HEALTH CAREERS ACADEMY HIGH SCHOOL

PRECALCULUS
Course Syllabus 2016-2017

This course is a bridge between Algebra II and higher level mathematics courses. Topics covered in this course include; trigonometry, analytic geometry, function analysis, matrices, complex numbers, polar coordinates and vectors. Students will learn how to solve problems algebraically, numerically, graphically and verbally. Graphing calculators are used to visualize a variety of elementary functions. This course is intended to prepare students for the calculus sequence, starting in high school or in college. Topics covered in this course will help students prepare for the SAT, ACT and other college entrance exams.

TEXTBOOK: Advanced Mathematical Concepts: Precalculus with Applications
Holliday, Cuevas, Carter, Marks, and McClure
Glencoe

MATERIALS: Students should bring the following materials to class with them each day:

- ✓ Paper (Binder Paper and Graph Paper)
- ✓ Pens, Pencils, and Highlighters
- ✓ Spiral notebook
- ✓ Three Ring Notebook with dividers (Divider Sections include: Warm-Ups, Notes, Classwork, Homework, and Tests & Quizzes)
- ✓ Calculator (a graphing calculator is recommended)
- ✓ 1-4 Dry Erase Markers and Dry Erase Eraser (An old sock works well)

GRADING DISTRIBUTION FOR EACH SEMESTER:

CATEGORY	*PERCENT*
CLASS WORK	5%
HOMEWORK	5%
PRN	5%
QUIZZES	25%
TESTS	50%
FINAL/PROJECT	10%

GRADING SCALE:

A+	100% or Above	C	71%-76%
A	92%-99%	C-	67%-70%
A-	90%-91%	F	66% and Below
B+	88%-89%		
B	81%-87%		
B-	79%-80%		
C+	77%-78%		

CLASSWORK:

This will include warm-ups, group work, explorations and exit tickets for each section. Lesson portfolios will also be a part of this category.

HOMEWORK:

Homework will be assigned every day. Homework is to help students practice the material covered in class. Homework will be collected every Friday at the beginning of class. To receive full credit all homework must have the following items listed in the upper right Corner of the paper.

- ✓ Full Name
- ✓ Date
- ✓ Period
- ✓ Assignment #
- ✓ Section #
- ✓ Page #
- ✓ Problem #s

Your paper must also have **an answer column** on the right side of the paper.

LESSON PORTFOLIOS:

Before each lesson, students will be required to complete a lesson portfolio. The purpose of the portfolio is to prepare students for the upcoming lesson by having students gather information about the lesson. Each lesson portfolio will have the following elements:

1. Lesson Section and Title
2. Lesson Objectives
3. Essential Question (Leave Blank. We will write it together in class)
4. Definitions, theorems and formulas
5. Write down at least three questions you have about the lesson (you can have more).

Must have it in that order!

PRN: PRN is an academic support class where students can work on homework from any class; review for tests; and utilize the internet as a resource to get help for any class. All students are required to participate in *I Can Learn* every Tuesday from 1:30 – 2:15. *I Can Learn* is an online Math program that will help to support students for academic success in Math.

QUIZZES:

A quiz will be given after each section. Each quiz will cover material that was lectured on one or two days prior to the quiz. Each quiz will take about 10 to 20 minutes to take. The 3-5 lowest quizzes will be dropped at the end of each semester. Students who have an excused absence will have two days to make up their quiz. Students will need to schedule a time with Mrs. Hunter to come in after school to make up any quiz they missed. If a student does not make up a missed quiz, the score will be changed to zero after the end of the second day.

TESTS:

A test will be given at the end of each chapter. There are some chapters where two tests will be given because there is so much material in the chapter. Students who receive 86% and below will have to make test corrections (format to follow); and will be allowed to retake a different test of the same concepts if desired. The better score will be the final score.

FINAL EXAMS/PROJECT:

There will be a cumulative final examination or a project given at the end of each semester. The first semester final will cover chapters 1-5 and the second semester final will cover chapters 6-9, 13 and 14. The projects will be given at a later date.

