

## Course Description

Prerequisite: AP courses are offered to those who are highly motivated and capable of succeeding in college level courses as indicated by earning an A (90% - 100%) in a related course (preferably a related Honors course) the previous year. Students must have already completed AP Pre-Calculus, Pre-Calculus Honors or Calculus. Any exception must be approved by the course's teacher and an administrator. Enrollees are required to complete a summer assignment prior to the first class meeting.

AP Calculus BC is roughly equivalent to a first two semesters of college calculus and focuses on topics in differential and integral calculus. Emphasis is placed on understanding the concepts of calculus and providing experience with its methods and applications. The course uses a multi-representational approach to Calculus, with concepts, results and problems being expressed graphically, numerically, analytically and verbally. Technology is used to reinforce the relationships among the multiple representations of functions, to confirm written work, to implement experimentation, and to assist in interpreting results. Through unifying themes of derivatives, integrals, limits, approximation, and applications and modeling, the course becomes a cohesive whole rather than a collection of unrelated topics.

Those who successfully complete the AP calculus BC exam earn six college credits. Be aware that the score required varies from one college or university to another. Because the course covers two semesters of college calculus in two semesters of high school, be aware that the pace of this course is extremely rigorous. We will be covering as many as four separate objectives in one class period. Success in the class will require a significant amount of time outside of the classroom.

## Text

Calculus Graphical, Numerical, Algebraic AP Edition 6<sup>th</sup> Edition ©2020, Demana, Waits, Kennedy, Bressoud, Boardman

\*This textbook is listed due to our accreditation through College Board. Students are not required to purchase this book. We will create our own textbook by completing assignments in our "Handbook". It follows the topics of the course in order from beginning to end and is an excellent resource.

## Additional Resources

- As a result of class notes and homework we will be creating a "Handbook". It will follow the "CED" (AP course and exam description.) Homework assignments in Blackbaud will use the term "Handbook".
- Everything will always be available on Blackbaud, assignments, videos, and class notes. Some assignments will be uploaded documents. Others will be completed online.
- AP Classroom: this will be a resource for additional practice, homework assignments, and reviews. This is one of our most important (even if not always the most prominent) resources because the questions on this platform will be the closest to those on the AP Exam.
- There are almost infinitely many resources available online. Everyone should familiarize themselves with several "CAS" (computer algebra system) sites like wolframalpha, desmos, mathway etc.

## **Required Materials and Supplies**

- TI-84 or TI Inspire Calculator
- Charged Laptop
- Pencil (or black pen)
- Notebook or binder
- AP classroom

## **Timeline/Units of Study**

### *Semester 1*

- Unit 1 Limits and Continuity 4-7% of AP Exam
- Unit 2 Differentiation: Definition and Basic Derivative Rules 4-7% of AP Exam
- Unit 3 Differentiation: Composite, Implicit, and Inverse Functions 4-7% of AP Exam
- Unit 4 Contextual Applications of Differentiation 6-9% of AP Exam
- Unit 5 Analytical Applications of Differentiation 8-11% of AP Exam
- Unit 6 Integration and Accumulation of Change 17-20% of AP Exam

### *Semester 2*

- Unit 7 Differential Equations 6-9% of AP
- Unit 8 Applications of Integration 6-9% of AP Exam
- Unit 9 Parametric Equations, Polar coordinates 11-12% of AP Exam
- Unit 10 Infinite sequences and series 17-18% of AP Exam
- Review
- AP Exam
- Additional Topics

## Grading Policy

At IMG Academy, the following plus-minus weighted system is used to determine grades.

Grade	Percentage	Regular GPA Points	Honors GPA Points	AP GPA Points
A+	98-100	4.33	4.83	5.33
A	93-97	4.00	4.50	5.00
A-	90-92	3.67	4.17	4.67
B+	87-89	3.33	3.83	4.33
B	83-86	3.00	3.50	4.00
B-	80-82	2.67	3.17	3.67
C+	77-79	2.33	2.83	3.33
C	73-76	2.00	2.50	3.00
C-	70-72	1.67	2.17	2.67
D+	67-69	1.33	1.83	2.33
D	63-66	1.00	1.50	2.00
D-	60-62	0.67	1.17	1.67
F	0-59	0.00	0.00	0.00

I = Incomplete  
WP = Withdraw/Passing  
WF = Withdraw/Failing

Advanced Placement (AP): additional GPA weight of 1.00 (Note: Advanced Placement weight and transcript designation do not appear until completion of course AP exam.) Grades of F receive no additional weight and will remain 0.00.

**It is mandatory that all AP students sit for, and, give a good faith effort on the national exam in May. If however, this does not happen the following will be implemented:**

- **The AP course will still be designated on the transcript HOWEVER**
- **The GPA point calculation will only reflect an honors course (drop from 1.0 to .5)**

### Grades will be calculated as follows:

The gradebook is divided into three major categories, learning pursuits (60%), evidence of learning (20%), and semester summative assessment (20%).

