PRE-CALCULUS

CHANDLER/GILBERT COMMUNITY COLLEGE: DUAL ENROLLMENT COURSE

2021 - 2022

Mrs. Jen Backer

Supplies
- A binder
- A writing utensil
- Paper
- A great attitude
- Chromebook

The textbook:
Functions Modeling Change: A Preparation for Calculus

Need Help?

I'm available after school (except on Wednesdays) and during 5th hour.

CONTACT INFO:

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Course Description

The major focus of this course will be the analysis and interpretation of the behavior of functions including linear, quadratic, exponential, logarithmic, polynomial, rational, and trigonometric functions. Also included is the study of algebraic concepts — solving equations; modeling and solving real-world problems — and trigonometric concepts — angle measures, triangle solutions, trigonometric inverses and identities.

TOPICS OUTLINE

1. Linear Functions
2. Functions
3. Transformations of Functions
4. Quadratic Functions
5. Exponential & Logarithmic Functions
6. Polynomial, Power, & Rational Functions
7. Foundations of Trigonometry
8. Trigonometric Functions
9. Trigonometric Equations and Identities
10. Conic Sections

GRADES

The following factors will be used in calculating your semester grade:

- Assignments ~ 20%
  - Homework, lesson guides, in-class practice
- Assessments ~ 80%
  - Quizzes and tests
  - Final exam

THERE IS A 20% DEDUCTION FOR ASSIGNMENTS SUBMITTED LATE

IT IS ESSENTIAL THAT ALL LESSON GUIDES BE COMPLETED ON TIME BEFORE CLASS.

Lesson guides are graded on accuracy. If you don't receive a perfect score, that's okay. We will do further practice in class to reinforce the material, then if you get a 80% (or higher) on the assessment, the grades of any corresponding lesson guide will be changed to 10/10.

What else can you do to raise your grade?
- Complete an Error Analysis of ANY assessment
- Seek help – I'm available after school
- Use my website – www.schultzjen.weebly.com – for links to helpful websites & other resources

Flipped Classroom Approach

In a flipped classroom, students complete a lesson guide in which they watch videos of me teaching the lesson and do some basic practice problems. Class time is utilized for further practice, application, and inquiry.

Advantages:
1. Control over the pace of the lesson. Students that need more time to process the material can pause and replay the videos.
2. Students are no longer practicing in isolation. In class they will have the support of the teacher and their classmates.
3. Frees up class time to practice and explore mathematics.
4. Prevents students from falling behind when absent.

CELL PHONE PARKING LOT

At the beginning of class, "park" your phone in the designated numbered pouch. You can retrieve your phone at the end of class.

THE CELL PHONE PARKING LOT WILL BE USED TO TAKE ATTENDANCE.

EXCEPTIONS WILL BE MADE FOR STUDENTS WITHOUT PHONES. A PARENT/GUARDIAN NEEDS TO INFORM ME WITH EITHER AN EMAIL OR IN WRITING.

Classroom Expectations

A pupil's success in school is his/her responsibility. I am dedicated to helping all students succeed. It is my goal this year to provide a positive and well-structured environment in my classroom. As a teacher, I believe that every student can behave appropriately while in my classroom and that every student has the capability to succeed. I will, however, tolerate no student stopping me from my teaching and/or any student from learning. Your support of the following rules and recommendations will help ensure this environment is present.

- Follow directions the first time given.
- Be on time and prepared for class.
- Be attentive and participatory. Respectfully participate in discussions without profanity, disrespect, or incivility toward the instructor or other students.
- Be respectful of the instructor and other students. There is no talking when others are talking.
- Raise your hand to speak and remain in your desk until you have permission to leave.
- Do not pack up until one minute before the bell.
- Backpacks and purses on the floor, please.

Consequences for failing to meet expectations:

1st offense	2nd offense	3rd offense
Warning	Parent/guardian contacted	Referral

Attendance & Absences

Attendance is an integral part of success in both a child's academic world and life after graduation. When an absence is excused, students are allowed one day for each day absent to submit make-up work.

Students are expected to get any work in advance if they know they will be missing school.

It is the student's responsibility to find out what was missed before or after class, not during class time. Be sure to check Google Classroom for homework and handouts.

All tests and quizzes can be made up by appointment only for EXCUSED absences. For unexcused absences, students will need to use one of their retake options.

