## Who Should take an AP 2nd Year Calculus?

Most colleges and universities are requiring their students to take at least one year of advanced mathematics. At most colleges and universities, advanced mathematics is Calculus or higher. AP Calculus 1 & 2 is great way to get introduced to this level of sophistication, without the extreme pacing associated with a college classroom. To make it to these classes, a student must have successfully passed Pre-Calculus and Calculus 1.

How to succeed in 2nd Year Calculus :

For some, learning calculus comes easy. However, for many people, calculus is a lot work. Success is achievable in calculus if:

- You have met the Pre-Requisites for the class.

- You have a strong foundation in mathematics.

- You are able to make connections for topic to topic.

- You are willing to work at it outside of the classroom and seek out help when you start to struggle in class.
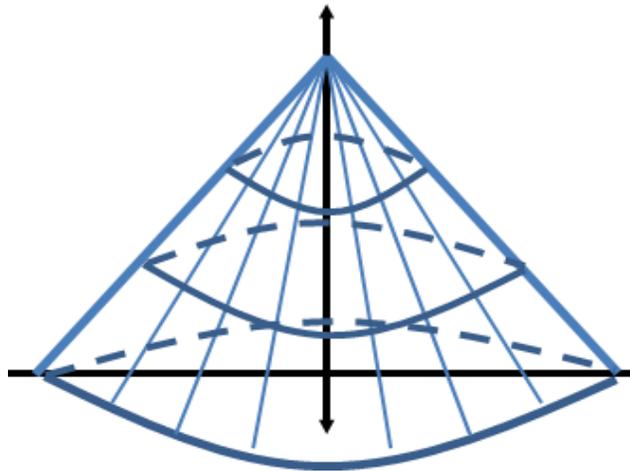
AP Calculus ABC and IB Math HL

PIKE HIGH SCHOOL

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AP Calculus ABC and IB Math HL

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Why take (AP 2nd Year Calculus)?

Mathematics is a universal language. Around the world everyone knows $2 + 2 = 4$. However not everyone can write a complex equation representing multiple variables, find its accumulative value at a specific position, and determine when its peaks and valleys will occur. Calculus can help you do this. Technology growing exponentially these days. Tomorrow's leaders will have to be mathematically sound and technologically savoy. AP Calculus will help achieve this.

COURSE OBJECTIVES:

The students will be able to learn and apply the concepts and standards of Single-Variable and a little Multi-Variable Calculus set by the College board and the State of Indiana Department of Education

## COURSE TOPICS:

Material Covered—Semester 1
- Modeling Mathematics by using The Rule of Four (Algebraically, Verbally, Numerically, and Graphically)
- Applications of Limit Theory, Differential Theory, and Antidifferential Theory
- Applications of Non-conventional Derivatives
- Numerical Derivatives (Riemann Sum and Trapezoid Sum Rule)

Material Covered—Semester 2
- Modeling Mathematics by using The Rule of Four (Algebraically, Verbally, Numerically, and Graphically)
- Modeling Functions with Polynomial Approximations and Series
- Applications of Derivatives and Integrals on Non-Conventional Systems (Logistic, Parametric, Polar, and Vector Equations)
- Multi-Variable Integration Techniques
- First Order Differential Equations
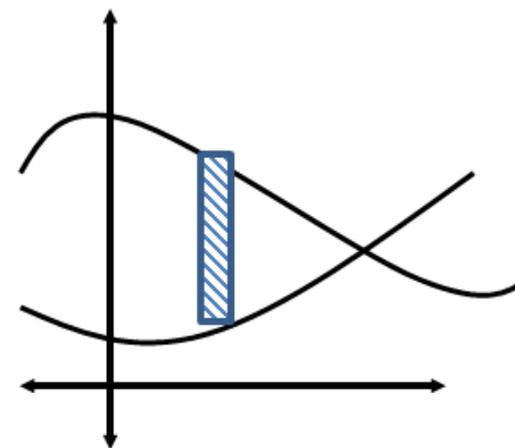
COURSE GRADES:

Students are expected to push themselves everyday. Their level of achievement in the class is primarily controlled by themselves. The sky is the limit in this class.

Students will be evaluated by:

- **Formative Assessments**
- **Written Assessments**
- **Group and Individual Projects**
- **Daily Work**