Physics at Joliet West High School

All physics classes at Joliet West share the goal of developing citizens who are science-literate. In physics, the backdrop for this aim comes from developing an understanding of forces, motion, and energy. Such concepts are used to explain phenomena observed in common experience.

There are currently three levels of physics running at Joliet West (with hopes for adding a fourth level for upperclassmen in the future). Below you will find a summary of each course which highlights differences between the levels.

College-Prep Physics

Who takes the class?
Most sophomores, though some upperclassmen take the course if they still need the credit
What are the prerequisites?
Algebra 1 and Biology – these are the standard freshman courses in math and science
What are the topics?
1. Motion – Graphs & Concepts
2. Forces – Newton's Laws
3. Momentum – Impulse & Conservation
4. Energy – Work, Power, and Energy Conservation
5. Electricity & Electric Fields
6. Magnetism & Electromagnetism
7. Waves – E-M Waves & the Technology that uses them

What are the obligations outside of class?
If students are present in class and use their time wisely, homework is rare.

Honors Physics

Who takes the class?
High-achieving sophomores with a background in Honors math
What are the prerequisites?
Most students in Honors Physics take Honors Algebra or Honors Geometry as freshman. Most take Honors Biology as freshman.
How does the course compare to College-Prep Physics?
The course moves at a faster pace and involves much more mathematical problem-solving. Mastery of algebra skills is a must!
What are the topics?
1. Motion – Graphs & Kinematic Equations
2. Forces – Newton's Laws
3. Projectile Motion & Circular Motion (including trig)
4. Momentum – Impulse & Conservation
5. Energy – Work, Power, and Energy Conservation
6. Universal Gravity, Static Electricity, & Atomic Structure
7. Electric Circuits
8. Magnetism & Electromagnetism
9. Light and Sound Waves

What are the obligations outside of class?
Students can expect an hour or two of homework outside of class per week.

AP Physics 1

Who takes the class?
High-achieving sophomores with an interest in science and a desire to earn college credit (Some upperclassmen also take the course *after* taking physics.)
What are the prerequisites?
Students in AP Physics 1 must have already completed Geometry and Biology.
How does the course compare to Honors Physics?
The course moves at a faster pace. While there is one less unit, there is a much more rigorous treatment of scientific writing at the AP level. There is great emphasis placed on preparing for the AP Exam.
What are the topics?
1. Motion – Graphs, Kinematic Equations & Projectiles
2. Forces – Newton's Laws, Springs, Circular Motion & Universal Gravity
3. Energy – Work, Power, and Energy Conservation
4. Momentum – Impulse & Conservation
5. Rotational Motion – Kinematics & Dynamics
6. Rotational Motion – Momentum & Energy Conservation
7. Simple Harmonic Motion
8. Fluid Dynamics

What are the obligations outside of class?
Students can expect two hours or more of homework per week.

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