GOOGLE CLASSROOM CODE:

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DUAL ENROLLMENT: EARN COLLEGE CREDIT WHILE IN HIGH SCHOOL

You're in the class, why not get credit for it?

Gilbert High: MA410 – Pre-Calculus

CGCC: MAT187 – Pre-Calculus #14882

Eligibility: Unweighted GPA ≥ 3.0 OR ≥ 237 on Accuplacer OR ≥ 22 on ACT Math

Registration Deadline: Sunday, September 12, 2021

Tuition: $85/credit

Time is a major factor here! At CGCC, this course is taught 5 hours a week for 15 weeks; in high school, we have 36 weeks.

CGCC credits transfer to ASU, U of A, NAU, Grand Canyon University and MORE. (Search for transfer pathways partners on the CGCC website for a complete list.)

MAT187 – Pre-Calculus (5 credits)

CGCC OFFICIAL COURSE DESCRIPTION

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. 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, and properties of triangle.

COURSE OBJECTIVES/COMPETENCIES

- ❖ Function Analysis
  - ➢ Analyze & interpret the behavior of functions:
    - ▪ Intercepts, end behavior, increasing & decreasing, extrema, asymptotic behavior, & symmetry
  - ➢ Determine domain & range of functions
  - ➢ Graph functions; transformations of functions
  - ➢ Find real & complex zeros of polynomial functions analytically & graphically
  - ➢ Classify functions by name when represented numerically, analytically, or graphically
- ❖ Equation Solving
  - ➢ Solve polynomial, rational, exponential, logarithmic, and trigonometric equations analytically & graphically
- ❖ Relations/Functions Represented Numerically, Analytically, or Graphically
  - ➢ Determine whether a relation is a function
  - ➢ Determine whether a function is one-to-one
  - ➢ Determine the composition and/or combination of two functions; the inverse of a function
- ❖ Make Sense of Contextual Situations
  - ➢ Calculate and interpret average rate of change
  - ➢ Read and interpret quantitative information when presented numerically, analytically, or graphically
  - ➢ Model and solve real-world problems
  - ➢ Justify and interpret solutions to application problems
  - ➢ Compare alternative solution strategies
  - ➢ Communicate process and results when written in verbal forms
- ❖ Trigonometry
  - ➢ Measure angles in degrees and radians
  - ➢ Find the length of an arc and the area of a sector.
  - ➢ Use the unit circle to define the six trigonometric functions – sine, cosine, tangent, cosecant, secant, and cotangent
  - ➢ Evaluate inverse trigonometric functions
  - ➢ Graph trigonometric functions
  - ➢ Find missing sides and angles of right- and oblique-triangles
  - ➢ Solve trigonometric equations
  - ➢ Verify trigonometric identities

COURSE OUTLINE

- ❖ Behavior & Nature of Functions
  - ➢ Graphic, numeric, and algebraic representations
  - ➢ Characteristics of basic functions
  - ➢ Properties, operations, transformations, and inverses of functions
- ❖ Quadratic, Exponential, Logarithmic, Power, Polynomial, & Rational Functions
  - ➢ Graphs, equations, & applications
- ❖ Trigonometry
  - ➢ The unit circle
  - ➢ Solving right- and oblique-triangles
  - ➢ The six trigonometric functions – sine, cosine, tangent, cosecant, secant, and cotangent
    - ▪ Graphs, equations, and applications
  - ➢ Trigonometric equations & identities
- ❖ Conic Sections
  - ➢ Circles, parabolas, ellipses, & hyperbolas

COURSE REQUIREMENTS & GRADING POLICIES

This course is offered for high school credit or dual enrollment credit with Chandler/Gilbert Community College. High school credit will be earned at the rate of ½ credit per semester (with a grade of "D" or better). Pre-requisite for high school credit: passing grade in Algebra IIB. Dual enrollment credit (5 credits) may be earned at the end of the year after successful completion of the entire course at a grade of "C" or better. (Semester grades are averaged for the final dual enrollment grade.) For dual enrollment credit, students must meet the pre-requisites: a passing grade in Algebra IIB, a satisfactory score on the placement exam and/or exams throughout the course, and must pay the enrollment fees through Chandler/Gilbert Community College at the beginning of the course. See the Chandler/Gilbert Community College catalog for specific details. If you find the need to drop the class and are enrolled for dual credit, make sure you withdraw at both campuses. Funds may not be refunded; call CGCC for details regarding the last date for withdrawal from the course and/or possible refunds.