PAGET HIGH SCHOOL
Aspire to be more...

Science: KS5 A Level Physics

Subject:

This is a 2 year course that further develops the concepts learnt in GCSE Physics. Students develop an understanding of the main concepts in classical and quantum physics, astrophysics and medical physics. This course is content-led: the specification is divided into topics, each covering key concepts in physics. You will build on your knowledge of the laws of physics and apply your understanding to areas ranging from sub-atomic particles to the entire universe.

There are 5 lesson of Physics per week following the OCR Physics A specification. Module 1 – Development of Practical Skills in Physics will be taught and assessed throughout the course.

The aim of the course is to encourage candidates to:

- develop an essential knowledge and understanding of different areas of physics and how these areas relate to each other,
- develop and demonstrate a deep appreciation of the skills knowledge and understanding of scientific methods; this will be linked closely to an endorsement of practical skills,
- develop competence and confidence in a variety of practical mathematical and problem solving skills,
- develop an interest in and enthusiasm for physics, including developing an interest in further study and careers associated with the subject,
- develop an understanding of how society makes decisions about scientific issues and how the sciences contribute to the success of the economy and society.

Content overview	**Assessment Overview**
Content is split into 6 thematic teaching modules (These are detailed below)	Modelling Physics (01) 100 marks 2 hours 15 minutes Written exam
	Exploring Physics (02) 100 marks 2 hours 15 minutes Written exam
	Unified Physics 70 marks 1 hour 30 minutes Written exam
	Practical endorsement for Physics (Non exam)

Team members:

Teaching Team:
Mr P Ellison - Physics specialist and DofE Co-ordinator.

Support Team:
Mrs M Bibi - Curriculum Area Teaching Assistant.
Mrs J Redfern - Biology specialist technician.
Mr J Yates - Physics specialist technician.

Facilities:

We have seven laboratories spread across the two buildings that form the Main Block and Trent Building. These are serviced by three specialist technicians who also support extra curricula activities.

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Curriculum Summary: (*KS5)*

Teachers will work hard to help develop students to obtain a sound basis of knowledge in physics and to recognise how each topic is relevant to the world around us. In addition, the practical skills that are developed throughout the course will allow students to learn from direct experience. This dual approach of content and practical skills will lay the foundations for a successful transition to employment or higher education. The course is split into different theoretical topics with practical skills integrated throughout.

Year 12 is taught as follows:
Module 1: Development of practical skills in physics.
Module 2: Foundations of physics.
Module 3: Forces and motion.
Module 4: Electrons, waves and photons .
Development of practical skills in physics. Embedded throughout.

- Physical quantities and units. Scalars and vectors. Measurements. Year 1 /AS.
- Motion. Forces in action. Newton's laws of motion and momentum. Year 1 /AS.
- Work, energy and power. Materials. Year 1 /AS .
- Charge and current. Energy, power and resistance. Electrical circuits. Year 1 /AS.
- Waves,Quantum physics Year 1 /AS.

Module 1: Development of practical skills in physics.
Module 2: Foundations of physics.
Module 3: Forces and motion.
Module 4: Electrons, waves and photons.
Module 5: Newtonian world and astrophysics.
Module 6: Particles and medical physics .
Development of practical skills in physics. Embedded throughout.

- Physical quantities and units. Scalars and vectors. Measurements. Year 2 /A2.
- Motion. Forces in action. Newton's laws of motion and momentum. Year 2 /A2.
- Work, energy and power. Materials. Year 2 /A2.
- Charge and current. Energy, power and resistance. Electrical circuits. Year 2 /A2.
- Waves. Quantum physics. Year 2 /A2.
- Thermal physics. Circular motion. Oscillations. Gravitational fields. Year 2 /A2.
- Astrophysics. Year 2 /A2.
- Nuclear and particle physics. Medical imaging. Year 2 /A2.
- Capacitors. Electric fields. Electromagnetism. Year 2 /A2.

Links to useful sites:

http://www.s-cool.co.uk
http://hyperphysics.phy-astr.gsu.edu/hbase/hph.html
http://www.iop.org/education/student/index.html
http://www.physics.org/index.asp
https://phet.colorado.edu/
http://physicsworld.com/
http://www.physicsclassroom.com/

Extra-curricular activities available in the CA:

Staff provide lunch time and after school support sessions, which students are encouraged to attend. This is when students can go through errors in homework, misconceptions or just general support. Students at Key Stage 5 are also invited to Saturday school between 10am and 12pm for additional support in Core subjects.