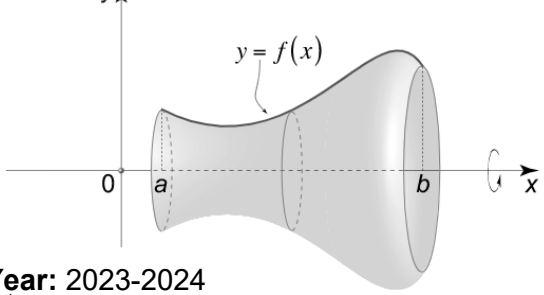
syllabus AP Calculus AB



Campus: Jim Ned High School
Teacher: David Hogan
Email: dhogan@jimned.esc14.net

Year: 2023-2024
Conference: 8:10-9:00
Phone: 325-554-7755

Prerequisites In order to enroll in AP Calculus AB, the student must successfully complete prerequisite courses that include the following topics: algebra, geometry, trigonometry, analytic geometry, and elementary functions.

Course Weighting Advanced courses are weighted by adding ten percent to the semester grade when determining class rank. Weighting is used for class rank determination only. Weighted grades do not appear on report cards or transcripts.

Course Eligibility In order to enroll in an advanced course, the student must achieve a final course average of 80+ in the previous advanced prerequisite (if applicable), not including the ten percent weighting. In order to remain in an advanced course, students must maintain a 75+ average, not including the ten percent weighting.

Course Description: The AP Calculus AB course is the equivalent of a college freshman course for mathematics majors. The course is focused on three big ideas:

Big Idea 1 Change: Using derivatives to describe rates of change of one variable with respect to another or using definite integrals to describe the net change in one variable over an interval of another allows students to understand change in a variety of contexts. It is critical that students grasp the relationship between integration and differentiation as expressed in the Fundamental Theorem of Calculus—a central idea in AP Calculus.

Big Idea 2 Limits: Beginning with a discrete model and then considering the consequences of a limiting case allows us to model real-world behavior and to discover and understand important ideas, definitions, formulas, and theorems in calculus: for example, continuity, differentiation, integration.

Big Idea 3 Analysis of Functions: Calculus allows us to analyze the behaviors of functions by relating limits to differentiation, integration, and infinite series and relating each of these concepts to the others.

Course Outline

- Unit 1: Limits and Continuity
- Unit 2: Differentiation: Definition and Basic Derivative Rules
- Unit 3: Differentiation: Composite, Implicit, and Inverse Functions
- Unit 4: Contextual Applications of Differentiation
- Unit 5: Analytical Applications of Differentiation
- Unit 6: Integration and Accumulation of Change
- Unit 7: Differential Equations
- Unit 8: Applications of Integration

Stay Informed About Grades, Attendance, and Timeline

- Students and parents are expected to subscribe to grade and attendance notifications in Parent Portal.
- Students are expected to regularly monitor Google Classroom communications from the teacher.
- **Important:** It is extremely important that both students and parents communicate with the teacher about grades early and often. Addressing performance concerns near the end of a six-week grading period seldom provides the student an opportunity to recover.

Grades

- **Tests (50%)** Tests consist of multiple choice and short answer questions that resemble the framework of the actual AP test. Tests will assess the student's ability to understand and integrate key facts and concepts from the unit objectives. Tests may not be retaken.
- **Quizzes (30%)** Quizzes will be short, concise assessments of the most recent material. Quizzes will be announced several days prior to administration. Quizzes may not be retaken.
- **Homework (20%)** Homework assignments will be an integral part of the class designed to increase student understanding of topics discussed in class and covered in reading assignments. It is mandatory that students complete all homework assignments and ask questions during class or tutoring about any portion of an assignment that isn't completely understood. Homework quizzes will not be announced. Students will have the opportunity to use written homework as an aide on the quiz. Quizzes may not be retaken.

Tutorials

- Tutorials are available Tuesday – Friday, 7:30 – 8:00am.

Excused Absences and Make-up Work

- **Excused, Expected Absences** If a student is going to be absent from class for an expected, excused absence (school-sponsored activity, medical appointment, etc.), the student is responsible for collecting assignments prior to the absence.
- **Excused, Unexpected Absences** If a student is absent due to an unexpected event (illness, family emergency, etc.), the student is responsible for collecting assignments immediately upon return. Labs may be replaced with an alternate assignment. Due dates will be adjusted accordingly.
- **Unexcused Absences** Assignments missed due to an unexcused absence are not accepted and are assigned a grade of zero. At the teacher's discretion, these assignments may be accepted, given extenuating circumstances.

Expectations

- The teacher and students will arrive to class on time and prepared every day … there is a tremendous amount of material to cover.
- The teacher will engage students during class and students will participate during class.
- Students will complete all reading assignments and homework outside of class.

Policies

- **Academic Integrity:** Cheating of any kind will result in a grade of zero. Most lab work is performed in groups. You may consult with your group during lab time, but must submit original work for the lab.
- **Phones:** Phones may not be visible or audible while in the classroom. Students are expected to have phones turned off during class time. Phones that are seen or heard for any reason whatsoever will be confiscated by the teacher and submitted to the campus office.
- **Chromebooks:** Students are expected to bring the school-issued Chromebook, with sufficient charge, each day. Chromebooks will be used at teacher discretion.
- **Failure to Comply:** Classroom discussion will be an important component of this course. However, a directive is not an invitation to engage in conversation or debate. When given an instruction, if a student fails to comply fully, classroom and/or campus disciplinary measures will be leveraged.