Support:

Students who need help with particular problems or topics may receive help from the following places:

- ✓ **Mrs. Hunter:**
  I am available after school Tuesday through Thursday for tutoring in the Math Lab, Rm. 26 from 3:00 p.m. – 4:00 p.m. Students/Parents may call me or email during the afternoon and evening until 9:00 PM to ask questions or get clarification about the material covered in class.
  Cell # (209) 639-1720
  Email: mhunter@stocktonusd.net

- ✓ **Khan Academy:**
  Khan academy is a free website where students can watch videos and work on practice problem from topics covered in class. Each student needs to setup an account to use this service; students can use their Gmail or Facebook to sign up.
  www.khamacademy.org

- ✓ **Math Lab**
  Students may drop in after school to receive help. Math Lab is located in room 26.

- ✓ **You-Tube:**
  You-Tube is a great free website where students can watch videos about topics/concepts covered in class.

I encourage students to take advantage of these opportunities and resources to ensure academic success.

EXPECTATIONS AND RULES:

- Be on time to class. You are tardy if you are not in your assigned seat before the tardy bell rings.
- Attend class daily. Clear all absences with attendance.
- Bring all necessary supplies to class.
- Be cooperative and respectful to the teacher, other students, and yourself.
- No food or drinks other than water in class.
- Turn off and put away all electronic devices.
- Be on Task.
- Work quietly in class.
- Care about the quality of your work. (All assignments should be neat and well thought out)
- Follow School Rules
- Have **FUN** learning Math!

Please return the bottom portion of this form signed by you and a parent/guardian. Please keep the remaining Syllabus in your binder at all times to refer to for future reference.

I have read and understand the rules and expectations for Mrs. Hunter's Class.

_____	_____	_____	_____
Printed Student Name	Student Signature	Date	Period

_____	_____	_____
Printed Parent Name	Parent Signature	Date

_____	_____	_____
Parent's Email Address	Parent's Work Number	Parent's Cell Number

Parent/Student Comments: _____

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COURSE OUTLINE:

Date	Section #	Description
Tue. Aug. 9		**First Day of School**
Wed. Aug. 10		Map Testing
Thr. Aug. 11		Map Testing
Fri. Aug. 12	1-1	Functions and Relations
Mon. Aug. 15	1-1	Continued
Tue. Aug. 16	1-2	Composition of Functions
Wed. Aug. 17	1-2	Continued
Thr. Aug. 18	1-3	Graphing Linear Equations
Fri. Aug. 19	1-3	Continued
Mon. Aug. 22	1-4	Writing Linear Equations
Tue. Aug. 23	1-4	Continued
Wed. Aug. 24	1-5	Writing Equations of Parallel and perpendicular lines
Thr. Aug. 25	1-5	Continued
Fri. Aug. 26	1-7	Graphing Piecewise Functions
Mon. Aug. 29	1-7	Continued
Tue. Aug. 30	1-8	Graphing Linear Inequalities
Wed. Aug. 31	1-8	Continued
Thr. Sept. 1		Review
Fri. Sept. 2	**Test 1**	**Chapter 1**
Mon. Sept. 5		**Labor Day Holiday**
Tue. Sept. 6	2-1	Solving Systems of Equations in Two Variables
Wed. Sept. 7	2-1	Continued
Thr. Sept. 8	2-2	Solving Systems of Equations in Three Variables
Fri. Sept. 9	2-2	Continued
Mon. Sept. 12	2-2	Continued
Tue. Sept. 13	2-6	Solving Systems of Linear Inequalities
Wed. Sept. 14	2-6	Continued
Thr. Sept. 15	2-7	Linear Programming
Fri. Sept. 16	2-7	Continued
Mon. Sept. 19	2-7	Continued
Tue. Sept. 20		Review
Wed. Sept. 21		Review
Thr. Sept. 22	**Test 2**	**Systems of Equations and Inequalities**

