MATH 1434, PRECALCULUS MATHEMATICS
Fall Semester, 2014
Mathematics Department, Dr. Evelyn Potter, Department Chair

COURSE DESCRIPTION

Sets, relations, functions, roots of polynomial equations, trigonometry, and analytic geometry. This course may not be counted as part of the mathematics major. This course includes one semester hour credit for laboratory sessions.

COURSE SEQUENCE IN CURRICULUM

This course should be taken by students who have completed MATH 1301 or two years of high This course may be used to fulfill the mathematics requirement for Smith College. It may also be used to demonstrate math proficiency **provided the student earns a grade of C or higher**. It may not be counted as a part of the mathematics major except by students obtaining teacher certification. To be counted as part of a mathematics major or to satisfy a program requirement for another major, the student must earn a grade of C or higher.

PRE-REQUISITE INFORMATION

MATH 1313 and MATH 1323 or a satisfactory score on a departmental placement examination

INSTRUCTOR INFORMATION

Name: Dr. Jared Painter
E-mail: jpainter@hbu.edu
Office Phone: 281-649-3215
Office Location: S107A
Office Hours: TBA
Web Page Address, Web Board, ListServ: Blackboard

LEARNING RESOURCES

Course Text: <u>Precalculus: Mathematics: for Calculus</u>, 6th ed., by Stewart, Redlin, and Watson, Brooks/Cole Publishing Company, 2012.
Laboratory Text   None
Supplementary Text: Student Solution Manual (optional)
Other Required Materials: A scientific calculator is required. A Webassign access code (bundled with the textbook) is required.

COURSE OBJECTIVES

<u>Purpose of the course:</u>

Mathematics 1434 serves as an introductory level math course designed to fill in gaps in students' backgrounds and prepare students for calculus by concentrating on functional notation, inequalities, graphical techniques for functions and conics, special functions including trig. functions, log and exponential, as well as complex numbers. Additional topics include mathematical induction, sequences and series, and binomial expansion. MATH 1434 may not be counted as part of the mathematics major except by students seeking teacher certification.

<u>Aims for the course:</u>

To prepare students for more advanced courses in mathematics, especially calculus.

On completion of this course, students should be able to:

1. perform algebraic operations with real and complex numbers.
2. solve simple polynomial, rational, trigonometric, and logarithmic equations and inequalities.
3. use a calculator to evaluate algebraic, trigonometric, and logarithmic functions.
4. draw graphs of polynomial, rational, trigonometric, and logarithmic equations in two variables.
5. use functional notation and find the domain and range of a function.
6. solve both right and oblique triangles using trigonometric functions.
7. know basic trigonometric identities and be able to use them to prove more complex identities.
8. recognize the equations of basic conic sections (circles, parabolas, ellipses, and hyperbolas), find their essential features, and graph them.
9. convert between rectangular and polar coordinates and plot graphs of polar curves.
10. solve systems of linear equations.
11. use a computer algebra system (such as Maple) to draw graphs and perform basic algebraic manipulations.

RELATION TO DEPARTMENTAL GOALS AND PURPOSES

The Mathematics/Physics Department "...will offer an academically rigorous, undergraduate curriculum in classical and modern mathematics. The curriculum will prepare students majoring in mathematics and mathematical studies for careers and further education in mathematics and will encourage a lifetime of learning."

"...will provide academically rigorous and modern courses in mathematics to support other programs at the University."

"...will offer courses to enable all graduates of the University to become mathematically literate and develop useful skills in mathematics."

"...will provide the appropriate administrative processes, facilities, research experiences, and faculty to achieve the goals stated above."

RELATION TO COLLEGE GOALS AND PURPOSES

"...to prepare students for careers and further education in the natural sciences and mathematics in a nurturing Christian environment. The College will also serve the HBU community by providing science and mathematics classes that empower HBU students to meet the goals and requirements of their field of study and enrich their liberal arts education."

RELATION TO THE PURPOSE STATEMENT OF THE UNIVERSITY

University mission and purpose statement from the Houston Baptist University Catalog, 2009-2010: "...to provide a learning experience that instills in students a passion for academic, spiritual, and professional excellence as a result of our central confession, "Jesus Christ is Lord"

"...Committed to providing a responsible and intellectually stimulating environment that:

- fosters spiritual maturity, strength of character, and moral virtue as the foundation for successful living

- develops professional behaviors and personal characteristics for life-long learning and service to God and to the community

- meets the changing needs of the community and society

- remains faithful to the **'Nature of the Institution'** statement"

"...Promotes learning, scholarship, creative endeavor, and service".

ATTENDANCE

Please see the official Attendance Policy in the HBU Classroom Policy on Blackboard. Students missing more than 25% of the class will be given a failing grade.

Students missing more than 25% of the class (more than 18 class meetings, lecture and lab combined) will be given a failing grade. Any student missing more than 5 class periods (lecture and lab combined) will have 1 point per additional class period missed deducted from their final grade. Additionally, you will be given one absence if you are late to class three times.

