

Course Syllabus

AP Calculus AB:

Instructor: Mr. Falde
Email: daryl.falde@sfcakings.org
Southwest Florida Christian Academy
Room: J202

Textbook:

There are donated textbooks available to be checked out.

Larson, Ron; and Bruce Edwards. *Calculus of a Single Variable: Early Transcendental Functions*. Sixth Edition. Cengage Learning, 2015.

Course Objectives:

Calculus is the mathematics of dynamics and change. Topics include velocities, accelerations, limits, tangent lines, slopes, areas, volumes, distance, curvature, etc.

Good success will be achieved in this course and on the AP Exam by consistently, diligently working to understand the concepts and procedures along with their applications and reviewing them. Students must take personal responsibility in this for high-level achievement.

Successful completion of this course will provide students with a solid foundation of understanding basic calculus and many uses of it. Students will be prepared for further studies in the subject and application of it. All topics listed in the *AP Calculus AB Course Description* are taught, practiced, and evaluated during the course. The students will be able to:

1. Understand connections between and work with functions in the four various mathematical representations: graphical, numerical, analytical, and verbal/written
2. Communicate mathematics both orally and in well-written sentences, including being able to explain one's solutions to problems
3. Model a written description of a physical situation with a function, a differential equation, or an integral
4. Use technology to help solve problems, experiment, interpret results, and verify conjectures
5. Determine the reasonableness of solutions, including sign, size, relative accuracy, and units of measurement
6. Develop an appreciation of calculus as a coherent body of knowledge and as a human accomplishment utilizing God-given talents

The following is a list of topics we cover.

1. Precalculus review
2. Limits and their properties – this provides the foundation for calculus
3. Derivatives and differentiation
 - a. Foundational procedures
 - b. Basic rate-of-change analysis
4. Application of derivatives
 - a. Extremes
 - b. Increasing and decreasing values
 - c. Graph analysis

5. Integrals
 - a. Antiderivatives
 - b. Calculating areas
 - c. Basic analysis rules
6. Application of integrals
 - a. Areas
 - b. Volumes
 - c. Distance
7. L'Hopital's Rule
8. Review and preparation for AP Exam

Course Expectations:

The class will be conducted in a small-group structure with guided learning led by instructor leading to collaborative learning among the class members. Students will then have individual assignments to ensure personal achievement. That personal achievement will be verified on quizzes and tests. AP Exam review questions will be used regularly to develop familiarity with the format and expectations on both the multiple-choice and free-response type questions.

Materials:

1. Pocket folder with paper
2. Pencils and pens
3. Graph paper

Technology:

All high school students are required to have a fully charged, fully functioning laptop in class each day. Cell phones and other tablets are not acceptable devices.

Each student will need to have a graphing calculator. The preferred calculator is the TI 84 (with or without the CE, color enhanced graphs).

Course Grade:

Evaluation during the course includes daily work, projects, quizzes, and tests. Term grades are calculated as 50% from tests and projects, 30% from quizzes, and 20% from assignments and daily work.

Assignments are evaluated as to completeness, orderliness, correct procedure shown, as well as the actual correct answers. Assignments are graded using a 10-point scale. Assignments must be turned in when due for credit (allowing for normal absence make-up credit).

Class Expectations:

I appreciate the cooperation normally shown by students in the classroom. Everyone should enjoy the right to learn – free from unnecessary interruption.

It is necessary that we maintain the following standards as outlined in the student handbook:

Student Expectations

- It is expected that every student will conduct himself in an orderly, courteous manner at all times with prompt and respectful obedience to all school personnel, following all adult direction without comment. If a student questions a teacher's decision, he/she should speak to the teacher privately after class. At that time, he/she should respectfully explain the situation and wait for the teacher's response.
- It is expected that every student will respect the feelings and rights of others. This includes students, teachers, and visitors.
- It is expected that every student will conduct himself in an honest manner, avoiding such actions as lying, stealing, and cheating.
- It is expected that every student will be on time to each class and be prepared with a proper mental attitude and all their necessary materials, books and assigned work.
- It is expected that every student understands that the teacher's desk, computer, and other personal belongings and work area is personal property and will be treated as such.
- It is expected that every student will remain in compliance with the classroom teacher's rules, policies and procedures.

Minor student disruptions during a class period will be dealt with following a 4-step classroom management plan.

1. The student will receive a verbal warning the first time.
2. The student will receive a written warning the second time that will be sent home to the parents via FACTS and a conference may be requested.
3. The teacher will assign a penalty to the student in the form of a detention, written assignment, or other discipline deemed appropriate if there is a third occurrence of discipline issues within a class period.
4. The teacher will refer the student to the Administration if disruption continues.

EXTRA HELP

Help is available Wednesday after school and other times as needed. Make arrangements for help time when you need it.

(Print, sign, and return this page to Mr. Falde by Monday, August 14.)

Teacher: Mr. Falde

Syllabus Acknowledgement: AP Calculus AB

- The syllabus contains important information specific to this course. It is important for parent and student to read and discuss the information.
- We urge you to actively use your FACTS account online as a resource.
- After reading the syllabus, fill out this form and return it to the teacher.

Student name (PRINT) _____

I have read the course syllabus...

(student signature) _____

(parent signature) _____