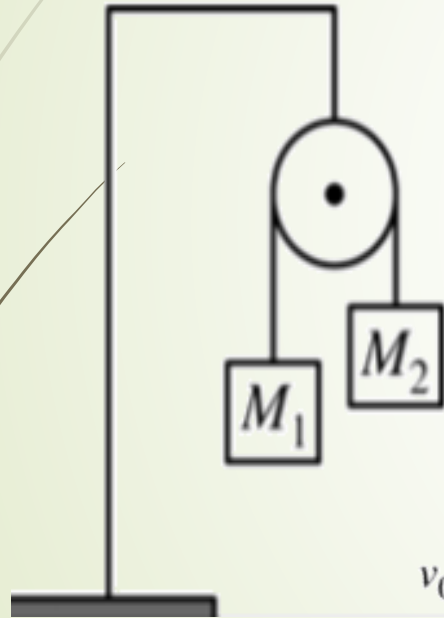


AP Physics C: Mechanics



$$\vec{\alpha} = \frac{\sum \vec{\tau}}{I} = \frac{\vec{\tau}_{net}}{I}$$

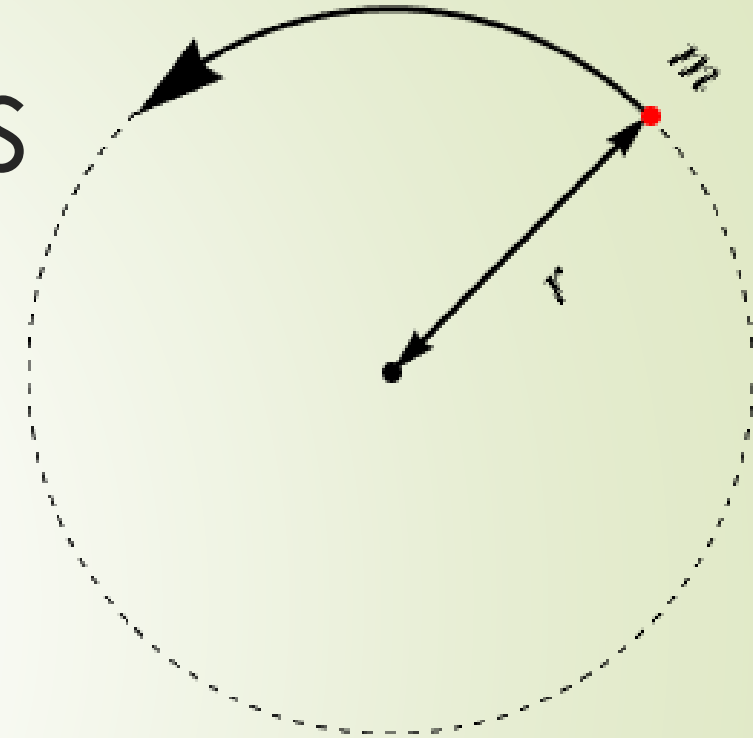
$$I = mr^2$$

$$I = \int r^2 dm = \sum mr^2 \quad U_s = \frac{1}{2}k(\Delta x)^2$$

$$x_{cm} = \frac{\sum m_i x_i}{\sum m_i}$$

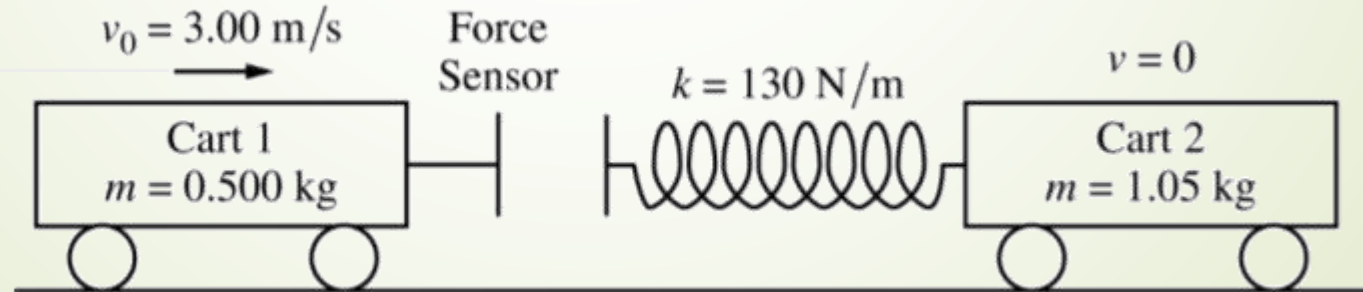
$$x = x_{max} \cos(\omega t + \phi)$$

$$T = \frac{2\pi}{\omega} = \frac{1}{f}$$



$$|\vec{F}_G| = \frac{Gm_1m_2}{r^2}$$

$$U_G = -\frac{Gm_1m_2}{r}$$





Overview



- AP Physics C is a continuation of concepts studied in AP Physics 1
- The computation is further complicated in an effort to more closely resemble real-life scenarios, requiring the students to take into account variables such as air resistance and uneven distributions of mass
- AP Physics C is **Calculus-Based**
- This is the highest-level Physics course offered in most public high schools, and subsequently it is among the most rigorous classes available
- This class is taken first semester, followed by Electricity and Magnetism



Prerequisites

- **Strongly Recommended**

- AP Physics 1
- AP Calculus BC (Or Taken Concurrently)

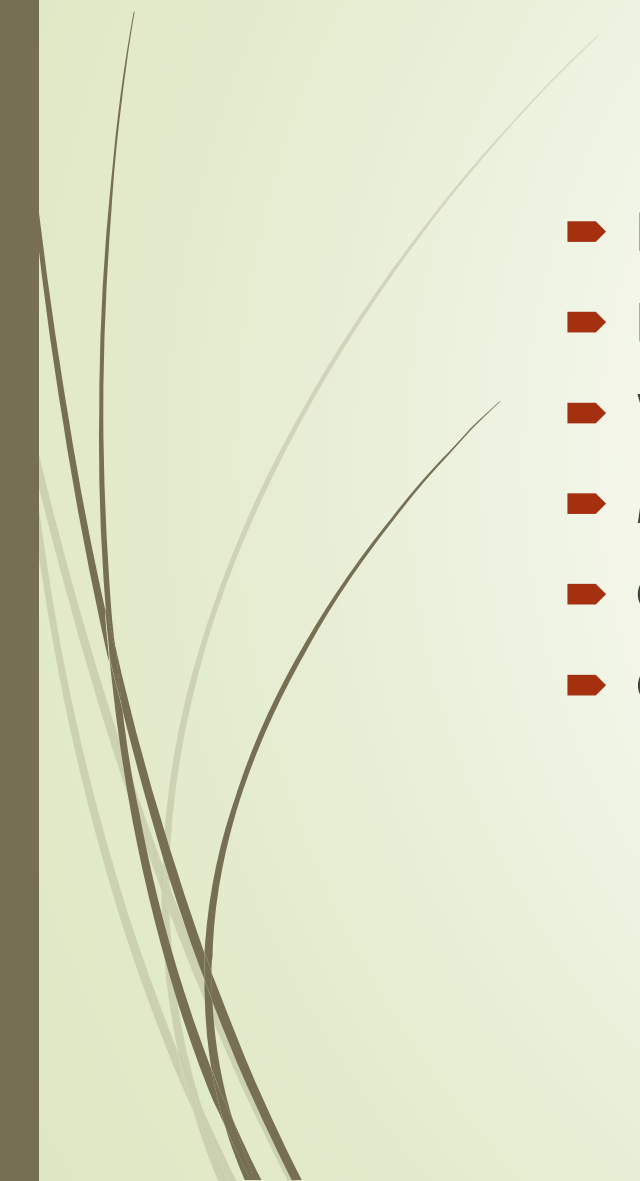
- **Recommended**

- AP Calculus AB

NOTE: If the student wants to take AP Physics C without taking Calculus BC or Physics 1, they are strongly encouraged to talk to Ms. Beldeanu and their counselor to discuss their commitment



Curriculum/Content

- Kinematics
 - Forces/Newton's Laws
 - Work, Energy, and Power
 - Momentum
 - Circular Motion
 - Oscillations and Gravitation
- 



Why Take AP Physics C: Mechanics?

- Having AP Physics C if the student is applying as a STEM major is incredibly valuable in the eyes of college admissions officers
- Engineers and other STEM majors will be able to **exempt** their introductory Calculus-based college Physics course if they pass the AP exam; Georgia Tech is one of many that offer exemption for students that earn 5s (other colleges in GA accept 3,4 and 5's)
- The 5 rate for the AP Physics 1 exam lingers between 4 and 6 percent, while the 5 rate for AP Physics C: Mechanics is around **30 percent (CHS students 93% score 5, 7% score 4)**
- Although the course content is more difficult than AP Physics 1, those who choose to take it will not be harming their GPA as the class average is generally much higher than AP Physics 1
- Anyone with a general interest in Physics and who is curious in the nature of our world will certainly enjoy the course content



For more information please
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