



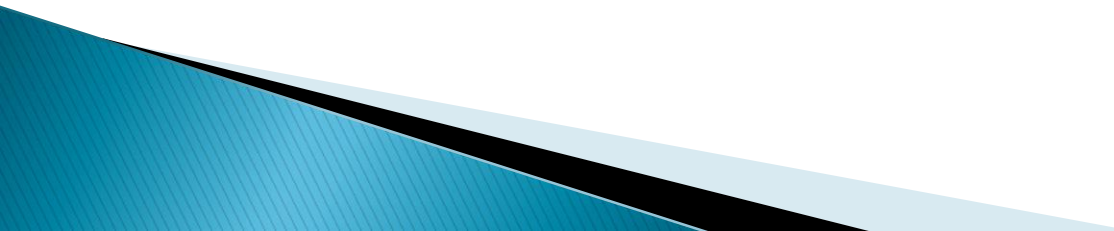
# AP Physics 1 Proposal

Deb Perryman, Coordinator of Science K-12  
Trisha Shrode, Director of Curriculum and  
Instruction

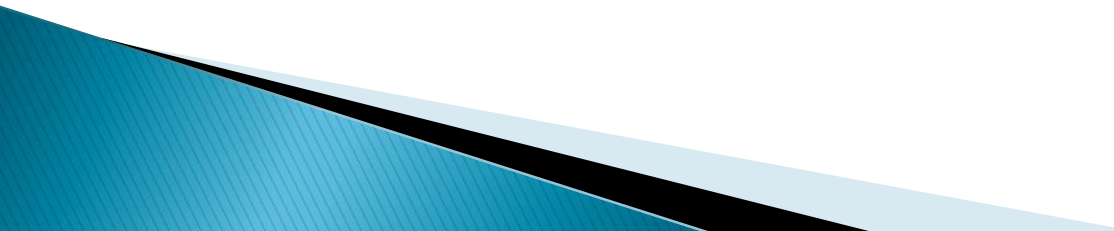


# Purpose


**The purpose of this presentation is to seek approval for adding AP Physics 1 to all 5 high schools.**



# Rationale

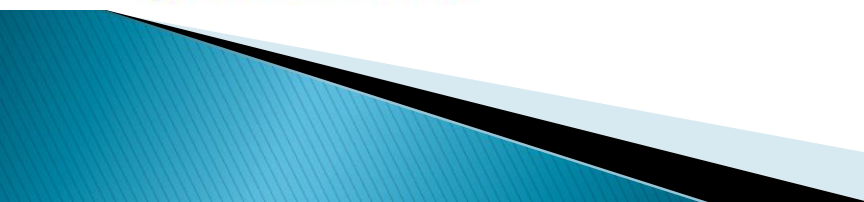
- The College Board currently offers 4 courses in AP Physics; 2 that are Algebra based and 2 that are Calculus based.
  - In U-46, the only AP Physics course offering for students is AP Physics C (this course requires that students either be concurrently enrolled in or have completed Calculus).
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# AP Physics C Current Enrollment

- ▶ EHS has 0 sections
  - ▶ BHS has 2 sections, 61 students
  - ▶ SEHS Has 3 sections, 70 students
  - ▶ SHS has 0 sections
  - ▶ LHS has 0 sections
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# AP Physics 1 Course Content

Students explore principles of Newtonian mechanics (including rotational motion); work, energy, and power; mechanical waves and sound; and introductory, simple circuits. The course is based on six Big Ideas, which encompass core scientific principles, theories, and processes that cut across traditional boundaries and provide a broad way of thinking about the physical world. The following are Big Ideas:

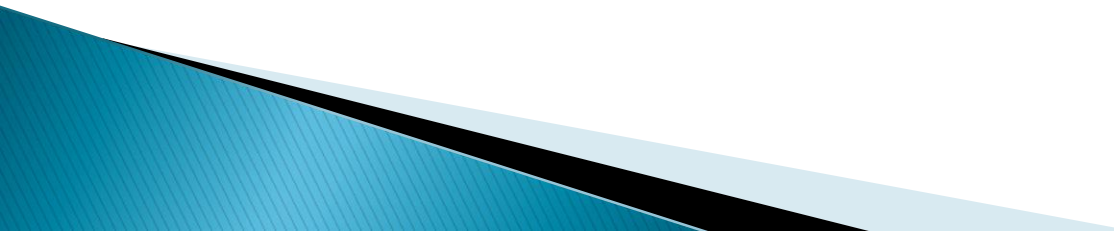
- Objects and systems have properties such as mass and charge. Systems may have internal structure.
  - Fields existing in space can be used to explain interactions.
  - The interactions of an object with other objects can be described by forces.
  - Interactions between systems can result in changes in those systems.
  - Changes that occur as a result of interactions are constrained by conservation laws.
  - Waves can transfer energy and momentum from one location to another without the permanent transfer of mass and serve as a mathematical model for the description of other phenomena.
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# AP Physics 1 Resources

- ▶ **Text:** College Physics: A Strategic Approach; published by Addison Wesley
- ▶ **Lab Manual:** Physics with Vernier
- ▶ **Student Workbook:** Student Workbook for College Physics: A Strategic Approach
- ▶ These resources are:
  - Inquiry-Based
  - Hands-On
  - Next Generation Science Standards Aligned
  - Aligned to the U-46 Science Curriculum

# Recommendation for Implementation

Offered beginning in the 2018-19  
school year in all 5 high schools.



# Cost Analysis

AP Physics 1 Adoption Costs				
	Unit Cost	# of Classrooms	# of Students	Total Cost
Textbook	\$178.74	10 classes	300	\$53,622.15
Professional Development	\$314.90	5 teachers		\$1,574.50
Vernier Probe (Class Set)	\$24,593.57 per set	5 class sets	300	\$122,967.85
Laptops (Set of 30)	\$17,585.00 per set	5 class sets	300	\$87,925.00
Subtotal				\$266,089.50

Physics 1 Institutes are one day workshops and being offered by Oakton Community College in Des Plaines on March 15th, 2018 from 8:00am to 3:00pm. Additional PD will be offered over the summer but the schedule is not published.

## Institute Costs

Early Bird Registration Fee \$190 X 5 Teachers = \$950

Substitutes \$124.90 X 5 Teachers = \$624.50

Total Cost \$ 1,574.50

# Evaluation of Change

- ▶ Number of students taking the course.
  - ▶ Number of students who successfully complete the course.
  - ▶ Number of students taking the AP Physics 1 Test.
  - ▶ Number of students receiving a 3 or higher on the AP Physics 1 exam.
  - ▶ Student survey to capture additional qualitative data.
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