

Summer Assignment ECE/AP Physics-1

Following is the summer work for ECE/AP Physics-1 students. Go to following link, watch videos, and take notes in a notebook.

Watch at least first 20 videos and take one page notes for each of the 20 videos. Your notes will be counted as first test of the 1st Quarter.

Dr. K

Trigonometry

<http://www.khanacademy.org/video/basic-trigonometry?playlist=Trigonometry>

<http://www.khanacademy.org/video/basic-trigonometry-ii?playlist=Trigonometry>

ECE/AP Physics 1

Motion in One Dimension

http://www.youtube.com/watch?v=ihNZlp7iUHE&feature=player_embedded#at=12

Average Speed and Velocity

<http://www.youtube.com/watch?v=oRKxmXwLvUU&feature=BFa&list=SPAD5B880806EBE0A4&index=2>

<https://www.khanacademy.org/science/physics/torque-angular-momentum/torque-tutorial/v/angular-momentum>

<https://www.khanacademy.org/science/physics/one-dimensional-motion/displacement-velocity-time/v/calculating-average-velocity-or-speed>

<http://www.youtube.com/watch?v=awzOvyMKeMA&feature=autoplay&list=SPAD5B880806EBE0A4&index=3&playnext=1>

Displacement from Time and Velocity

http://www.youtube.com/watch?v=IQ-dvt3V4yQ&feature=player_embedded

Acceleration

http://www.youtube.com/watch?v=FOkQszg1-j8&feature=player_embedded#at=96

Airbus take off time and distance (2 videos)

<http://www.khanacademy.org/video/airbus-a380-take-off-time?playlist=Physics>

<http://www.khanacademy.org/video/airbus-a380-take-off-distance?playlist=Physics>

Distance = Area under Velocity vs Time Graph. Acceleration = slope

<http://www.khanacademy.org/video/why-distance-is-area-under-velocity-time-line?playlist=Physics>

Average velocity for constant acceleration

<http://www.khanacademy.org/video/average-velocity-for-constant-acceleration?playlist=Physics>

Accelerating off an aircraft carrier:

<http://www.khanacademy.org/video/acceleration-of-aircraft-carrier-takeoff?playlist=Physics>

Kinematics Equations:

<https://www.khanacademy.org/science/physics/one-dimensional-motion/kinematic-formulas/v/average-velocity-for-constant-acceleration>

<https://www.khanacademy.org/science/physics/one-dimensional-motion/kinematic-formulas/v/acceleration-of-aircraft-carrier-takeoff>

<https://www.khanacademy.org/science/physics/one-dimensional-motion/kinematic-formulas/v/deriving-displacement-as-a-function-of-time-acceleration-and-initial-velocity>

<https://www.khanacademy.org/science/physics/one-dimensional-motion/kinematic-formulas/v/plotting-projectile-displacement-acceleration-and-velocity>

<https://www.khanacademy.org/science/physics/one-dimensional-motion/kinematic-formulas/a/what-are-the-kinematic-formulas>

Newton's Law

<http://www.khanacademy.org/video/newton-s-first-law-of-motion?playlist=Physic>

<http://www.khanacademy.org/video/newton-s-second-law-of-motion?playlist=Physics>

<https://www.khanacademy.org/science/physics/forces-newtons-laws/newtons-laws-of-motion/v/newton-s-1st-law-of-motion>

<https://www.khanacademy.org/science/physics/forces-newtons-laws/newtons-laws-of-motion/v/newton-s-second-law-of-motion>

<http://www.khanacademy.org/video/deriving-displacement-as-a-function-of-time--acceleration-and-initial-velocity?playlist=Physics>

<https://www.khanacademy.org/science/physics/forces-newtons-laws/balanced-unbalanced-forces/v/balanced-and-unbalanced-forces>

Impact Velocity

<https://www.khanacademy.org/science/physics/one-dimensional-motion/kinematic-formulas/v/impact-velocity-from-given-height?playlist=Physics>

Projectile Motion:

<https://www.khanacademy.org/science/physics/one-dimensional-motion/old-projectile-motion/v/projectile-motion-part-1>

<https://www.khanacademy.org/science/physics/one-dimensional-motion/old-projectile-motion/v/projectile-motion-part-2>

<https://www.khanacademy.org/science/physics/one-dimensional-motion/old-projectile-motion/v/projectile-motion-part-3>

<https://www.khanacademy.org/science/physics/one-dimensional-motion/old-projectile-motion/v/projectile-motion-part-4>

<https://www.khanacademy.org/science/physics/one-dimensional-motion/old-projectile-motion/v/projectile-motion-part-5>

<https://www.khanacademy.org/science/physics/two-dimensional-motion/two-dimensional-projectile-motion/v/projectile-at-an-angle>

Vectors and Two Dimensional motion

<http://www.khanacademy.org/video/visualizing-vectors-in-2-dimensions?playlist=Physics>

Two Dimensional motion- Projectile Motion

<http://www.khanacademy.org/video/projectile-at-an-angle?playlist=Physics>

Another way to get Air Time

<http://www.khanacademy.org/video/different-way-to-determine-time-in-air?playlist=Physics>

Projectiles with different Launching and Landing Elevations

<http://www.khanacademy.org/video/launching-and-landing-on-different-elevations?playlist=Physics>

Total Projectile Displacement

<http://www.khanacademy.org/video/total-displacement-for-projectile?playlist=Physics>

Final Projectile Velocity

<http://www.khanacademy.org/video/total-final-velocity-for-projectile?playlist=Physics>

<http://www.khanacademy.org/video/correction-to-total-final-velocity-for-projectile?playlist=Physics>

Gravitation

<http://www.khanacademy.org/video/introduction-to-gravity?playlist=Physics>

Mass vs. Weight

<http://www.khanacademy.org/video/mass-and-weight-clarification?playlist=Physics>

Gravity for Astronaut

<http://www.khanacademy.org/video/gravity-for-astronauts-in-orbit?playlist=Physics>

Brick or Feather Fall Faster?

