1. **COURSE NUMBER, TITLE, UNITS AND PRINCIPAL/DEPARTMENT APPROVED DESCRIPTION**

| Trigonometry (Two semesters; 5 units each semester; 10 units total) |

2. **GENERAL INFORMATION**

| Term and year: | Fall 2015 and Spring 2016 |
| Instructor: | Vicki Feliz-Smith |
| Class Room: | T-9 |
| Phone number: | 433-5200 x 1809 |
| E-mail address: | Vicki-feliz-smith@scusd.edu |

3. **TEXTBOOKS AND/OR RECOMMENDED OR REQUIRED READINGS**

| Trigonometry by Hayden and Hall, Prentice Hall 1990 |

4. **GENERAL OVERVIEW**

According to the California Trigonometry Standards, “Trigonometry uses the techniques that students have previously learned from the study of algebra and geometry. The trigonometric functions studied are defined geometrically rather than in terms of algebraic equations. Facility with these functions as well as the ability to prove basic identities regarding them is especially important for students intending to study calculus, more advanced mathematics, physics and other sciences and engineering in college.”

5. **COURSE OBJECTIVES**

The following sequence by textbook chapter identifies the major units making up the Trigonometry curriculum.

Ch 1 Trigonometric Functions  
Ch 2 Graphing Trigonometric Functions  
Ch 3 Right Triangle Trigonometry and Basic Identities  
Ch 4 Oblique Triangles  
Ch 5 Trigonometric Identities  
Ch 6 Inverse Trigonometric Functions  
Ch 7 Complex Numbers  
Ch 8 Exponential and Logarithmic Functions  
Ch 9 Sequence and Series
Students will acquire and demonstrate knowledge of the concepts, definitions and properties required to meet the Trigonometry mathematics standards. Students will develop critical thinking and decision-making skills by connecting concepts to practical applications needed to be productive members of society. All students are expected to demonstrate the following objectives:

- Students should be able to work with functions represented in a variety of ways: graphical, numerical, analytical, or verbal. Students should understand the connections among these representations.
- Students should be able to communicate mathematics both orally and in well-written sentences and should be able to explain solutions to problems.
- Students should be able to model a written description of a physical situation with a function.
- Students should be able to use technology (graphing calculators and graphing software) to help solve problems, experiment, interpret results, and verify conclusions.
- Students should be able to determine the reasonableness of solutions, including sign, size, relative accuracy, and units of measurement.

6. COURSE REQUIREMENTS, ATTENDANCE AND SPECIFIC GRADING POLICY

Grades are based on demonstrated mastery of concepts and development of skills, not effort or potential. A major component of your grade is determined by your results on assessments. Progress reports are available on the District Web site in Infinite Campus.

Assignments are a guide as to what is most important and what will be tested. Assignments are given daily. Students not actively engaged in assignments and study will most likely fail the class. Planning your study should include a minimum hour of quality time daily. There is no weighting applied to any score.

The math dept. complies with district protocol that can be viewed at www.scusd.edu.

7. DESCRIPTION OF MAJOR ACTIVITIES/EXERCISES/PROJECTS

Instructional Strategies and Activities Include:
- Lecture on concepts and techniques
- Presentation/modeling of examples and strategies
- Large and small group discussions and explorations
- Reading and writing assignments
- Practice and learning through classwork and homework assignments
- Applications to demonstrate relevance and extend learning
- Active student engagement in group work and discussions
- Quizzes, and tests to encourage and monitor learning
8. GENERAL STATEMENTS

Students are expected to be familiar with and adhere to policies in the JFKHS Student Handbook. The student handbook identifies student rights, responsibilities, discipline rules and consequences, behavior, and other information for academic and social success. Student ignorance does not provide justification for failure to follow the information contained in the student handbook. All material submitted can be retained by the instructor. If you desire copies of any submitted materials, then duplicate copies for yourself before submission. The Principal reserves the right to modify and/or change the course syllabus as needed during the course.

CLASSROOM BEHAVIOR EXPECTATIONS: The following summarize important expectations for classroom behavior.

- Students are expected to attend class every day.
- Students are expected to complete all assignments on time.
- Students are expected to be seated and prepared for learning when the bell rings.
- Students are expected to treat their classmates with respect; no put downs of any kind.
- Students are expected to actively and positively participate in class.
- Students are expected to demonstrate personal responsibility, honesty, and integrity in all of their actions.

CLASSROOM RULES: The following few rules guide classroom behavior and activity.

- Follow teacher directions and requests immediately.
- Keep your hands, feet, and other objects to yourself.
- Remain seated unless you have permission to move about the classroom.

Eating (food, candy, etc.) and gum chewing are not permitted in the classroom.

ELECTRONIC DEVICES: Electronics (music devices, cell phones, etc.) are to be turned completely off and away with exceptions for appropriate cell phone usage as discuss during class.

COURSE REQUIREMENTS, ATTENDANCE AND GRADING POLICY

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<thead>
<tr>
<th>Grading Scale</th>
<th>Percentage</th>
<th>Grade</th>
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<tbody>
<tr>
<td>90% - 100%</td>
<td>A</td>
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<td>80% - 89.9%</td>
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<td>70% - 79.9%</td>
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<td>60% - 69.9%</td>
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<td>0 % - 59.9%</td>
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<thead>
<tr>
<th>60%</th>
<th>Tests, group tests, quizzes, other assessments, common unit exams</th>
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<tbody>
<tr>
<td>15%</td>
<td>Final Exam</td>
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<tr>
<td>25%</td>
<td>Participation in all class activities, and completion of assignments, warm-ups, practice, etc.</td>
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<tr>
<td>&lt;=2%</td>
<td>Extra Credit added participation category</td>
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HOMEWORK AND STUDY: Homework and student study is an essential part of your education. Any student expecting to do well in this course should carefully read the text and do all the assigned work.

