Summer Assignment ECE/AP Physics-1

The following is the summer work for ECE/AP Physics-1 students. Go to the following links, watch videos, and take notes in a notebook.
Watch at least 20 videos and write a one page summary for each of the 20 videos. By the end of the summer you should have at least 20 pages of notes.

Your notes will be counted as the first test of the 1st Quarter.

P.S. If any of the links do not work move on to the next link.

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 Veloocity
http://www.youtube.com/watch?v=lQ-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

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-mot/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

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

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

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

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