



Course Overview

High School | AP Physics C Mechanics - Last Updated on April 4, 2025

DESCRIPTION

K-12 Content Area | Mission & Philosophy Statement

- Young people are born investigators, with natural curiosities about the physical, biological, and social worlds they experience. Anchoring science learning in real-world phenomena connects curiosities to core conceptual understandings.
- Students actively construct understanding through inquiry, experimentation, and analysis to develop science and engineering practices such as asking questions, planning and carrying out investigations, and constructing explanations.
- Integration of crosscutting concepts such as patterns, cause and effect, and systems thinking promote interdisciplinary understanding and sense-making of the natural world.
- Science learning occurs alongside other disciplines to foster holistic understanding and application of knowledge.

Course Description

This course ordinarily forms the first part of the college sequence that serves as the foundation in physics for students majoring in the physical sciences or engineering. The sequence is parallel to or preceded by mathematics courses that include calculus. Methods of calculus are used wherever appropriate in formulating physical principles and in applying them to physical problems. Strong emphasis is placed on solving a variety of challenging problems, some requiring calculus. The subject matter of the C course Part 1 is classical mechanics. This course prepares the student for a second Physics course at the college level, typically a calculus based study including some combination of Electricity and Magnetism, Light and Waves or Thermodynamics. Each student is encouraged to participate in the Advanced Placement Physics C Part 1 Examination.

STANDARDS

College Board - AP Physics C Mechanics - Skills and Objectives (2020)

