Course Syllabus

Chandler Unified School District

MAT435 AP Calculus AB

SY 2024-25

Course Overview

Course Description

The rigorous mathematics course is equivalent to a first-semester calculus class at a university. Topics emphasized are differential and integral calculus. This course prepares students for AP examinations to earn a semester of college credit in calculus. Students will use the standards for mathematical practice to engage with the subject matter.

AP/IB/Dual Enrollment

May be offered for Dual Credit.

Prerequisite/Fee(s)

Precalculus or Honors Precalculus

Course Materials

Students are expected to arrive to class on time and should be sitting in their seats when the bell rings. All cell phones and other forms of personal technology are to be put away for the duration of the class period. Students are asked to bring the required materials to class, to be actively engaged during the lesson, and to work on assignments when time permits.

1. Progress Reports: Progress Reports are submitted on Infinite Campus each quarter.
2. Cheating: Cheating is defined as:
   - A. On tests/quizzes
     - i. viewing another student's work
     - ii. talking during a test period
     - iii. helping another student on an evaluation
     - iv. using unauthorized reference materials
     - v. using unauthorized materials on a graphing calculator
     - vi. having a cell phone out during a quiz, test, or exam
   - B. On homework
     - i. copying another student's work
     - ii. turning in another student's work
     - iii. giving your paper to another student
   - C. On group work
     - i. not contributing to the group's effort
     - ii. using the work of another group
     - iii. giving another group your group's work

STUDENTS CAUGHT CHEATING WILL NOT BE GIVEN ANY CREDIT ON THE PARTICULAR ACTIVITY IN QUESTION.

3. The use cell phones, and other listening devices are not permitted during class.

Adopted Resource(s)

Calculus Early Transcendental Function 6th Ed, Larson & Edwards (Cengage) & Calculus of a Single Variable Early Transcendental Functions 6th Ed, Larson & Edwards (Cengage)

**An asterisk indicates a resource containing sexually explicit materials per legislative definitions. CUSD has determined that all the above resources are of exceptional educational value.*

Site and Faculty Information

School name and address:
Perry High School, 1919 E Queen Creek Rd, Gilbert, AZ 85297

Building principal:
Heather Patterson
patterson.heather@cusd80.com

Teacher:
Thomas Rothery Ph.D.
rothery.thomas@cusd80.com
Office hours: 2:15 - 3:00 pm

Course Access

This course is taught in-person at Perry High School. Students will have access to the curriculum and instruction in the classroom. Google Classroom is the primary location for students to access material when absent from classes taught in person.

Help

Academic Support

- Contact the teacher to schedule an appointment during office hours
- Ed Tech support for students, parents/guardians, and community link (cusd80.com/Page/45109)

Mental Health Support

- CUSD mental health support cusd80.com/Domain/10528 or 480-573-8808 (talk or text)
- Suicide & Crisis Lifeline: 9-8-8 hotline
- 24-hour Crisis Line Talk: 602-222-9444, Text: 741-741

Student Conduct, Success, and Responsibilities

Student Handbook

Students must follow the policies and procedures in the Student Handbook. Copies of the handbook can be found at https://www.cusd80.com/Page/533, and printed copies will be provided upon request.

Student Responsibilities

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      vi. having a cell phone out during a quiz, test, or exam

B. On homework
  i. copying another student's work
  ii. turning in another student's work
  iii. giving your paper to another student
C. On group work
  i. not contributing to the group's effort
  ii. using the work of another group
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Late work

Late work is not accepted.

Assessments and Assignments

Students will complete assessments during each unit of study to assess their understanding. At the end of the first and second semesters, students will complete the CUSD Common Final. The Common Final will count for 20% of the student's final semester grade in grades 9-12 and 10% in grades 7-8 (some exceptions may apply at the Junior High level). Common finals will be in ELA, Math, Science, Social Science, and World Language.

Final exams will be given during the CUSD Jr High/High School Early Dismissal days in December and May, as identified on the District Calendar.

If students are requested to participate in a survey, the survey questions will be provided to parents/guardians seven days before student contact.