- **Learning Pursuits** evaluates a student's progress throughout the learning process, such as classwork, reinforcement activities, quizzes, reflections, peer reviews, workshop participation, etc.
- **Evidence of Learning** evaluates a student's mastery of course material, such as tests, essays, projects, etc.
- **Semester Summative Assessment** evaluates a student's mastery of course material cumulatively at the end of each semester.

- Grades will be posted within 72 hours of the due date for all assignments and assessments. You have one week after you receive feedback on an assignment to voice questions and concerns.

- Homework will be graded on accuracy. Corrections may be made once for each homework assignment for full credit. All other assignments will be graded for accuracy.

**Justification of answers/Work on math assignments:**

Full credit will not be given on assignments where students do not show their work or justification of an answer.

**Test Corrections and Retakes:**

Test corrections and retakes will not be allowed on any test. The teacher has the discretion to allow corrections on other formative assignments but may not allow them on tests.

**Dress Code:**

Students out of Dress Code will be sent to their AA manager. Any work missed while they are changing will receive a zero (0).

**Phones:**

At the beginning of class, all students must silence their phones and put them in the place designated by their teacher. They may not access their phones until class has ended.

**Homework and Late Work**

Homework is due at the beginning of each class. Homework turned in after the beginning of class is considered late. Late work will receive the following credit,

50% if turned in by the end of the next class.

0% after the end of the class immediately following the due date (i.e. if Homework is due on Monday, it needs to be turned in before the end of class on Wednesday to receive 50% credit. After that, the assignment will receive a zero.

**Make Up Work for excused absences:**

Students are given one class for each class missed to make up work due to an excused absence. It is important to keep in mind that current work will still be due. Due to the cumulative nature of Mathematics, students are encouraged to complete any assignments they can while they are away. Teachers will post assignments, notes and videos on Blackbaud to ensure students have the resources needed to continue progress.

**Unexcused absences:**

Student may not receive any credits for assignments given/due during and Unexcused Absence.

**Classroom Policies and Procedures**

- Participation: All students will be expected to participate in class in various ways (such as asking and answering questions, presenting problems at the board, class activities, etc.) and may be graded on this participation. This participation is an important part of the class setting. As such, unwelcoming or disrespectful attitudes or words towards other students who are participating will not be tolerated.
- Absence: When possible, students should arrange a plan for absences using a sheet from Academic Affairs. If you have an excused absence due to unforeseen circumstance, you should discuss making up work with Mr. Bradshaw as soon as possible via email, or outside of instruction time. Work missed due to an unexcused absence will receive a zero and may not be made up.
- Tardies: Students must bring a tardy slip from attendance before joining the class.

## **Academic Integrity Policy**

Academic dishonesty includes, but is not limited to, the following:

- Submitting writing in whole or in part that is taken from another student or any other source that is not the person submitting the writing.
- Taking an essay or any other material from the internet and using it as one's own, without citing the source and using quotations.
- Paraphrasing another author's work without citing the source.
- Using the ideas of another author without citing the source.
- Resubmitting work that was originally written for another teacher's course.
- Sharing any information about the content of assessments; including quizzes, tests, or exams with one's peers.
- Cheating on tests or quizzes through the use of unauthorized notes, copying another student's answers, letting someone copy answers, text messaging or using another device to send answers or receive answers, or in any way giving or receiving answers.
- Copying homework, class assignments, projects or any other assigned work from another student or anyone else.
- Tampering with a teacher's grades is considered a major rules violation and may be subject to dismissal.

**Disciplinary action for cases of academic dishonesty is as follows:**

### **First Offense**

- Student may fail the assignment and may not be given the opportunity to resubmit.
- Honors placement is jeopardized, if not revoked.

### **Second Offense**

- Student may fail the assignment and is not given the opportunity to resubmit.
- The athletic coach will be notified, and a sport suspension may be issued.

### **Third Offense**

- Student is placed on academic probation and may face disciplinary consequences from the Discipline Committee.
- Students with multiple instances of academic dishonesty in more than one subject may be expelled and deemed ineligible for reenrollment the following year.

## **Submission of Work**

If you have an excused absence assignments may be submitted via email. In most cases homework can be submitted upon your return to class.

## **Preparing for the AP Exam**

As we approach the AP Exam you will be asked to complete several practice tests. for a grade. These scores will fall into the 60% category for the second semester.

**\*Changes and adjustments may occur in case of special circumstances.**

**Final note**

Please be aware that this is a very challenging course that requires a high level of commitment. Earning an “A” in the class is challenging in the first semester and much more challenging in the second semester. This is due to the fact that the material becomes increasingly more difficult to understand, and the last for daily grades of the second semester are from AP practice exams.

I am in no way trying to “scare you off”, I just want you to be fully aware of the challenging nature of the course.

**Syllabus Acknowledgement**

I have read the syllabus and agree to abide by the policies and procedures contained therein, in addition to any additional policies and procedures outlined in the student handbook.

I also agree that I am responsible for my grade in the class. The teacher is responsible to accurately and effectively communicate the objectives of the course, administer assignments and exams that will measure my understanding of the material, and accurately record my performance.

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Student signature

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Date

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Print your name

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Parent signature

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Date

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Print your name