TESTS/EXAMS: A comprehensive test to measure students’ mastery of skills and concepts will be given, as a minimum, at the end of each chapter/unit; mid-chapter tests and quizzes will also be given based on chapter content. Students will be informed of the comprehensive test date at least a week in advance. There will be at most one opportunity for a redemption test per semester. Absences before the test date do not excuse a student from taking the test as scheduled.

CHARACTERISTICS OF QUALITY WORK: Using the following guidelines will help you master the Trigonometry objectives. Quality work has the following characteristics.

- Is complete with full solution. That is, all problems are completed or at least attempted.
- The supporting work for each problem is shown completely using proper algebraic conventions and notations.
- The work is done neatly and accurately.

CHARACTERISTICS OF A SUCCESSFUL STUDENT: Students that are successful in school generally exhibit the following traits:

- Is consistently present for class in body and spirit.
- Desires to learn the material presented.
- Uses time wisely.
- Does practice work, study, and test preparation faithfully.
- Asks thoughtful questions during class.
- Actively participates in class and gets extra help when needed.

ACADEMIC DISHONESTY: Academic dishonesty is considered a serious offense in my class. Students cheating will receive a zero grade for that assignment. I encourage collaboration on all assignments but I expect the work you hand in (assignments, exam/quiz, etc.) to be your own.

CALCULATOR USE AND EXPECTATION: A scientific calculator (preferably TI models) is necessary for this course. A graphing calculator is not necessary for this class, but students will be introduced to them in class. The calculator is a tool to aid in learning concepts, not just a means of computation. Calculator (not graphing calculators) use will be allowed on tests and quizzes during the year.

MATERIALS: Students will need pencils and a dedicated binder or tabbed section of a binder and loose leaf paper. No work will be accepted that is bound in or torn from a notebook, and spiral bound notebooks are not allowed out in class ever. Also, students should also have a ruler, compass, and protractor, but these are available for in class use.
Outline of class sessions:

Ch 1 (14 days)
1.1 Functions and the Coordinate Plane
1.2 The Distance Formula
1.3 Angles in the Coordinate Plane
1.4 Angle Measures in Degrees and Radians
1.5 Applications: Angular and Linear Velocity
1.6 Cosine and Sine Functions
1.7 Trig Functions
1.8 Trig Functions and Special Angles
1.9 Evaluating Trig Functions

Ch 2 (16 days)
2.1 Period Functions and Symmetry
2.2 Graphs of Sine and Cosine Functions
2.3 Amplitude and Period
2.4 Phase Shift and Vertical Shift
2.5 Graphing by Addition of Ordinates
2.6 Graphs of the Tangent and Cotangent Functions
2.7 Graphs of the Secant and Cosecant Functions
2.8 Application: Harmonic Motion

Ch 3 (16 days)
3.1 Solving Right Triangles
3.2 Application: Angles of Elevation and Depression
3.3 Applications
3.4 Fundamental Identities
3.5 Equivalent Trigonometric Expressions
3.6 Proving Identities
3.7 Graphical Representation of Identities

Ch 4 (16 days)
4.1 The Law of Signs
4.2 The Law of Signs: The Ambiguous Case
4.3 The Law of Cosines
4.4 The Law of Tangents
4.5 The Area of Triangles
4.6 Heron's Formula
4.7 Vectors in a Plane

Ch 5 (16 days)
5.1 Cosine: Sum and Difference Identities
5.2 Sine: Sum and Difference Identities
5.3 Tangent: Sum and Difference Identities
5.4 Double Angle Identities
5.5 Half-Angle Identities
5.6 Product/Sum Identities
| Ch 6 (16 days)                                                                 |
| 6.1 Inverse Relations and Functions                                          |
| 6.2 The Inverse Sine and Cosine Functions                                    |
| 6.3 Other Inverse Trigonometric Functions                                   |
| 6.4 Solving Trigonometric Equations: Using Special Angles                   |
| 6.5 Trigonometric Equations: Approximate Solutions                         |

| Ch 7 (16 days)                                                                 |
| 7.1 Polar Coordinates                                                        |
| 7.2 Graphs of Polar Equations                                                 |
| 7.3 Sums and Differences of Complex Numbers                                  |
| 7.4 Products and Quotients of Complex Numbers                                |
| 7.5 Complex Numbers in Polar and Rectangular Forms                           |
| 7.6 Multiplying and Dividing Complex Numbers in Polar Form                    |
| 7.7 De Moivre’s Theorem                                                       |
| 7.8 Roots of Complex Numbers                                                 |

| Ch 8 (13 days)                                                                 |
| 8.1 Real Exponents                                                            |
| 8.2 Exponential Functions                                                     |
| 8.3 Logarithmic Functions                                                     |
| 8.4 Properties of Logarithms                                                  |
| 8.5 Evaluating Logarithms                                                    |
| 8.6 Applications                                                              |

| Ch 9 (12 days)                                                                 |
| 9.1 Arithmetic Sequences                                                      |
| 9.2 Geometric Sequences                                                       |
| 9.3 Arithmetic Series                                                         |
| 9.4 Geometric Series                                                          |
| 9.5 Infinite Geometric Series                                                 |
| 9.6 Power Series and Trigonometric Functions                                 |
First Assignment for Trigonometry

1) Read the syllabus for this class and share with your parents/guardians.
2) Print this page only or copy it by hand on binder paper.
3) Complete this page and turn it in for credit.

I have read and understand the course requirements for Trigonometry and will do my best to uphold them.

Student name___________________________

Signature______________________________Date______________

Parent or Guardian name___________________________

Signature______________________________Date______________

Comments or Notes: