

AP Calculus BC Part 2 (after AP Calculus AB)

NOTE: The content of calculus proceeds in the sequence **Calculus 1,2 & 3** .

- **AP Calculus AB** is equivalent to Calculus 1.
- **AP Calculus BC** is equivalent to Calculus 1 and 2.
- **Multivariable Calculus** is equivalent to Calculus 3.

 MM www.xumath.org
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TO REGISTER: <https://xumath.org>



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WHEN AND WHERE?

Term: June 10 - Oct. 21, 2026

In-Person & Live Zoom Lecture: Wed. 7-9pm CT

Homework Solving Video: Available on Canvas on Mon.

In-Person Address: PolyEducation, 4116 W Spring Creek Parkway, Suite C500,
Plano, TX 75024

Format:

- 20 2-hour lectures + 20 1-hour homework solving videos
- 20 homework assignments (to be graded) + 2 exams (to be graded)
- (1) In-person and live zoom hybrid; (2) Customized lecture notes on Canvas; (3) Videos for making up missed classes; (4) Cash awards for effort and performance in graded quizzes, homework and exams.

Tuition: \$995 (if register and pay by March 31), \$1025 (after March 31)

WHO TEACHES?

Dr. Sheng Xu:

- Recommended by K-12 students and parents in anonymous testimonials (on <https://xumath.org>)
- Math professor at Southern Methodist University with Teaching Excellence Award; 19 years and 17 math courses teaching experience; Author of the undergraduate textbook: *Introduction To Scientific Computing with Matlab and Python Tutorials* (on amazon.com); Ph.D. from Cornell and post-doc at Princeton and Cornell

COURSE INFO

Syllabus, Sample Notes and Videos: <https://xumath.org>

Required Textbook:

- [1] Customized notes by Prof. Xu (available before each class)
- [2] Calculus Volume 2 within the OpenStax project (free online or order print copies)
<https://openstax.org/details/books/calculus-volume-2>

References:

- [3] R. Larson & B. Edwards, *Calculus Early Transcendental Functions*, Edition 6e, ISBN 1-285-77977-9
- [4] J. Stewart, *Essential Calculus Early Transcendentals*, 2nd Edition, ISBN 1-133-11228-5

TOPICS

Unit 1: Techniques of Integration

1. Integration by parts
2. Trigonometric integrals
3. Partial fractions
4. Other integration techniques
5. Improper integrals

Unit 2: Sequences and Series

1. Sequences and series
2. Integral and comparison tests
3. Other convergence tests

Unit 3: Power Series

1. Power series
2. Representing functions as power series
3. Taylor and Maclaurin series
4. Applications of Taylor's theorem

Unit 4: Parametric Equations and Polar Coordinates

1. Parametric equations
2. Calculus of parametric curves
3. Polar coordinates
4. Areas and lengths in polar coordinates

Unit 5: Differential Equations

1. Direction fields and numerical methods
2. Separable equations
3. The logistic equation