Date	Section #	Description
Fri. Sept. 23		Continued
Mon. Sept. 26	2-3	Modeling Real World Data with Matrices
Tue. Sept. 27	2-3	Continued
Wed. Sept. 28	2-4	Modeling Motion with Matrices
Thr. Sept. 29	2-4	Continued
Fri. Sept. 30	2-5	Determinants and Multiplicative Inverses
Mon. Oct. 3	2-5	Continued
Tue. Oct. 4		Supplemental
Wed. Oct. 5		Review
Thr. Oct. 6	**Test 3**	**Matrices**
Fri. Oct. 7		Continued
Mon Oct 10 to Fri Oct 14		**Fall Break**
Mon. Oct. 17		
Tue. Oct. 18		
Wed. Oct. 19	9-5	Simplifying Complex Numbers
Thr. Oct. 20	9-5	Continued
Fri. Oct. 21	4-1	Polynomial Functions
Mon. Oct. 24	4-1	Continued
Tue. Oct. 25	4-1	Continued
Wed. Oct. 26	4-2	Quadratic Equations
Thr. Oct. 27	4-2	Continued
Fri. Oct. 28	4-3	The Remainder and Factor Theorem
Mon. Oct. 31	4-3	Continued
Tue. Nov. 1	4-4	The Rational Root Theorem
Wed. Nov. 2	4-4	Continued
Thr. Nov. 3	4-6	Rational Equations and Inequalities
Fri. Nov. 4	4-6	Continued
Mon. Nov. 7	4-7	Radical Equations and Inequalities
Tue. Nov. 8	4-7	Continued
Wed. Nov. 9		Review
Thr. Nov. 10	**Test 4**	**Polynomial Functions**
Fri. Nov. 11		**Veteran's Day Holiday**
Mon. Nov. 14	5-1	Angles and Degree Measure
Tue. Nov. 15	5-1	Continued
Wed. Nov. 16	6-1	Angles and Radian Measure
Thr. Nov. 17	6-1	Continued
Fri. Nov. 18		Review
Mon. Nov. 21 to Fri. Nov. 25		**Thanksgiving Break**
Mon Nov 28	5-2	Trigonometric Ratios in Right Triangles
Tue Nov 29	5-2	Continued
Wed Nov 30	5-3	Trigonometric Function on the Unit Circle
Thu Dec 01	5-3	Continued
Fri Dec 02	5-3	Continued
Mon Dec 05	5-4	Applying Trigonometric Functions
Tue Dec 06	5-4	Continued

Date	Section #	Description
Wed Dec 07		Review
Thu Dec 08	**Test 5**	**Trigonometry and the Unit Circle**
Fri Dec 09		Continued
Mon Dec 12	5-5	Solving Right Triangles
Tue Dec 13	5-5	Continued
Wed Dec 14	5-6	The Law of Sines
Thu Dec 15	5-6	Continued
Fri Dec 16	5-7	The Ambiguous Case for the Law of Sines
Mon. Dec. 19 to Mon. Jan. 2		**Winter Break**
Tue Jan 03	5-7	Continued
Wed Jan 04	5-7	Continued
Thu Jan 05	5-8	The Law of Cosines
Fri Jan 06	5-8	Continued
Mon Jan 09		Review
Tue Jan 10	**Test 6**	**Trigonometry and Triangles**
Wed Jan 11		Review
Thu Jan 12		**First Semester Final periods (1-3)**
Fri Jan 13		**First Semester Final Periods (4-6)**
Mon Jan 16		**Martin Luther King Holiday**
Tue Jan 17	6-3	Graphing Sine and Cosine Functions
Wed Jan 18	6-3	Continued
Thu Jan 19	6-3	Continued
Fri Jan 20	6-4	Amplitude and Period of Sine and Cosine Functions
Mon Jan 23	6-4	Continued
Tue Jan 24	6-4	Continued
Wed Jan 25	6-5	Translations of Sine and Cosine Functions
Thu Jan 26	6-5	Continued
Fri Jan 27	6-5	Continued
Mon Jan 30	6-6	Modeling Real World Date with Sinusoidal Functions
Tue Jan 31	6-6	Continued
Wed Feb 01	6-7	Graphing Other Trigonometric Functions
Thu Feb 02	6-7	Continued
Fri Feb 03	6-7	Continued
Mon Feb 06	6-8	Trigonometric Inverses and Their Graphs
Tue Feb 07	6-8	Continued
Wed Feb 08	6-8	Continued
Thu Feb 09		Review
Fri Feb 10	**Test 1**	**Graph of Trigonometric Functions**
Mon Feb 13		**Lincoln's Birthday Holiday**
Tue Feb 14	7-1	Basic Trigonometric Identities
Wed Feb 15	7-1	Continued
Thu Feb 16	7-2	Verifying Trigonometric Identities
Fri Feb 17	7-2	Continued
Mon Feb 20		**President's Day Holiday**
Tue Feb 21	7-2	Continued
Wed Feb 22	7-2	Continued

