

Wyoming Department of Education Required Virtual Education Course Syllabus

Sheridan County School District # 1

Program Name	Sheridan County School District #1 Virtual School	Content Area	MA
Course ID	AC02125	Grade Level	11 - 12
Course Name	AP Calculus BC	# of Credits	1
SCED Code	02125	Curriculum Type	Acellus

COURSE DESCRIPTION

Acellus AP Calculus is a two-part advanced placement course providing students with the curriculum required by the College Board for AP Calculus AB and BC. Students completing this course will be able to take the AP Calculus exam, enabling them to earn college credit for taking this course while still in high school. Besides learning how to use the basic tools of Calculus, students completing this course learn on a deeper level what they are really doing and why it works. This provides insight few students experience in more conventional Calculus courses, empowering them with the knowledge required to solve real world problems. This course has been audited and approved by the College Board. Acellus AP Calculus BC is A-G Approved through the University of California.

STANDARD # [BENCHMARK \(Standard/Indicator\) Use the Standards and Benchmarks as Spreadsheets](#)

SCOPE AND SEQUENCE

UNIT OUTLINE	STANDARD#	OUTCOMES OBJECTIVES/STUDENT CENTERED GOALS
Unit 1 – Techniques of Integration		In this unit students learn the chain rule, u-substitution, expanding, separating the numerator, and completing the square. Students also learn dividing, adding and subtracting terms, trig identities, integration by parts, trig integrals, trig substitution, partial fractions, L'Hopital's Rule, improper integrals, and Euler's Method.
Unit 2 – Sequences and Series		In this unit students learn sequences, telescoping series, integral test and p-series, and alternating series. Students also learn direct and limit comparison tests, ratio and root tests, Taylor Polynomials and Taylor's Theorem, power series, and Taylor series for familiar functions.
Unit 3 – Parametric Equations		In this unit students learn derivatives and second derivatives of parametric equations. Students also learn arc length, polar coordinates including area and arc length, and derivatives of polar functions.
Unit 4 – Vectors		In this unit students learn dot and cross products. Students also learn vector valued functions, differentiation, integrations, velocity, and acceleration.
Unit 5 – AP Practice		In this unit students practice with problems such as those encountered on the AP Calculus BC exam.