

Parkway West High School
Mathematics Department
BC Calculus
Fall 2020

Instructor: Jason A. Townsend

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Prerequisites: Honors Pre-Calculus

Grading Scale

96 – 100	H
90 – 95	A
80 – 89	B
70 – 79	C
60 – 69	D
0 - 59	F

Course Description

This course is designed to prepare the student for the Advanced Placement BC Calculus exam. This is a course in single variable Calculus. The content will be equivalent to a full year of college level Calculus. Topics will include (but not be limited to) Limits, Derivatives, Integrals, Differential Equations, and Series. A weighted grade is will be given.

Textbook

Calculus of a Single Variable, Larson, Hostetler, and Edwards.

Grading Policy

Grades will be based on total points for the semester. Grades will NOT be rounded. Weekly and unit assessments will be given. Format and dates TBD.

Attendance Policy

(In Person)

In the event of an excused absence, students may make up any missed homework, quizzes, and tests. Students will have five school days starting from the day of return to complete any missed items. Anything not made up in the given time frame will be counted as a zero. In the event of an extended absence (3 or more consecutive days) the student will work out a timetable with the teacher. Failure to do so will result in loss of points for the missed work. Any assignments, quizzes, or tests missed due to an unexcused absence will also be counted as zeros. This is the responsibility of the student, there will be no exceptions.

(Virtual)

Students will log in each day, on-time to the virtual meeting. In the event of illness or other type of absence, the instructor should be notified in advance. It is the responsibility of the student to obtain all information and materials from the missed synchronous session.

Course Expectations

This is an honors course. Consistent attendance is very important. You must come to class prepared to engage in the discussion of Mathematics. You will need to keep a detailed notebook with all of the class examples. All homework should be completed by the next day unless otherwise noted. To be successful you must study the notes, read the textbook, and **ask Questions!** When your instructor or you classmates are speaking you should always give your respect and attention.

There will be synchronous class time every day unless otherwise noted by the instructor. Most days there will also be asynchronous requirements and homework.

Classroom Guidelines

(In Person)

You will come to class on time. Two tardies per semester will be excused. On the third and any subsequent infractions, there will be consequences at the discretion of the instructor.

Other than a calculator, no electronic devices should be seen or heard in the classroom.

Headphones and games should be put away before entering the room.

The classroom is a professional learning environment; students should dress accordingly. All school dress code guidelines will be strictly followed. Students who cannot abide by these regulations will not be admitted to class. Respect your classmates and the classroom at all times.

(Virtual)

We will be meeting via Google and/or Zoom. Students should be on camera at all times.

Microphones should be muted unless called upon by the instructor. Comments and questions can be submitted via the chat options. Students should be dressed school appropriate. Any backgrounds used should be generic and school appropriate.

Student Resources

Group Q & A: Monday and Wednesdays from 2:30 – 3:30

Individual Appointments Available (20 minute blocks): Daily 7:30 – 9:30. By Appointment.

Student Support Block: Wednesdays from 11:30 – 12:25

There will be a weekly discussion board for all students and the instructor to use. Individual questions can also be sent via email to jtownsend@parkwayschools.net

Unit Outline

Unit 1: Applications of Derivatives

- Absolute Extrema
- Mean Value Theorem
- The First Derivative Test
- Concavity and The Second Derivative Test
- Sketching the Curve of a Function
- Optimization

Unit 2: Integration

- Antiderivatives and Indefinite Integration
- The Area Problem with Midpoint/Trapezoid Rules
- Riemann Sums and Definite Integrals
- Fundamental Theorem of Calculus
- Integration by Substitution

Unit 3: Logarithmic, Exponential, and Other Transcendental Functions

- The Natural Log Functions
- Inverse Functions
- Exponential Functions
- Bases Other than e
- Inverse Trigonometric Functions

Unit 4: Differential Equations

- Slope Fields and Euler's Method
- Separation of Variables
- Growth and Decay Functions