This is the general policy regarding the circumstances under which an "incomplete" may be granted, but under exceptional circumstances, a student may receive an incomplete who does not meet all of the criteria above if the faculty member, department chair, and dean recommend it.

Student Responsibility for Dropping a Course

It is the responsibility of the STUDENT to drop the course before the final date for withdrawal from a course. Faculty members, in fact, may not drop a student from a course without getting the approval of their department chair and dean.

Independent Study Course

Independent Study (IS) courses are offered only under exceptional circumstances. Required courses intended to build academic skills may not be taken as IS (e.g., clinical supervision and internships). No student will take more than one IS course per semester. Moreover, IS courses are limited to seniors and graduate students. Summer IS course must continue through both summer sessions.

Grade Changes & Appeals

Faculty are authorized to change final grades only when they have committed a computational error or an error in recording a grade, and they must receive the approval of their department chairs and the dean to change the grade. As part of that approval, they must attach a detailed explanation of the reason for the mistake. Only in rare cases would another reason be entertained as legitimate for a grade change. A student who is unhappy with his or her grade on an assignment must discuss the situation with the faculty member teaching the course. If students believe that they have been graded unfairly, they have the right to appeal the grade using a grade appeal process in the *Student Handbook* and the *Faculty Handbook*.

Final Examination

Final Examination must be comprehensive and must contain a written component. The written component should comprise at least 20% of the final exam grade. Exceptions to this policy must receive the approval of the department chair and the dean at the beginning of the semester.