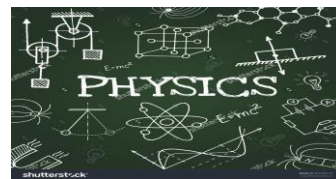


Physics Advanced Higher

Award Received

Advanced Higher Physics is graded **A to D**.

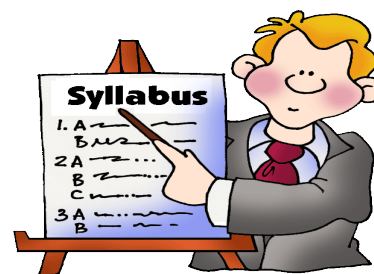


Entry Level: What do I need to do it? An A or B at Higher grade and an ability to work independently

AH Physics is an ideal introduction to ... university level study and as such is aimed at students who show a serious interest in the subject and who from their prelim results are predicted to attain Higher Physics at Grade A or B. **You must have a high degree of ...** commitment, self-motivation and be able to study independently on your own during extra study periods and at home.

Course Content: What will I learn?

You will build on the knowledge and skills you have already gained from Higher Physics. The AH Physics course consists of the following units ...



Rotational motion & Astrophysics

- **kinematic relationships** - using calculus to derive equations of motion
- **angular motion** - displacement, velocity, period and acceleration
- **rotational motion** - involving centripetal force, centripetal acceleration, inertia, torque, kinetic energy and angular momentum
- **gravitation** - forces acting between heavenly bodies (including natural and man-made satellites) and escape velocity
- **general relativity** - space-time diagrams, event horizon and black holes
- **stellar physics** - stellar evolution, Hertzsprung-Russell star classification, luminosity and surface temperature.

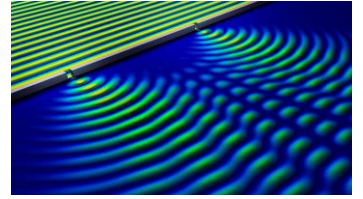
Quanta & Waves

- **quantum theory** - Bohr atomic model, wave/particle duality and Heisenberg's uncertainty principle
- **particles from space** - composition of cosmic rays, Van Allen radiation belts and the solar wind
- **simple harmonic motion** - pendulum, spring, car shock absorbers, critical and over damping
- **waves** - wave motion, phase difference and superposition
- **interference** - constructive/destructive, thin films
- **polarisation** - filters, refraction.



Electromagnetism (1/2 unit)

- **electrical and magnetic fields** - charge, energy, potential difference, field strength and the electronvolt
- **magnetism** - magnetic induction around a wire
- **circuits** - capacitor and resistor circuits
- **inductance and electromagnetic radiation**
- **interference** - constructive/destructive, thin films



Teaching Methods: What will I do?



The course will consist of ... a mixture of taught, written and practical work. **You will also have to** ... be prepared to complete additional research and self-directed consolidation work - during extra study periods and at home. **This includes** ... accessing the SQA website - tackling exam questions and marking your own answers.

Assessment: How will I be assessed?

You will be assessed as follows ...

- ✓ Unit assessments with short questions covering ku and ps.
- ✓ Prelim and final exam.
- ✓ Investigating Physics short report.
- ✓ Project report.



Homework.

Homework tasks will include ... background reading, project research, completing tutorial questions and using the SQA website to complete and mark previous exam questions.



Deadlines must be strictly adhered to ... in order to be fully prepared for scheduled assessments.

Progression After school ...

Most students are aiming towards university on completion of the AH Physics course ... studying areas such as mathematics, engineering, computing, space physics, laser optics and medical physics.