APPHYSICSCMECH.VR.1A

APPHYSICSCMECH.VR.1B

APPHYSICSCMECH.VR.1C

APPHYSICSCMECH.VR.1D

APPHYSICSCMECH.VR.1E

APPHYSICSCMECH.QM.2A

APPHYSICSCMECH.QM.2B

APPHYSICSCMECH.QM.2C

APPHYSICSCMECH.QM.2D

APPHYSICSCMECH.QM.2E

APPHYSICSCMECH.QM.2F

APPHYSICSCMECH.RDP.3A



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APPHYSICSCMECH.RDP.3B

APPHYSICSCMECH.RDP.3C

APPHYSICSCMECH.RDP.3D

APPHYSICSCMECH.DA.4A

APPHYSICSCMECH.DA.4B

APPHYSICSCMECH.DA.4C

APPHYSICSCMECH.DA.4D

APPHYSICSCMECH.DA.4E

APPHYSICSCMECH.TR.5A

APPHYSICSCMECH.TR.5B

APPHYSICSCMECH.TR.5C

APPHYSICSCMECH.TR.5D

APPHYSICSCMECH.TR.5E

APPHYSICSCMECH.MR.6A

APPHYSICSCMECH.MR.6B

APPHYSICSCMECH.MR.6C

APPHYSICSCMECH.MR.6D

APPHYSICSCMECH.A.7A

APPHYSICSCMECH.A.7B

APPHYSICSCMECH.A.7C

APPHYSICSCMECH.A.7D

APPHYSICSCMECH.A.7E

APPHYSICSCMECH.A.7F

APPHYSICSCMECH.U1.CHA-1.A

APPHYSICSCMECH.U1.CHA-1.B

APPHYSICSCMECH.U1.CHA-1.C

APPHYSICSCMECH.U1.CHA-2A

APPHYSICSCMECH.U1.CHA-2B

APPHYSICSCMECH.U1.CHA-2C

APPHYSICSCMECH.U1.CHA-2D

APPHYSICSCMECH.U2.INT-1.A

APPHYSICSCMECH.U2.INT-1.B

APPHYSICSCMECH.U2.INT-1.C

APPHYSICSCMECH.U2.INT-1.D

APPHYSICSCMECH.U2.INT-1.E

APPHYSICSCMECH.U2.INT-1.F

APPHYSICSCMECH.U2.INT-1.G

APPHYSICSCMECH.U2.INT-1.H

APPHYSICSCMECH.U2.INT-1.I

APPHYSICSCMECH.U2.INT-1.J

APPHYSICSCMECH.U2.INT-2.A

APPHYSICSCMECH.U2.INT-2.B

APPHYSICSCMECH.U2.INT-2.C

APPHYSICSCMECH.U2.INT-2.D

APPHYSICSCMECH.U2.INT-2.E

APPHYSICSCMECH.U2.INT-3.A

APPHYSICSCMECH.U2.INT-3.B

APPHYSICSCMECH.U3.INT-4.A

APPHYSICSCMECH.U3.INT-4.B

APPHYSICSCMECH.U3.INT-4.C

APPHYSICSCMECH.U3.CON-1.A

APPHYSICSCMECH.U3.CON-1.B

APPHYSICSCMECH.U3.CON-1.C

APPHYSICSCMECH.U3.CON-1.D



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APPHYSICSCMECH.U3.CON-1.E

APPHYSICSCMECH.U3.CON-1.F

APPHYSICSCMECH.U3.CON-2.A

APPHYSICSCMECH.U3.CON-2.B

APPHYSICSCMECH.U3.CON-2.C

APPHYSICSCMECH.U3.CON-2.D

APPHYSICSCMECH.U3.CON-3.A

APPHYSICSCMECH.U4.CHA-3.A

APPHYSICSCMECH.U4.CHA-3.B

APPHYSICSCMECH.U4.CHA-3.C

APPHYSICSCMECH.U4.INT-5.A

APPHYSICSCMECH.U4.INT-5.B

APPHYSICSCMECH.U4.INT-5.C

APPHYSICSCMECH.U4.INT-5.D

APPHYSICSCMECH.U4.INT-5.E

APPHYSICSCMECH.U4.CON-4.A

APPHYSICSCMECH.U4.CON-4.B

APPHYSICSCMECH.U4.CON-4.C

APPHYSICSCMECH.U4.CON-4.D

APPHYSICSCMECH.U4.CON-4.E

APPHYSICSCMECH.U4.CON-4.F

APPHYSICSCMECH.U5.INT-6.A

APPHYSICSCMECH.U5.INT-6.B

APPHYSICSCMECH.U5.INT-6.C

APPHYSICSCMECH.U5.INT-6.D

APPHYSICSCMECH.U5.INT-6.E

APPHYSICSCMECH.U5.CHA-4.A

APPHYSICSCMECH.U5.CHA-4.B

APPHYSICSCMECH.U5.INT-7.A

APPHYSICSCMECH.U5.INT-7.B

APPHYSICSCMECH.U5.INT-7.C

APPHYSICSCMECH.U5.INT-7.D

APPHYSICSCMECH.U5.INT-7.E

APPHYSICSCMECH.U5.CON-5.A

APPHYSICSCMECH.U5.CON-5.B

APPHYSICSCMECH.U5.CON-5.C

APPHYSICSCMECH.U5.CON-5.D

APPHYSICSCMECH.U6.INT-8.A

APPHYSICSCMECH.U6.INT-8.B

APPHYSICSCMECH.U6.INT-8.C

APPHYSICSCMECH.U6.INT-8.D

APPHYSICSCMECH.U6.INT-8.E

APPHYSICSCMECH.U6.INT-8.F

APPHYSICSCMECH.U6.INT-8.G

APPHYSICSCMECH.U6.INT-8.H

APPHYSICSCMECH.U6.INT-8.I

APPHYSICSCMECH.U6.INT-8.J

APPHYSICSCMECH.U6.INT-8.K

APPHYSICSCMECH.U7.FLD-1.A

APPHYSICSCMECH.U7.FLD-1.B

APPHYSICSCMECH.U7.FLD-1.C

APPHYSICSCMECH.U7.CON-6.A

APPHYSICSCMECH.U7.CON-6.B

APPHYSICSCMECH.U7.CON-6.C



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APPHYSICSCMECH.U7.CON-6.D

APPHYSICSCMECH.U7.CON-6.E

APPHYSICSCMECH.U7.CON-6.F

APPHYSICSCMECH.U7.CON-6.G

APPHYSICSCMECH.U7.CON-6.H

APPHYSICSCMECH.U7.CON-6.I

COURSE OBJECTIVES

The objectives are the course are to meet the Pennsylvania State Standards in Science and Technology and the National AP Physics standards.

ASSESSMENT TYPES

The following assessment types will be used during the course:

- Curriculum Based Measures
- Formative Assessments
- Summative Assessments
- Performance Based Assessments

SUGGESTED METHODS OF INSTRUCTION

A science program demands the use of a variety of instructional strategies to foster scientific thinking. Below is a list of suggested strategies for high-quality instruction:

- Instructional components outlined in *Framework for Teaching* by Charlotte Danielson
- Hands-on learning
- Posing questions for investigation
- Cooperative learning and collaboration
- Inquiry, engineering, and design

RESOURCES

District Approved Program Resources	District Approved Supplemental Resources	District Approved Technology Resources
Textbook Resources (Student and Teacher): Knight, R. (2008). <i>Physics A Strategic Approach</i> . Pearson.	Other Resources <ul style="list-style-type: none"> • Teacher Created Resources • District approved supplemental resources and labs 	Technology <ul style="list-style-type: none"> • District approved supplemental technology