ACADEMIC ACCOMODATIONS

Students needing learning accommodations should inform the professor immediately and consult the Academic Accommodations section of the HBU Classroom Policy posted on Blackboard.

COURSE REQUIREMENTS & GRADE SCALE

Course requirements:

Each student will take three exams during the semester and a final exam. Each of the exams will be comprehensive. In addition there will be online homework assignments on Webassign and weekly lab assignments. Students are expected to participate during class and lab sessions.
Students must create their own Webassign account for this class and must purchase Webassign access if not bundled with the textbook. To create a Webassign account browse to www.webassign.net and click "I have a class key" in the Account Login area, you will then be prompted to enter your class. Fill in the rest of the required information to setup your account.

Grading standards:

Course grading is as follows:

Homework, Lab, and Participation – 25%
Three Regular Exams – 45%
Final Exam – 30%

The grading scale is:

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

PROFICIENCIES:

Technology component:

Laboratory sessions requiring Maple are required.   A scientific calculator without an equation solver will be required for certain sections covered. **Note: Graphing calculators will not be allowed on any exams.**

Designated essay/writing component:

Some homework problems require essay-type answers.

Reading component:

Students are required to read the textbook. Daily reading assignments will be given and short quizzes will be given at the beginning of each class meeting to ensure that students have completed the reading assignment. Students are also responsible for all assigned material even if it is not covered in class.

Oral communication component:

Students are required to make oral presentations of assigned topics. Class participation is one component used to determine a student's grade.

Mathematics component:

Entire course.

Critical thinking component:

Students are required to read, understand, and analyze problems, develop solution strategies, implement strategies to solve the problem, then interpret and analyze the results.

LATE WORK & TEST POLICY

Late work:

Late homework will not be accepted NO EXCEPTIONS. Two Webassign homework assignments and one of the lab assignments will be dropped at the end of the semester.

Missed tests:

No make-up exams will be given, unless you have a verifiable excused absence. **If you will have a verifiable excused absence on the day of a scheduled exam, you must schedule a make-up exam at least one week prior to the exams.**

EVALUATION

Method of student appraisal of faculty:

Students will be given an opportunity to appraise the professor by completing the IDEA Faculty Evaluation Questionnaire, and/or the COSM course evaluation at the end of the semester. The instructor, the department chairman and dean will review the responses of the students after the completion of the course.

Method of evaluating student response to course:

Students will be given an opportunity to describe their response to the course by completing the IDEA Faculty Evaluation Questionnaire and/or the COSM course Evaluation at the end of the course. The instructor, the department chairman and dean will review the responses of the students after the completion of the course.

LABORATORY DRESS CODE

Does not apply to this course.

LABORATORY CONDUCT AND SAFETY

When working in the computer lab you are required to be respectful and work on the assignments or problems given to you. This is not a time to check your email, post of Facebook, browse the Web, etc. If I see that you are consistently doing tasks other than working on what has been assigned, you will lose participation points for lab meetings.

LAPTOP/TABLET/CELL PHONE POLICY

Unless the assignment or class work requires the use of personal technology all laptops, tablets, and cell phones should be put away during class. If you wish to use your tablet or laptop to take notes then you must obtain permission from the instructor to do so. **All cell phones must be put away and be on silent by the time class starts.** Students using their cell phone during class will have their phone confiscated until class is over.

TOPICAL OUTLINE - *include table, calendar, or topical outline with dates*

Topics Covered:

Course Outline:

Week 1 (Aug 25):	2.1-2.3
Week 2 (Sep 1):	2.4-2.6
Week 3 (Sep 8):	2.7, 3.1-3.2
Week 4 (Sep 15):	3.3-3.6 **– Test 1**
Week 5 (Sep 22):	3.7, 10.1, 10.2
Week 6 (Sept 29):	10.7, 4.1-4.3
Week 7 (Oct 6):	4.4-4.6
Week 8 (Oct 13):	5.1-5.3
Week 9 (Oct 20):	5.4-5.5 **– Test 2**
Week 10 (Oct 27):	6.1-6.3
Week 11 (Nov 3):	6.4-6.6
Week 12 (Nov 10):	7.1-7.3
Week 13 (Nov 17):	7.4-7.5 - Test 3
Week 14 (Nov 24):	11.1-11.2 **(Thanksgiving Week)**
Week 15 (Dec 1):	11.3 – Final Exam Review

The content of this outline and the attached schedule are subject to change at the discretion of the professor.

Student Signature – I have read and understand the syllabus for this class. I understand that the content of this syllabus and the topical outline are subject to change at the discretion of the professor. I have read and understand the HBU Classroom Policy posted on Black Board. **I promise to uphold the Code of Academic Integrity at Houston Baptist University and will not tolerate its violation by others**.