**Math 2412 PreCalculus**

Instructor contact information

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| --- | --- | --- | --- |
| **Instructor:** |  | **Office Phone:** |  |
|  | | | |
| **Office:** |  | **Office Hours:** |  |
|  |  | (or hours of availability) | |
| **E-mail:** |  | **Website:** |  |

Welcome to

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| --- | --- | --- | --- |
| **Course Title:** | PreCalculus | **Term and Year:** |  |
| **Course Subject:** | Math 2412 |  |  |
| **Course Section:** |  | **Class Days & Times:** |  |
| **Credit Hours:** | 4 |  |  |
| **Lecture Hours:** | 4 | **Class Room Location:** |  |
| **Lab Hours:** | 1 |  |  |
| **Total Contact Hours:**  **(All hrs. x 16)** | 80 |  |  |

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| --- | --- |
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Course overview

For details go to <http://research.lonestar.edu/cat/catsrch.asp>

**Catalog Description:**

An integrated treatment of the concepts necessary for calculus beginning with a review of algebraic and transcendental functions including trigonometric functions. Topics also include the binomial theorem, analytic geometry, vector algebra, polar and parametric equations, mathematical induction and sequences and series.

**Student Learning Outcomes:**

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. Apply the binomial theorem.
8. Determine equations of conic sections, and graph conics, including translation and identification of vertices, foci, and asymptotes.
9. Perform basic operations and solve applications using vector algebra.
10. Perform operations and graph equations using polar and parametric equations.
11. Prove statements using mathematical induction.
12. Use properties of arithmetic and geometric sequences and series to identify terms, find sums and solve applications.

**In our efforts to prepare students for a changing world, students may be expected to utilize computer technology while enrolled in classes, certificate, and/or degree programs within LSCS. The specific requirements are listed below:**

***(Examples only - please delete and list your specific requirements here): Online quizzes, online assignment submissions, Microsoft Word document submissions, discussion boards, etc.***

Getting ready

**Prerequisites:** Math 1314 and Math 1316 OR placement by testing

**Co-requisites:** none

**Required Material:** PreCalculus: Concepts Through Functions, A Unit Circle Approach to

Trigonometry, 3rd ed. by Sullivan and Sullivan, ISBN #9780321926036 (with

MML) or ISBN # 9780321931047 (without MML)

Graphing Calculator

Instructor guidelines and policies

**Attendance:**

**Assignments:**

**Make-up Exams:**

**Cell phones :**

**Department/Division Contact: :** Department Chair : Martha Donnelly, 281-290-5053

Dean of Instruction : Dr. Veronique V. Tran, 281-655-3789

**Grade Determination:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Your grade will be determined by the following** | **Details** | **Points**  (if applicable) | **Percent of Final Average** |
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|  |  |  |  |
|  |  |  |  |
| Total: | |  | 100% |

**Letter Grade Assignment:**

|  |  |
| --- | --- |
| Letter Grade | **Final Average in Percent** |
| A | 89.5 – 100 |
| B | 79.5 – 89.4 |
| C | 69.5 – 79.4 |
| D | 59.5 – 69.4 |
| F | < 59.5 |

**Withdrawal Policy**

Withdrawal from the course after the official day of record and prior to “W” Day, (see current catalog for this date) will result in a final grade of “W” on your transcript. Instructor approval is necessary if you want to withdraw after official day. No credit will be awarded for a course earning a “W.” If you stop attending class, you must withdraw at the registration office prior to “W” day. If you stop attending class and do not officially withdraw, you will receive an “F” for the course.

**Six Drop Rule**

Students who enrolled in Texas public institutions of higher education as first-time college students during the Fall 2007 term or later are subject to section 51.907 of the Texas Education Code, which states that an institution of higher education may not permit a student to drop (withdraw with a grade of “W”) from more than six courses, including courses that a transfer student has previously dropped at other Texas public institutions of higher education that have already been counted against their six drop limit.   Each student should fully understand this drop limit before you drop any course. Please see a Counselor or Advisor in our Student Services area for additional information and assistance. **This policy does not affect developmental or ESOL students.**

**Lone Star College-University Park Learning Center is committed to your success**

**Your success is our primary concern!** If you are experiencing challenges achieving your academic goals, please contact your instructor or an advisor. We can provide assistance with academic needs, ADA accommodations, classroom difficulties, financial concerns, and other issues.

**Tutoring: For all disciplines, please call 281.401.5388 for information on hours and location. For in depth t**utoring the reading lab, writing lab, and math lab can be found within the Learning Center in building 12, 8th floor.

