

## ***Syllabus for Advanced Placement AB Calculus Training***

***Title:*** Advanced Placement AB Calculus

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***Course Type:*** Curriculum development

***Description:*** This course is designed to familiarize participants with the curriculum and course objectives of the Advanced Placement AB Calculus course, and to prepare them to provide their students with materials and methods that will lead to success in the ap examination. Participants will be given an overall understanding of the important concepts of calculus. In addition they will be provided with methods and applications, using a multi-representational approach, to help them become more proficient in their own classrooms. A variety of problems will be assigned that produce interesting solutions to help the student consider solutions “outside the box.” The AP test will be investigated, specifically pointing out the particular things that every teacher should emphasize to their own students.

All participants will be expected to do a prescribed set of homework problems on a daily basis. (There will be opportunity to receive help from the instructor and other participants on a daily basis, also.) Graphing calculators will be used extensively in the solutions of problems, participants should bring their own, if possible. Instruction will be given using the Texas Instruments TI-84 and TI-89 model calculators.

***Credit Hours:*** The course will be offered for 2 semester credits.

***Prerequisites:*** Participants should be certified mathematics teachers.

***Rationale:*** The primary goal of ap training is to prepare students for success in the ap examination.

***Course Objectives:***

Participants will:

1. Explore the topics included in the AB Calculus syllabus to become aware of the skills and processes necessary for students to know.
2. Discuss instructional strategies, and find effective methods of presenting material to enhance student understanding and performance.
3. Develop an understanding of the AP program, and the features involved in AP testing.
4. Learn graphing calculator skills, and discuss how they can be implemented in the ap calculus class.
5. Share teaching ideas, and develop specific teaching examples to use in their class.

***Course Outline:***

- A. Introduction of participants, facilitators. Discussion of the AP program, including equity and access issues.
- B. Introduction to graphing calculator skills necessary in the ap calculus courses.
- C. Completion of problems representative of the material in the AB/BC Calculus course, including the proofs of some of the major theorems.
- D. Discussion of test taking success strategies, exploration of actual test items and their scoring.
- E. Participant presentations/ sharing of classroom strategies.

***Materials:*** Any calculus text for reference, instruction will require overhead projector and chalkboard.

***Assessment Descriptions:***

1. ***Class participation*** Participants are expected to contribute to class discussions, and present solutions to problems in class.
2. ***Problem development.*** Participants will be asked to develop teaching examples (different from the ones used in class) for use in their AB/BC Calculus course.

***Student Grades:*** Satisfactory completion of assessments #1 will result in a grade of B, Successful completion of #2 will result in a grade of A.