<http://www.khanacademy.org/video/would-a-brick-or-feather-fall-faster?playlist=Physics>

Newton's Third Law

<http://www.khanacademy.org/video/newton-s-third-law-of-motion?playlist=Physics>

Normal Force

<http://www.khanacademy.org/video/normal-force-and-contact-force?playlist=Physics>

Normal Force in Elevator

<http://www.khanacademy.org/video/normal-force-in-an-elevator?playlist=Physics>

Forces on an incline

<http://www.khanacademy.org/video/inclined-plane-force-components?playlist=Physics>

Ice Accelerating down an incline

<http://www.khanacademy.org/video/ice-accelerating-down-an-incline?playlist=Physics>

Friction Forcekeeping Block Stationary

<http://www.khanacademy.org/video/force-of-friction-keeping-the-block-stationary?playlist=Physics>

Friction Force Keeping Block Stationary

<http://www.khanacademy.org/video/force-of-friction-keeping-velocity-constant?playlist=Physics>

<http://www.khanacademy.org/video/intuition-on-static-and-kinetic-friction-comparisons?playlist=Physics>

Tension Introduction

<http://www.khanacademy.org/video/introduction-to-tension?playlist=Physics>

Introduction to Work and Energy

<http://www.khanacademy.org/video/introduction-to-work-and-energy?playlist=Physics>

Energy Conservation

<http://www.khanacademy.org/video/conservation-of-energy?playlist=Physics>

Work & Energy with Friction Loss

<http://www.khanacademy.org/video/work-energy-problem-with-friction?playlist=Physics>

Springs and Hooke's Law

<http://www.khanacademy.org/video/intro-to-springs-and-hooke-s-law?playlist=Physics>

Spring Potential Energy

<http://www.khanacademy.org/video/potential-energy-stored-in-a-spring?playlist=Physics>

Momentum and Collisions

<http://www.khanacademy.org/video/introduction-to-momentum?playlist=Physics>

<http://www.khanacademy.org/video/2-dimensional-momentum-problem> playlist=Physics

<http://www.khanacademy.org/video/2-dimensional-momentum-problem--part-2?playlist=Physics>

<https://www.khanacademy.org/science/physics/torque-angular-momentum/torque-tutorial/v/relationship-between-angular-velocity-and-speed>

<https://www.khanacademy.org/science/physics/torque-angular-momentum/torque-tutorial/v/angular-momentum>

Centripetal Acceleration

<http://www.khanacademy.org/video/introduction-to-newton-s-law-of-gravitation?playlist=Physics>

Rotational Equilibrium and Rotational Dynamics

Center of Mass:

<http://www.khanacademy.org/video/center-of-mass?playlist=Physics>

Introduction to Torque -

<http://www.khanacademy.org/video/introduction-to-torque?playlist=Physics>

Moments Part 1 and 2

<http://www.khanacademy.org/video/moments?playlist=Physics>

<http://www.khanacademy.org/video/moments--part-2?playlist=Physics>

Conservation of Angular Momentum

<https://www.khanacademy.org/science/physics/torque-angular-momentum/torque-tutorial/v/angular-momentum>

Vibrations and Wave

<http://www.khanacademy.org/video/intro-to-springs-and-hooke-s-law?playlist=Physics>

<http://www.khanacademy.org/video/potential-energy-stored-in-a-spring?playlist=Physics>

<http://www.khanacademy.org/video/spring-potential-energy-example--mistake-in->

[math?playlist=Physics](#)

Harmonic Motion

<http://www.khanacademy.org/video/introduction-to-harmonic-motion?playlist=Physics>

Introduction to waves

<http://www.khanacademy.org/video/introduction-to-waves?playlist=Physics>

Wave amplitude frequency and period

<http://www.khanacademy.org/video/amplitude--period--frequency-and-wavelength-of-periodic-waves?playlist=Physics>

Doppler Effect:

<https://www.khanacademy.org/science/physics/mechanical-waves-and-sound/doppler-effect/v/introduction-to-the-doppler-effect>

<https://www.khanacademy.org/science/physics/mechanical-waves-and-sound/doppler-effect/v/doppler-effect-formula-for-observed-frequency>

<https://www.khanacademy.org/science/physics/mechanical-waves-and-sound/doppler-effect/v/doppler-effect-formula-when-source-is-moving-away>

Forces and Electric Fields

<https://www.khanacademy.org/science/physics/electricity-magnetism/charge-and-electric-field/v/coulombs-law>

<https://www.khanacademy.org/science/physics/electricity-magnetism/charge-and-electric-field/v/electrostatics-part-2>

Voltage

<http://www.khanacademy.org/video/voltage?playlist=Physics>

Electrical Potential Energy

<http://www.khanacademy.org/video/electric-potential-energy?playlist=Physics>

<https://www.khanacademy.org/science/physics/electricity-magnetism/charge-and-electric-field/v/electric-potential-energy>

Capacitor

<https://www.khanacademy.org/science/physics/circuits-topic/circuits-with-capacitors/v/energy-capacitor>

Current and Resistance

<https://www.khanacademy.org/science/physics/circuits-topic/circuits-resistance/v/circuits-part-1>

<http://www.khanacademy.org/video/circuits--part-1?topic=physics>

<https://www.khanacademy.org/science/physics/circuits-topic/circuits-resistance/v/resistivity-and-conductivity>