**Math Homework Hotspot:** The Math Homework Hotstop provides individualized as well as collaborative learning help on homework to all LSC math students with instructors/tutors onsite Monday through Saturday, it is located at LSC-UP bldg. 13, Room 331.

**Counseling Services :** Counseling services are available to students who are experiencing difficulty with

academic issues, selection of college major, career planning, disability

accommodations, or personal issues. Students may contact Counseling, Career,

and Disability Services at 281.401.5311, or in building 13 Suite 260.

**The Assistive Technology Lab:**  The Assistive Technology Lab is available for students who benefit from its

various technologies to convert text to speech, magnify items, convert text

to Braille, etc. For further information, please contact the Learning Center

in building 12, 8th floor.

**Writing Lab:** Having strong writing skills helps students become successful not only in their academic lives,

But also in their professional and personal lives.  With this goal in mind, the University Park

Writing Center, located in the Student Learning Center, provides tutoring and additional

services to help students strengthen their writing skills.  Students enrolled in any course that

requires any type of writing can get individualized help at the Writing Center.

**Library:** The Lone Star College-University Park Library is located in building 12, 8th floor and contains

information resources for both college students and community members. Librarians are available to

assist with research. To contact a reference librarian, [uplibrary-ref@lonestar.edu](mailto:uplibrary-ref@lonestar.edu).

For Library hours and contact information, please visit <http://www.lonestar.edu/library> . 

Tentative Instructional Outline:

| **Week** | **Activities and Assignment** | Objectives and Details |
| --- | --- | --- |
| 1 | Syllabus/Ch. 11.1 Parabolas |  |
|  | Ch. 11.2 Ellipses |  |
|  |  |  |
| 2 | Ch. 11.3 Hyperbolas |  |
|  | Ch. 11.4 Shifted Conics |  |
|  |  |  |
| 3 | Ch. 12.1 Sequences and Summation Notation |  |
|  | Ch. 12.2 Arithmetic Sequences |  |
|  | Ch. 12.3 Geometric Sequences |  |
| 4 | Ch. 12.4 Mathematics of Finance |  |
|  | Ch. 12.5 Mathematical Induction |  |
|  |  |  |
| 5 | Ch. 12.6 Binomial Theorem |  |
|  | Review Chapters 11, 12 |  |
|  |  |  |
| 6 | **Test Chapters 11, 12** |  |
|  | Ch. 2.5 Transformations of Functions |  |
|  |  |  |
| 7 | Ch. 3.2 Polynomial Functions and Their Graphs |  |
|  | Ch. 3.4 Real Zeros of Polynomials |  |
|  | Ch. 3.6 Complex Zeros and the Fundamental Theorem of Algebra |  |
| 8 | Ch. 4.5 Exponential and Logarithmic Equations |  |
|  | Ch. 5.1 The Unit Circle |  |
|  |  |  |
| 9 | Ch. 6.2 Trigonometry of Right Triangles |  |
|  | Ch. 6.5 Law of Sines |  |
|  | Ch. 6.6 Law of Cosines |  |
| 10 | Review Chapters 2 - 6 |  |
|  | **Test Chapters 2 - 6** |  |
|  |  |  |
| 11 | Ch. 7.1 Trigonometric Identities |  |
|  | Ch. 7.2 Addition and Subtraction Formulas |  |
|  |  |  |
| 12 | Ch. 7.3 Double-Angle, Half-Angle, and Product-Sum Formulas |  |
|  | Ch. 7.4 Basic Trigonometric Equations |  |
|  | Ch. 7.5 More Trigonometric Equations |  |
| 13 | Ch. 8.1 Polar Coordinates |  |
|  | Ch. 8.3 Polar Form of Complex Numbers |  |
|  | Ch. 8.4 Plane Curves and Parametric Equations |  |
| 14 | Ch. 11.6 Polar Equations of Conics |  |
|  | Ch. 9.1 Vectors in Two Dimensions |  |
|  | Ch. 9.2 The Dot Product |  |
| 15 | **Test Chapters 7 - 9** |  |
|  | Final Exam Review |  |
|  |  |  |
| 16 | **Final Exam** |  |
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**Lone Star College-University Park Campus and System Policies**

**Academic Integrity**

The Lone Star College System upholds the core values of learning: honesty, respect, fairness, and accountability. The system promotes the importance of personal and academic honesty. The system embraces the belief that all learners – students, faculty, staff and administrators – will act with integrity and honesty and must produce their own work and give appropriate credit to the work of others. Fabrication of sources, cheating, or unauthorized collaboration is not permitted on any work submitted within the system.

