Honors Pre-Calculus   *2018-2019*

Casteel High School

2018/19 Dual Enrollment Course numbers (Fall/ Spring):
1st Hour: MAT 152 #_26871___/MAT 182 #_20223_____
2nd Hour: MAT 152 #_26872___/ MAT 182 #_20224_____
3rd Hour: MAT 152 #_26999___/ MAT 182 #_20335_____
5th Hour: MAT 152 #_28256___/ MAT 182 #_20945_____
6th Hour: MAT 152 #_28895___/ MAT 182 #_21451_____
Credits: 3 credits/ 3 credits

Instructor: Suzanne Djariri   **Class Periods:** 1st, 2nd, 3rd ,5th & 6th Hour
Phone: 480-424-8326   **Room:** J206
Instructor E-mail: djariri.suzanne@cusd80.com

Textbook: Pre-Calculus Graphical, Numerical, Algebraic, Ninth Edition
         Demana, Waits, Foley, Kennedy, Bock

In-class Instruction
Dual Enrollment – MAT152 (Fall) College Algebra/Functions   Chandler Gilbert Community College
         – MAT182 (Spring) Plane Trigonometry   Chandler Gilbert Community College

Course Description & Pre-requisites:

A pre-calculus course combines topics from college algebra and trigonometry. This course is an intense math course, and it will go FAST. Students who need a slower pace should immediately consider taking College Algebra prior to taking MAT152/182.
College Algebra/Functions (first semester)
Analysis and interpretation of the behavior and nature of functions including polynomial, rational, exponential, logarithmic, power, absolute value, and piecewise-defined functions; systems of equations, modeling and solving real world problems. Additional topics may include matrices, combinatorics, sequences and series, and conics.
Plane Trigonometry (second semester)
A study of measures of angles, properties of graphs of trigonometric functions, fundamental identities, addition and half-angle formulas, inverse trigonometric functions, solutions of trigonometric equations, complex numbers and properties of triangle solution.

Prerequisites: Grade of "B" or better in MAT120 or MAT122 or an equivalent class at another college or university OR a satisfactory score on a placement test. It is strongly recommended that students have some knowledge of trigonometry. In order take second semester for dual credit, you must earn a C or better in first semester.

Calculator Usage:

A graphing calculator is required and mandatory! You must have access to a TI-84 or TI-84 Plus calculator. At times, you may need a calculator that does not have graphing capability or trig functions. Be prepared to bring a four-function (+,-,×,÷)calculator during these times. These calculators should be brought to class daily and used at home during homework.

Computer and Internet Usage:

Computer and Internet access is required for this course! You must have access to a computer and internet to complete homework problems, and some quizzes online. You will also need to be responsible for checking my school website and your infinite campus grades regularly.

What will you learn in this course? Here is the list of course competencies, followed by a course outline

1.   Find real and complex zeros of polynomial functions. (I-II)
2.   Calculate and interpret average rate of change. (I-III)
3.   Determine the inverse of a relation when represented numerically, analytically, or graphically. (I-IV)
4.   Analyze and interpret the behavior of functions, including domain and range, end behavior, increasing and decreasing intervals, extrema, asymptotic behavior, and symmetry. (I-V)
5.   Determine whether a function is one-to-one when represented numerically, analytically, or graphically. (I-V)
6.   Determine whether a relation is a function when represented numerically, analytically, or graphically. (I-V)
7.   Graph polynomial, rational, exponential, logarithmic, power, absolute value, piecewise-defined, and trigonometric functions. (I-V)
8.   Perform operations, including compositions, on functions and state the domain of the resulting function. (I-V)
9.   Solve polynomial, rational, exponential, logarithmic, and trigonometric equations analytically and graphically. (I-V)
10.   Use transformations to graph functions. (I-V)
11.   Communicate process and results in written and verbal format. (I-IX)
12.   Compare alternative solution strategies. (I-IX)
13.   Justify and interpret solutions to application problems. (I-IX)
14.   Model and solve real-world problems. (I-IX)
15.   Read and interpret quantitative information when presented numerically, analytically, or graphically. (I-IX)
16.   Find and evaluate inverse trigonometric functions. (IV-V)
17.   Use the definition and properties of trigonometric functions and formulas to solve application problems. (IV-VII)
18.   Verify trigonometric identities. (VI)

Pre-Calculus
CollegeAlgebra/Functions

I   Behavior and Nature of Functions

       A   Graphic, numeric, and algebraic representations

       B   Characteristics of basic functions

       C   Properties, operations, transformations, and inverses of functions

II   Polynomial and Rational Functions

       A   Polynomial and rational equations

       B   Graphs of polynomial and rational functions

       C   Applications

III   Exponential and Logarithmic Functions

       A   Properties of logarithms

       B   Exponential and logarithmic equations

       C   Graphs of exponential and logarithmic functions

       D   Applications

IV   Departments must include one or more of the following topics in their courses

       A   Matrices, including solving systems of three linear equations in three variables.