Date	Section #	Description
Thu Feb 23	7-3	Sum and Difference Identities
Fri Feb 24	7-3	Continued
Mon Feb 27	7-4	Double-Angle and Half-Angle Identities
Tue Feb 28	7-4	Continued
Wed Mar 01	7-5	Solving Trigonometric Equations
Thu Mar 02	7-5	Continued
Fri Mar 03		Review
Mon Mar 06		Review
Tue Mar 07	**Test 2**	**Verifying Trigonometric Identities**
Wed Mar 08		Review
Thu Mar 09	**Test 3**	**Using Trigonometric Identities and Solving Trigonometric Equations**
Fri Mar 10		Continued
Mon Mar 13	8-2	Algebraic Vectors
Tue Mar 14	8-2	Vectors in Three Dimensions
Wed Mar 15	8-3	Continued
Thu Mar 16	8-4	Perpendicular Vectors
Fri Mar 17	8-4	Continued
Mon Mar 20 to Fri. Mar. 24		**Spring Break**
Mon Mar 27		Review
Tue Mar 28	**Test 4**	**Vectors**
Wed Mar 29	9-1	Polar Coordinates
Thu Mar 30	9-1	Continued
Fri Mar 31	9-2	Graphs of Polar Equations
Mon Apr 03	9-2	Continued
Tue Apr 04	9-3	Polar and Rectangular Coordinates
Wed Apr 05	9-3	Continued
Thu Apr 06	9-4	Polar Form of a Linear Equation
Fri Apr 07	9-6	The Complex Plane and Polar Form of Complex Numbers
Mon Apr 10	9-6	Continued
Tue Apr 11	9-7	Products and Quotients of Complex Numbers in Polar Form
Wed Apr 12	9-7	Continued
Thu Apr 13	9-8	Powers and Roots of Complex Numbers in Polar Form
Fri Apr 14	9-8	Continued
Mon. Apr. 17		**Easter Holiday**
Tue Apr 18		Review
Wed Apr 19		**SBAC**
Thu Apr 20		**SBAC**
Fri Apr 21	**Test 5**	**Polar Form and Complex Numbers**
Mon Apr 24	13-1	Permutations and Combinations
Tue Apr 25	13-1	Continued
Wed Apr 26	13-1	Continued
Thu Apr 27	13-2	Permutations with Repetitions and Circular Permutations
Fri Apr 28	13-2	Continued
Mon May 01	13-3	Probability and Odds
Tue May 02	13-3	Continued

Date	Section #	Description
Wed May 03	13-4	Probability of Compound Events
Thu May 04	13-4	Continued
Fri May 05	13-4	Continued
Mon May 08	13-5	Conditional probability
Tue May 09	13-5	Continued
Wed May 10	13-5	Continued
Thu May 11	13-6	Binomial Probability
Fri May 12	13-6	Continued
Mon May 15	14-1	The Frequency Distribution
Tue May 16	14-1	Continued
Wed May 17	14-2	Measures of Central Tendency
Thu May 18	14-2	Continued
Fri May 19	14-3	measures of Variability
Mon May 22	14-3	Continued
Tue May 23		Review
Wed May 24		Review
Thu May 25	**Test 6**	**Statistics and Probability**
Fri May 26		Presentations
Mon May 29		**Memorial Day Holiday**
Tue May 30		**Presentations**
Wed May 31		**Second Semester Final Periods (1-3)**
Thu Jun 01		**Second Semester Final Periods (4-6)**

All time frames are approximate and may change according to students' learning. Extra handouts, projects, quizzes, or instruction added later may affect the amount of time needed to complete a topic.

EXPECTATIONS AND RULES:

1. Students are expected to come to class every day, and be in their seat when the bell rings ready to start work.

2. All excused absences it is your responsibility to make up the work that you missed.

3. Academic Honesty - students are expected to turn their own work. Plagiarism of any kind will not be tolerated.

4. Students are expected to bring their textbooks, paper, pen, pencil, and calculator to class with them every day.

5. Students are expected to complete all work on time and in a neatly manner.

6. Students are expected to be respectful of other students and their property. This also includes school property.

7. No eating or drinking in class.

8. No grooming, you look marvelous.

9. All electronic devices should be turned off and put away. Students who have these items out during class run the risk of having them confiscated.

10. Students are expected to obey all school and classroom rules.