The consequences for academic dishonesty are determined by the professor, or the professor and academic dean, or the professor and chief student services officer and can include but are not limited to:

1. Having additional class requirements imposed,
2. Receiving a grade of zero or “F” for an exam or assignment,
3. Receiving a grade of “F” for the course,
4. Being withdrawn from the course or program,
5. Being expelled from the college system.

**Student Behavior Expectations**

Students are expected to conduct themselves appropriately while on College property or in an online environment. Students may receive disciplinary actionup to and including suspension, if they violate System or College rules, disrupt classes, or interfere with the opportunity of others to obtain an education. Students who pose a threat to the safety of others will be subject to immediate withdrawal from the classroom,campus environment, and/or online environment, as well as face subsequent criminal charges, as appropriate. Please refer to the Student Code of Conduct located online at <http://www.lonestar.edu/student-responsibilities.htm> for additional information.

**Americans with Disabilities Act Statement**

Lone Star College-University Park is dedicated to providing the least restrictive environment for all students. We promote equity in academic access through the implementation of reasonable accommodations as required by the Vocational Rehabilitation Act of 1973, Title V, Section 504 and the Americans with Disabilities Act of 1990 (ADA) which will enable students with disabilities to participate in and benefit from all post-secondary educational activities.

Disability Services is located on the LSC University Park campus in building 13, Suite 200. You may contact Disability Services at the following number: 281.401.5370. Additional information may be accessed online at the following URL: <http://www.lonestar.edu/disability-services.htm>

**Campus Safety and Security**

Lone Star College System is committed to maintaining the safety of the students, faculty, staff, and guests while visiting one of our campuses.  See <http://www.lonestar.edu/safety-nh.htm> for details.

Register at <http://www.lonestar.edu/12803.htm> to receive emergency notifications. In the event of an emergency, contact the police at 5911.

**Computer Virus Protection**

Computer viruses are, unfortunately, a fact of life. Using flash drives on more than one computer creates the possibility of infecting additional computers and flash drives with computer viruses. This exposes college computers, personal computers, and any other computers to potentially damaging viruses. The college has aggressive anti-virus procedures in place to protect its computers, but cannot guarantee that a virus might not temporarily infect one of its machines. It is your responsibility to protect all computers under your control and use and ensure that each flash drive you use, wherever you use it, has been scanned with anti-virus software.

**Equal Opportunity Statement**

It is the policy of the Lone Star College System to provide equal employment, admission and educational opportunities without regard to race, color, creed, national origin, gender, age, veteran's status, sexual orientation, or disability.

Lone Star Colleges strive to provide an excellent learning environment free from harassment or intimidation directed at any person’s race, color, creed, national origin, gender, age, veteran's status, sexual orientation, or disability. Any form of harassment will not be tolerated.

**FERPA**

The academic, financial, and non-directory information on your student account is confidential and protected by the Family Educational Rights & Privacy Act (FERPA). LSCS cannot release certain information to another person without your written authorization. The Authorization to Release Student Information Form can be found at <http://www.lonestar.edu/departments/admissions/ARC-011_FERPA_Privacy_Request.pdf>.

**Internet and E-mail**

LSCS provides computing and network resources. You are encouraged to use the computers, software packages, and electronic mail (e-mail) for educational or System-related activities and to facilitate the efficient exchange of useful information. The equipment, software, and network capacities provided through the district computer services are the property of the System. Use of the equipment and networks is to comport with the policies and procedures of the System and access may be denied to any student who fails to comply with the System’s policies and procedures regarding its use.

Access to the System’s e-mail and similar electronic communications systems are a privilege and certain responsibilities accompany that privilege. All users are expected to demonstrate the same level of ethical and professional manner, as is required in face-to-face or written communications. Threatening, anonymous, or forged messages will be treated as a violation of this policy.

**Software Piracy**

Law strictly prohibits unauthorized copying of software purchased by Lone Star College-University Park for use in laboratories. Lone Star College-University Park administration will take appropriate disciplinary action against anyone violating copyright laws.

**Evaluation of Instruction**

Lone Star College-University Park is committed to student success. As part of its’ institutional effectiveness efforts, our instructors are assessed in several ways. For the continuous improvement of our instruction, all students are required to provide input for each course they take each semester using the Course Evaluations Questionnaire, which can be accessed online for each course. This occurs approximately half way through your course and your instructor will provide you more information on this process. Once you evaluate your course, print and turn in the receipt of completion to your instructor. The college deans review these evaluations each semester. The deans and/or department chairs may visit each instructor’s class at some time during the semester to observe the instructional environment being provided and complete an assessment of the instructor.