

## 2021 Advanced Placement® Calculus AB

### About the AP® Calculus AB Summer Institute

#### Schedule is for 5 days, Monday to Friday.

<b>Morning session</b>	8:30 am - 11:30 am (Eastern Standard Time)
<b>Lunch break</b>	11:30 am - 12:00 noon
<b>Afternoon session</b>	12:00 noon - 3:30 pm

Participants who are *new to the AP Calculus Program* should contact their school administration as soon as possible to ensure that they have been registered on the AP Calculus Course ledger.

They will need to complete the AP Course Audit form in order to gain access to **AP Classroom** and other resources. Go to <https://apcentral.collegeboard.org/courses/ap-calculus-ab>

Two weeks prior to the online workshop, each participant will be provided with directions *to complete an AP Calculus Exam* composed of a multiple-choice and a free-response section. This three-hour mock exam will illustrate the depth and breadth of testable topics and learning objectives that students will need to master as part of the AP course. It will also provide an opportunity for participants to identify their own strengths and weaknesses in applying these concepts. During our workshop, we will discuss the exam design, how to score student responses and determine their AP Score, and strategies to help improve their performance.

Prior to our workshop, teachers and students can access the *Course and Exam Description Handbook*, which provides detailed information about the units, topics and science skills that are integrated throughout the curriculum. It would be beneficial for teachers who are new to the AP program to review the Course Framework of this Handbook prior to our online workshop. A copy can be downloaded at the AB Calculus home page at AP Central.

The daily online workshop will be a blend of synchronous learning **via UGA's Learning Management System (eLearning Commons)** and asynchronous learning using **Zoom**. The ratio of synchronous to asynchronous will be approximately 1:1 or 1:2, which translates into approximately 1.5 to 2 hours of together time and 3 to 4 hours of independent or small-group learning time. The College Board will provide all participants with a Multi-Day Workshop Handbook filled with lessons and activities to help plan and teach the AP course and assess student progress and understanding. Additional teacher-developed best practices will be shared electronically with participants and incorporated into the online learning to provide a wide variety of resources and support for you and your students.

Each morning and afternoon session will start with the synchronous presentation of information offering two-way, real-time video and audio demonstrations, short videos, Q & A, and instructions for the asynchronous time. There will be 2-3 group Zoom sessions each day. Participants will receive sample course outlines with all relevant assignments, quizzes, and unit exams.

For the asynchronous time, participants will have a specified amount of time to complete various tasks independently or in small group breakout sessions, after which time the large group regroup to debrief. Asynchronous learning time will typically include tasks that are focused on identified student challenge areas, based on their performance on past AP exams. This will include utilizing features of the **AP Classroom** to develop lesson plans for reinforcing skill and topic connections. The presenter will be available during asynchronous time to answer questions or to provide additional support. Each day will end with a Teams wrap-up, having the final 15 minutes dedicated to addressing the concerns of new AP teachers and summarizing the activities of the day. This will provide clarity and focus to prepare for the next day's work.

**Each day will have a theme** but expect that the agenda is likely to be revised in order to satisfy the needs of the group.

**Day One:** Preparing to learn and teach remotely  
**Understanding the Course, Curriculum Framework and Exam Format**  
AP Central Resources, College Board Multi-Day Handbook activities  
Limits, 20 Minute Ride, The Derivative

**Day Two:** **Teaching the Course, Lesson Planning and Instructional Strategies**  
Multiple Choice Exam question format and style, test-taking strategies, teaching for understanding  
Derivative rules, more derivative rules, Applications of derivatives  
MVT worksheet, Slope fields, L'Hospital's Rule  
Classroom activities

**Day Three:** **Course Planning and Audit Requirements**  
AP Classroom Unit Progress Checks and Question Bank  
Free-Response Exam question format and style, Rubric Scoring  
Antiderivatives, Definite Integral  $\int$  Riemann Sum

**Day Four:** **Sharing Session and Online Learning Resources**  
AP Central Resources, College Board Multi-Day Handbook activities  
Free-Response Rubric Scoring, test-taking strategies, determining student AP score  
FTC Worksheet, applications of definite integrals, rates and accumulation

**Day Five:** **Assessing Student Progress and Understanding**  
Interpreting the Instructional Planning Report  
**Becoming a Member of the AP Community**  
Pre-AP Calculus Course and Framework  
Exploring various CB Course Resources  
Accessing AP Calculus Resources

#### **What to bring:**

Items you will need for the week:

- A laptop or desktop computer with video and audio access & storage device
- Stable and reliable internet connection
- graphing calculator (TI-83/84)
- current textbook
- a notebook and pencils/pens for taking notes
- questions and concerns to address

#### **Instructor:**

**Larry Peterson** earned his B.S. in Mathematics Education from Utah State University and his M. Ed. from Weber State University. He has taught AP Calculus since 1976. Larry's experience with Advanced Placement ranges from Calculus to Computer Science to Statistics. He has been a reader for the AP Calculus exam for since 1993, serving as a Table Leader for six years. In 2003 and 2004 Larry was also a Question Leader. He is also a regular presenter at state, regional, national, and international conventions in mathematics and technology and has published materials for both AP Calculus and AP Statistics.

Larry currently serves on the Instructional Design Team for AP Calculus. In addition to his work as a consultant for The College Board and The National Math and Science Initiative, Larry served a six-year term as a member of the Board of Directors of the National Board for Professional Teaching Standards. His awards include: Milken Educator, Tandy Scholar, Disney American Teacher Award winner, and Utah Teacher of the Year.

If you have any questions or concerns prior to the APSI please email the presenter; Larry Peterson at [larrypeterson@lgcy.com](mailto:larrypeterson@lgcy.com)