       B   Combinatorics   C   Sequences and series   D   Conics

Plane Trigonometry

V   Definition and Properties of Trigonometric Functions

       A   Acute and general angles

       B   Right-triangle trigonometry

       C   Graphs of trigonometric functions

       D   Inverse trigonometric functions

       E   Applications

VI   Circular Functions and The Unit Circle

    A   Radian measure

    B   Length of an arc

    C   Area of a sector

    D   Linear and angular velocity

VII   Trigonometric Identities

    A   Fundamental Identities

    B   Sum and difference identities

    C   Double-angle identities

VIII   Trigonometric Formulas

    A   Law of sines

    B   Law of cosines

    C   Applications

IX   Departments may include one or more of the following topics in their courses

    A   Complex Numbers (Trigonometric Form of Complex Numbers, DeMoivre's

        Theorem, Roots of Complex Numbers)

    B   Vectors (Definitions, Operations, and Applications)

    C   Polar Coordinates, Equations and Graphs

    D   Parametric Equations and Graphs

Tardiness: Attendance will be taken. You are expected to be in your seat with the required materials and working on your warm-up when class begins. We will follow CCHS school policy regarding tardiness.

Absences and Work: You are expected to make up any work missed because of an absence. This may include class work that was taken for a grade. It is **your responsibility** to find out what work was done while you were absent. I will not remind you. You will be given a day for every excused absence day to make up any missed work. After that, no late work will be accepted.

Notes: In this course, your notes will be developed from lectures, classroom activities, discussions and student presentations. A three ring binder is recommended so that you can keep all your papers in order.

Projects: Projects designed to enhance your study of pre-calculus may be assigned. These projects will help to develop your problem solving, critical thinking ability, and communication skills. A rubric for grading will be given at the time of the project. The teacher reserves the right to determine which projects are graded as homework and which projects are graded as an assessment.

Homework: Homework is assigned on a chapter-by-chapter basis. Homework will be assigned daily and graded periodically. Follow directions for each assignment given carefully, and when unsure of what you are expected to do, be sure to ask immediately.

Tests: The goal will be to administer a test at the end of each chapter. For longer chapters, a test may be given halfway through the chapter and at the end of the chapter. The goal of these tests is not to simply assign a grade, but to allow you to show yourself and me how much you have learned and how well you can solve problems and think critically.

Quizzes: Quizzes are given periodically throughout any given chapter. Occasionally, pop quizzes will be given.

Participation: Participation is expected daily. Students will be expected to discuss mathematics, go to the board to solve problems, and work with partners or in groups. Some class activities will be graded for accuracy while others may just result in a completion grade. You may be expected to come in for help during office hours due to low grades, lack of effort, or absenteeism. Your grade will have natural consequences, should you decide not to participate in these expectations.

Expectations, Procedures, and Tips for Success:

- Cell phones and social media have become a serious distraction to learning. There may be times when you may use smart phones for educational purposes. However, if I have not stated that we will be using our cell phones for our lesson, then you must have them put out of sight. The cell phone carrier in the front of the room will be used for students to keep their phones at a distance when necessary. If we are using the cell phone carrier, you will be asked to put your phone in an assigned number at the beginning of class, and the phone will be returned at the end of class.
- Tardiness (being swept), ditching, chronic absenteeism will not be accepted nor tolerated- see below for more on Sweeps and Attendance
- Actively Participate (take notes, ask and answer questions, **be a good team-mate**)
- Come to class prepared (**Do HW nightly**, have questions ready)
- Check Infinite Campus regularly for your grade.
- Treat teachers, peers, visitors, and property with respect.
- Be PRO active not RE active.
- Follow all rules and procedures that are outlined in the student handbook.

Learning Reflections: Research has shown that when students go back and reflect on the learning process, the concepts learned can be moved from short to long-term memory, better study skills can be developed, and an honest self-assessment of learning can be done. You will be required to provide a handwritten "Learning Reflection" at least once a quarter. These reflections are taken for a grade, and the grade will be determined based on your understanding and reflection on the quarter's learning targets. Specific examples must be used, along with detail and justifications. These reflections are taken as seriously as assessments. They are yet another form of communication that will illustrate your understanding of Pre-calculus as a series of connected concepts that are part of a much bigger picture.