Grading

Grade Percentage

A	90% - 100%
B	80% - 89%
C	70% - 79%
D	60% - 69%
F	<60%

Quarter grades

1. Tests: Tests will be given at the end of each chapter or unit. Make-ups for absentees will be given during non-class hours and within a number of days' instruction missed. Tests are worth 100 points each.
2. Quizzes: Quizzes will be given with regularity. Make-up quizzes will be given in the same manners as tests. Quizzes are worth 10-50 points each.
3. Homework: Homework will be assigned 4-5 times weekly and will be checked at the beginning of the class period. Homework should be kept separate from notes. Daily homework scores are worth 10 points each. Homework must be completed on loose-leaf paper and must be done in pencil.
4. Projects: Projects will be given throughout the year. They are worth 250 points.
5. Participation: Each student will begin the semester with 50 points. For each day that the student has an unexcused tardy, has an unexcused absence, or forgets his/her materials, 2 points will

be deducted from the original 50 points. At the end of the semester, a score out of 50 points will be averaged into the student's grade.
6. Quarter Grades: The quarter grade will be based on the percent determined by the number of points earned divided by the number of points possible.
Grading Scale:
90-100% A
80-89% B
70-79% C
60-69% D
0-59% F
7. Semester Grade: While quarter grades are given, grades are progressive throughout the duration of the semester. Semester grades are determined by the approximate breakdown (Homework-8%, Quizzes, Tests, and Projects-72%, and the Semester Exam-20%)

Semester grades

Semester grades are calculated using 80/20: A combination of the two quarters accounts for 80% of the semester grade and the final exam accounts for remaining 20%.

Units of study

Units for MAT435 AP Calculus AB

**An asterisk will indicate a unit of study or novel containing sexually explicit materials per legislative definitions.*

Evaluate limits of algebraic functions.
Use the definition to determine continuity of a function.
Use the definition to determine the derivative of algebraic functions.
Use techniques of differentiation on powers, sums, products, quotients, exponential, logarithmic, composite, and implicit functions. Calculate higher order derivatives.
Use the first and second derivatives to determine intervals where a function is increasing, decreasing, concave up, concave down; find points of inflection, relative and absolute extrema; and graph the function.
Use derivatives to solve a variety of application problems including optimization and rates of change with an emphasis in business. Explain the meaning of the derivative in the applications using appropriate units.
Find antiderivatives of polynomials, exponential functions and some rational functions.
Use finite sums to estimate the definite integral of functions defined numerically, graphically, 1 of 5 or analytically. Estimation techniques should include left and right hand sums.
Evaluate indefinite integrals. Use the integration technique of substitution. Use the fundamental Theorem of Calculus to evaluate definite integrals.
Use integration to solve applications problems including area between two curves and consumer and producer surplus. Interpret the meaning of the integral in the applications using appropriate units.

Signature Page - *Please return this page to your student's teacher.*

Chandler Unified School District

MAT435 AP Calculus AB
SY 2024-25

Site: Perry High School
Building Principal: Heather Patterson, patterson.heather@cusd80.com
Teacher: Thomas Rothery, rothery.thomas@cusd80.com

Parent/Guardian

Acknowledgment

Parents/Guardians must specify their approval by selecting "Acknowledge" or "Potential Conflict" for their student's involvement in the units of study. Please note students cannot decline participation in standards-based units. The teacher will reach out regarding options if "Potential Conflict" is selected.

Unit of study	Acknowledge	Potential Conflict
Evaluate limits of algebraic functions.	☐	☐
Use the definition to determine continuity of a function.	☐	☐
Use the definition to determine the derivative of algebraic functions.	☐	☐
Use techniques of differentiation on powers, sums, products, quotients, exponential, logarithmic, composite, and implicit functions. Calculate higher order derivatives.	☐	☐
Use the first and second derivatives to determine intervals where a function is increasing, decreasing, concave up, concave down; find points of inflection, relative and absolute extrema; and graph the function.	☐	☐
Use derivatives to solve a variety of application problems including optimization and rates of change with an emphasis in business. Explain the meaning of the derivative in the applications using appropriate units.	☐	☐
Find antiderivatives of polynomials, exponential functions and some rational functions.	☐	☐
Use finite sums to estimate the definite integral of functions defined numerically, graphically, 1 of 5 or analytically. Estimation techniques should include left and right hand sums.	☐	☐
Evaluate indefinite integrals. Use the integration technique of substitution. Use the fundamental Theorem of Calculus to evaluate definite integrals.	☐	☐
Use integration to solve applications problems including area between two curves and consumer and producer surplus. Interpret the meaning of the integral in the applications using appropriate units.	☐	☐

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By signing and returning this form, the parent/guardian acknowledges they have reviewed the resources and units of the study included in the syllabus.

☐ As the parent/guardian, I understand I may contact the teacher with questions on resources, content, or units of study at any time during the school year and view my student's grades in Infinite Campus.

Student name (printed) _____

Student signature _____

Parent/Guardian name (printed) _____

Parent Signature _____

Date _____

Please return this page to your student's teacher.