

Physics Y12 Induction 2020

What resources can you expect to back up your studies?

Text book: (Also available on-line)

Introduction to the unit

Units are divided into subsections

Questions with fully worked solutions and Activities are integral to the unit

Fully worked solutions are at the end of each unit

Questions on the whole unit

The achievements list is the most important page!!

Maths resources

On line:

Lesson outlines

Activity sheets

Additional sheets tend to be extension material

Assessment:

Key assessments,

Definitions tests,

End of unit tests,

Y12 Internal Exams,

Core Practicals

Expectations:

Pre-lesson notes done on sections.

Questions and Key assessments done as directed.

Course structure

Y12

6 units

HFS EAT SUR DIG SPC MUS

Practical skills endorsement: 8 core practical tasks

Preparation for Year 1

1. Sign up for Qubit with the Institute of Physics
http://www.iop.org/education/student/youth_membership/page_41684.html
2. Definitions: Learn the definitions for HFS (below)
3. Pick a sport of your choice. In HFS for example you look at climbing, Bungee jumping and Ski jumping. Write a detailed account about all of the Physics that is involved (you may be asked to give a short presentation on this). Think about how advances in technology have made the sport possible, improved performance in the past and how it may improve it in the future. It is not intended that this be a general description of a sport it is the Physics we are interested in.
4. Go to www.s-cool.co.uk and in the A level Physics section in Vectors and Scalars and linear motion. Read this through and make detailed notes:
 - Vectors and Scalars - What's the Difference and Vector Addition
 - Resolving Vectors into Components

Higher, Faster, Stronger Definitions Sheet

Section	Term	Definition
1.2	Acceleration	The rate of change of velocity (ms^{-2})
1.2	Displacement	Distance in a specified direction (m)
1.2	Free fall	When an object accelerates with the acceleration due to gravity
1.2	Scalar	A quantity with magnitude only
1.2	Vector Quantity	A quantity with both magnitude and direction
1.2	Velocity	Speed in a specified direction (ms^{-1})
1.3	Tangent	Straight line touching a curve
1.4	Newton's first law of motion	An object will move at a constant velocity or stays at rest unless an unbalanced (resultant) force acts on it
1.4	Newton's second law of motion	The rate of change of momentum of a body is proportional to the RESULTANT force acting on it and occurs in the direction of the force.
1.4	Newton's third law of motion	All forces come in pair, these forces act on different bodies, are equal in size, opposite in direction and are of the same time
1.4	Weight	The gravitational force acting on a body (N)
1.4	Resultant Vector	The net effect of two or more vectors in a given direction
2.1	Equilibrium	No net force
2.1	Coplanar	Acting in the same plane
2.1	Resultant vector	A single vector which replaces two or more separate ones
2.2	Elastic	Will return to original dimensions on removal of the deforming stress/force
2.2	Hooke's Law	Tension proportional to extension or stress proportional to strain
2.2	Limit of proportionality	Past this point a material will no longer obey Hooke's law
2.2	Stiffness	A measure of how much extension takes place for a particular force
3.1	Work	Energy transferred, equal to the product of force and displacement in the direction of the force
3.1	Kinetic energy	The energy a body has because of its movement (J)
3.1	Law of Energy Conservation	Energy cannot be created or destroyed
3.1	Potential energy	The energy a body has because of its position or the arrangement of its parts
4.1	Elastic potential energy	Energy an object has due to being compressed or stretched