

# Information for Course Syllabus

Name of Course: AP Physics 1

Grade Level: 10-12

School: ORHS

Major Assignments: None

Field Trips: UT Engineers Day, October

How can parents access instructional materials? Canvas

# AP Physics 1

## 2021-2022

### Term 1

|                             |  |
|-----------------------------|--|
| <b>1D and 2D Kinematics</b> | 1D Kinematics: Speed and Velocity                      |
|                             | 1D Kinematics: Acceleration                            |
|                             | 2D Kinematics: Introduction to Vectors                 |
|                             | 2D Kinematics: Analytical Vector Addition & Resolution |
|                             | 2D Kinematics: Horizontally Launched Projectiles       |
|                             | 2D Kinematics: Projectiles Launched at an Angle        |

|                 |  |
|-----------------|--|
| <b>Dynamics</b> | Changes in Motion                      |
|                 | Newton's 1st Law                       |
|                 | Newton's 2nd and 3rd Laws              |
|                 | Weight and the Normal Force            |
|                 | Friction and Drag                      |
|                 | Interacting Objects, Ropes and Pulleys |

|  |                              |
|--|------------------------------|
| <b>Circular Motion and Gravitation</b> | Circular Motion              |
|  | Universal Gravitation and G  |
|  | Satellites and Kepler's Laws |

# AP Physics 1

## 2021-2022

### Term 1

|                        |                            |
|------------------------|----------------------------|
| <b>Work and Energy</b> | Work                       |
|                        | Mechanical Energy          |
|                        | The Work Energy Theorem    |
|                        | Elastic and Thermal Energy |
|                        | Conservation of Energy     |
|                        | Power                      |

# AP Physics 1

## 2021-2022

### Term 2

|                             |                              |
|-----------------------------|------------------------------|
| <b>Impulse and Momentum</b> | Impulse and Momentum         |
|                             | The Impulse Momentum Theorem |
|                             | Conservation of Momentum     |
|                             | Collisions                   |
|                             | 2D Collisions                |

|                               |                                    |
|-------------------------------|------------------------------------|
| <b>Simple Harmonic Motion</b> | Simple Harmonic Motion and Springs |
|                               | Pendula and Calculating SHM        |
|                               | Energy in SHM                      |
|                               | Damped and Driven Oscillations     |

|                          |   |
|--------------------------|---|
| <b>Rotational Motion</b> | Rotational Kinematics and Rotational Energy |
|                          | Torque                                      |
|                          | Center of Gravity                           |
|                          | Rotational Dynamics and Inertia             |
|                          | Newton's 2 <sup>nd</sup> Law for Rotation   |
|                          | Rolling Motion                              |

# AP Physics 1

## 2021-2022

### Term 2

|                                       |                            |
|---------------------------------------|----------------------------|
| <b>Mechanical<br/>Waves and Sound</b> | Wave Properties            |
|                                       | Sound Energy and Intensity |
|                                       | Wave Interactions          |
|                                       | Sound Phenomena and Music  |