Grades: (This is subject to change and based on department consensus)

Prior to the final exam, your grade will be determined by the following:

Assessments (Reflections, Quizzes, Tests) 80%

Practice and Engagement (Classwork and Homework) 20%

Final Exam: 20% of the final grade

90%-100% - A, 80%-89.9% - B, 70%-79.9%, C, etc.

Hall Passes:

There is a sign out sheet located in the front of the room. You are to get permission from me first, then sign the sheet and take the hall pass. Only one person is allowed out of the class at a time. You should not use the restroom during instruction, unless it is an absolute emergency. You must have this pass with you while you are out of my class. If you abuse this privilege, you will no longer be able to leave the classroom during class time.

Tutoring & Office Hours: I will be available two days a week after school until 3:15pm. During this time, you may come in to work on homework and ask specific questions about a lesson or topic you may not have fully understood. This time is not for me to re-do a lesson that you may have missed. If you have missed class, you must first borrow notes, use your textbook and other online resources, and try the missed assignment. These hours will be determined soon, and I will post them both on the board and on my school website.

Professional Ethics and Appropriate Behavior: CUSD and CCHS student policy will apply for code of conduct.

Cheating/Plagiarism: Cheating and plagiarism **will not be tolerated** at any time. It is your responsibility to do your own work.   If you are caught cheating a zero will be given on that assignment, your parents/guardians will be notified, and you will be referred to administration.

Honesty/Integrity: Students should not engage in any form of academic dishonesty at any time; including collusion, duplication of work, plagiarism, taking pictures of work from others, and all other forms of cheating. You should ensure that all of the work you submit is authentic and solely your work.

Tests and Quizzes: On test and quiz days all belongings will be placed in the back of the classroom. You will only be allowed a pencil, eraser, scratch paper, and a calculator (if allowed). Absolutely no electronic devices other than a calculator will be allowed during these times.

Chandler Gilbert Community College required information.

STATEMENT REGARDING OUTCOMES AND ASSESSMENT
The faculty and programs at CGCC are dedicated to effective teaching and successful learning with emphasis in the following areas: communication, critical thinking, literacy, and personal development.

Periodically, students will participate in formal and informal assessment activities that will help faculty improve programs and teaching strategies. These activities are designed to facilitate student growth in whatever combination of the above outcomes applies to a course.

STATEMENT REGARDING STUDENTS WITH DISABILITIES

Students with disabilities are required to register for services in the Disability Resources and Services (DRS) office in the Student Center at the beginning of the semester. Do not wait to visit the DRS office if you want support with any CGCC classes. The DRS office will meet with you to determine accommodations based on appropriate documentation. Therefore, faculty members are not authorized to provide or approve any accommodations for students in this class without

written instructions from the DRS office. This must be on file before any accommodation will be provided. You can contact the DRS office at (480) 857-5188.

INFORMATION ON LEARNING CENTER

The CGCC Learning Center's mission is to support students' academic learning by providing free tutoring and resources to reinforce and supplement classroom instruction and to assist CGCC students to achieve academic success. All Learning Center services are free to students currently enrolled at Chandler-Gilbert Community College. At the Pecos Campus, the Learning Center is located on the second floor of the Library, rooms LIB227, LIB228, LIB229 and LIB237. At the Williams Campus, the Learning Center is located in Bridget Hall, rooms BRID114 and BRID115. The Learning Center also provides instructional support resources in the form of videotapes, software, and print materials. For a schedule of tutoring hours, additional information, or assistance, students should contact the Learning Center at (480) 732-7231, or visit our website at http://www.cgc.edu/lc .

STATEMENT CONCERNING PLAGIARISM
Plagiarism is defined as presenting the work of another as one's own. More than four consecutive words from a source other than the writer constitute plagiarism when the source is not clearly identified in appropriate documentation format.

From the *CGCC Student Handbook*:
"Plagiarism includes, but is not limited to, the use of paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgement. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials."

I understand that this syllabus can be changed at any time. You will be given ample notice of any changes during class and through our website (above).

I have read and understand the classroom expectations for Pre-Calculus 2018-2019.

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Student Name (Printed)

_____   _____

Student Signature   **Date**

_____   _____

Parent/Guardian Signature   **Date**