Utica High School

Trigonometry and Pre-Calculus (2015-2016)

Mr. White (205)

Course Description

The course concentrates on understanding the 6 trigonometric functions, their graphs and practical applications during the first semester. Second semester is spent enhancing algebra skills with a deeper understanding of functions and their graphs, rational expressions, logarithms and inverse relationships.

Grading Policy

Each student's 9-week grade will be determined by the following criteria:

* Homework 20%
* Quizzes 30%
* Tests 50%

Grading Scale:

90 – 100 = A
80 – 89 = B
70 – 79 = C
60 – 69 = D
0 – 59 = F

Class Rules:

Stay organized, stay on top of your homework, ask questions, seek help when needed, keep your eye on the goal: be ready for AP Calculus!

Class Procedures

1. Keep your notebook organized and up to date. (notes and assigments)
2. Focus during class discussion, complete the homework, bring questions to each class.
3. Class time is an opportunity to seek further explanations on homework problems.
4. Solutions to homework will be given, so students can check their own work and then ask questions regarding concerns.

Attendance

Tardiness: Students are expected to arrive on time for class. A student who has been tardy to class for a third time in a grading period will receive a lunch detention and will be reported to the office. The fourth tardy receives a Wednesday detention. A fifth tardy in a grading period receives a referral to the office for a Saturday School, In-School Suspension, or Suspension.

Absences: Make up work due to an excused absence must be made up promptly. The time allotted for makeup work shall not exceed one day more than the period of

absence. **It is the responsibility of the pupil to arrange for and to complete the necessary work.** Work missed trough truancy or unexcused absence cannot be accepted for credit.

Homework Policy

- Assignments must be completed in pencil in your notebook / binder and SHOW ALL WORK. Homework questions should be considered practice quiz/test questions.
- Place a STAR next to problems that you don't understand, so you can seek clarification during class time.
- Outside of class, watch the video tutorials and compare your solutions to the answer key provided
- Since all homework solutions are provided, students are expected to "grade" their own work and seek help during or outside of class, however students will still receive a homework grade.

Quizzes and Tests

- Quizzes and Tests "prove" that you've mastered the topics and you're ready to move on
- Retakes must be scheduled with Mr. White and you MUST show evidence of completing additional work before doing the retake.

Cheating

- Cheating includes: plagiarism, copying someone else's work or allowing someone to copy your work.
- Cheating includes copying answers from the internet
- Cheating includes copying answers from the back of the book
- First offense receives a zero on the assignment, quiz or test.
- Second Offense will be reported to the office and disciplinary action will take place.

Cell Phone / iPad Policies

- No games are played in this room.
- No cell phones or messaging in this room, except for academic-related
- Detentions and referral to office for infractions

Denial of Credit Policy

* **Full-year course**: Any student who accumulates more than sixteen (16) incidents per class of non-professional absences in a year-long course, excused or unexcused will receive a zero (0) for that class period, for that day and every day in excess of the sixteen (16) days.

Materials

- Pencils, binder with paper, TI-83+ or higher calculator
- iPads are integral to this course, so they must be charged and ready for each day.

Course Outline

NOTE: Assignments will be WORKSHEETS and dynamic activities available through Moodle unless otherwise noted.

Part I: Trigonometry

Unit 1 Trigonometric Functions

Days (Estimate)	Section(s)	Topic	Special Assignments
2	1	Angles	(QUIZ Section 1)
2	2	Angle Relationships and Similar Triangles	(QUIZ Section 2)
4	3	Trig Functions	(QUIZ Section 3)
4	4	Using the Definitions of the Trig Functions, Pythagorean/Quotient Identities	(QUIZ Section 4)
2		Review and Testing	**Unit 1 Test**
14	Total Days		

Unit 2 Acute Angles and Right Triangles

Days (Estimate)	Section(s)	Topic	Special Assignments
4	1	Trig Functions of Acute Angles, reference angle values	(QUIZ Section 1)
3	2	Trig Functions of non-acute angles	(QUIZ Section 2)
1	3	Finding Trig Values using a Calculator	(QUIZ Section 3)
2	4	Solving Right Triangles, Angles of Depression/Elevation	(QUIZ Section 4)
3	5	Applications of Right Triangles and Trig	(QUIZ Section 5)
2		Review and Testing	**Unit 2 Test**
15	Total Days		

Unit 3 Radian Measure and Circular Functions

Days (Estimate)	Section(s)	Topic	Special Assignments
3	1	Radian Measure	(QUIZ Section 1)
2	2	Applications of Radian Measure	(QUIZ Section 2)
4	3	Unit Circle, Circular Functions	(QUIZ Section 3)
3	4	Linear and Angular Speed	(QUIZ Section 4)
2		Review and Testing	**Unit 3 Test**
14	Total Days		

Unit 4 Graphs of the Sine and Cosine Functions

Days (Estimate)	Section(s)	Topic	Special Assignments
4	1	Graphs of Sine and Cosine, Period, Amplitude	(QUIZ Section 1)
3	2	Translations of Sine and Cosine	(QUIZ Section 2)
2	3	Graphs of Tangent and Cotangent	(QUIZ Section 3)
2	4	Graphs of Secant and Cosecant	(QUIZ Section 4)
3	5	Harmonic Motion	(QUIZ Section 5)
2		Review and Testing	**Unit 4 Test**
16	Total Days		

Unit 5 Trig Identities

Days (Estimate)	Section(s)	Topic	Special Assignments
3	1	Fundamental Identities	(QUIZ Section 1)
5	2	Verifying Identities	(QUIZ Section 2)
2	3	Sum and Difference Identities for Cosine	(QUIZ Section 3)
2	4	Sum and Difference Identities for Sin/Tan	(QUIZ Section 4)
2	5	Double Angle Identities	(QUIZ Section 5)
2	6	Half-Angle Identities	(QUIZ Section 6)
2		Review and Testing	**Unit 5 Test**
18	Total Days		

Total Number of Days for Part I (Trigonometry): 77 Days

Part 2: Pre-Calculus

Unit 1 Prerequisites

Days (Estimate)	Section(s)	Topic	Special Assignments
2	1	Real Numbers, Interval Notation, Exponents	(QUIZ Section 1)
2	2	Cartesian Coordinate System, Absolute Value, Distance/Midpoint Formulas, Equation of Circle, Applications	(QUIZ Section 2)
3	3	Linear Equations and Inequalities	(QUIZ Section 3)
3	4	Lines in the Plane	(QUIZ Section 4)
2	5	Solving equations graphically, numerically, and Algebraically	(QUIZ Section 5)
2	6	Solving inequalities algebraically and graphically	(QUIZ Section 6)
2		Review and Testing	**Unit 1 Test**
15	Total Days		

Unit 2 Rational Expressions

Days (Estimate)	Section(s)	Topic	Special Assignments
1	1	Fraction Review	
4	2	Rational Expressions (Add/Sub)	(QUIZ Section 2)
2	3	Rational Expressions (Mult/Divide)	(QUIZ Section 3)
4	4	Solving Rational Equations	(QUIZ Section 4)
2		Review and Testing	**Unit 2 Test**
13	Total Days		

Unit 3 Functions and Graphs (Part I)

Days (Estimate)	Section(s)	Topic	Special Assignments
3	1	Modeling and Equation Solving	(QUIZ Section 1)
4	2	Functions and Their Properties, Domain, Range, Continuity, Increasing/Decreasing, Boundedness, Extrema, Symmetry	(QUIZ Section 2)
4	3	Limits, Horizontal Asymptotes, End Behavior	(QUIZ Section 3)
5	4	Logarithms / Exponental equations/ Logistic Growth/Decay	(QUIZ Section 4)
2		Review and Testing	**Unit 3 Test**
18	Total Days		

Unit 4 Functions and Graphs (Part II)

Days (Estimate)	Section(s)	Topic	Special Assignments
2	5	12 Basic Functions	(QUIZ Section 5)
3	6	Composite and Implicit Functions	(QUIZ Section 6)
3	7	Parametric Relations and Inverses	(QUIZ Section 7)
2	8	Transformations	(QUIZ Section 8)
3	9	Modeling with Functions	(QUIZ Section 9)
2		Review and Testing	**Unit 4 Test**
15	Total Days		

Unit 5 Polynomial, Power and Rational Functions

Days (Estimate)	Section(s)	Topic	Special Assignments
2	1	Linear and Quadratic Functions and Modeling, Free-fall motion	(QUIZ Section 1)
2	2	Power Functions	(QUIZ Section 2)
3	3	Polynomial and Higher Degree, Fundamental Th of Algebra	(QUIZ Section 3)
3	4	Real Zeros, Long and Synthetic Division	(QUIZ Section 4)
3	5	Graphs of Rational Functions	(QUIZ Section 5)
3		Solving Inequalities, Sign Charts	
2		Review and Testing	**Unit 5 Test**
18	Total Days		

Total Number of Days for Part II (Pre-Calculus): 79 Days