

PHYSICS

WHY STUDY A-LEVEL PHYSICS?

An A-Level in physics shows that you are able to apply your mind logically when solving problems. The world of engineering, science, medicine and many non-scientific careers beckon budding scientists. Physics will help you develop a flexible portfolio of skills that will equip you for a satisfying career wherever your ambitions lie.

WHAT QUALIFICATIONS ARE NEEDED?

It is not essential to study A-Level Mathematics. However, a high level of numeracy is required and demands that students have a sound knowledge of basic Maths.

Exam Board, Course Content and Assessment:

AQA A-Level Physics - CORE CONTENT

1. Measurements and their errors
2. Particle and radiation
3. Waves
4. Mechanics and materials
5. Electricity
6. Further mechanics and thermal physics
7. Fields and their consequences
8. Nuclear Physics

Options:

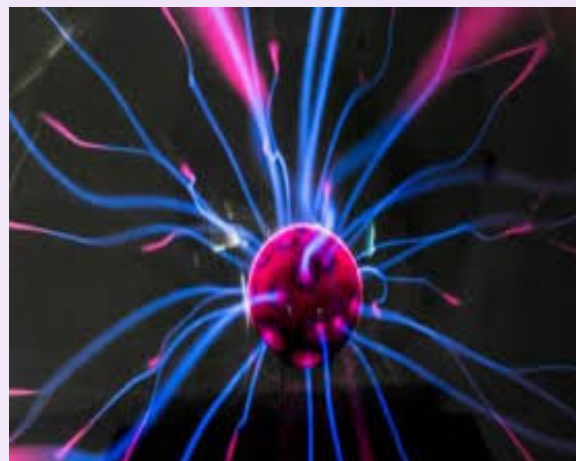
9. Astrophysics
10. Medical Physics
11. Engineering Physics
12. Turning points in physics
13. Electronics

The A-level exam consists of 3 externally assessed exams-

Paper 1 -

- **Assess Sections 1 - 5 of the Specification along with 6.1 (Periodic Motion)**
- Assessment is 2 Hours
- The paper consists of 85 marks.
- **Contributes 34% to overall qualification**

The paper consists of 60 marks of short and long answer questions and 25 multiple choice questions on content. Students will be expected to apply their knowledge and understanding to familiar and unfamiliar contexts.



Paper 2-

- **Assess Sections 6.2 (Thermal Physics), 7 & 8**
- Assessment is 2 Hours
- The paper consists of 85 marks.
- **Contributes 34% to overall qualification**

The paper consists of 60 marks of short and long answer questions and 25 multiple choice questions on content. Students will be expected to apply their knowledge and understanding to familiar and unfamiliar contexts.

Paper 3-

- **Section A: Compulsory Section : Practical Skills and Data Analysis**
- **Section B: Students enter for one of the sections, At St Michael's we will be teaching Astrophysics.**
- Assessment is 2 Hours
- The paper consists of 80 marks
- **Contributes 32% to overall qualification**

The Paper consists of 45 marks of short and long answer questions on practical experiments and data analysis. 35 marks of short and long answer questions on optional topics, in our case, Astrophysics.

SCIENCE PRACTICAL ENDORSEMENT

Physics is fundamentally an experimental subject. AQA specification provides numerous opportunities to use practical experiences to link theory to reality, and equip students with the essential practical skills they need.

Students use relevant apparatus and techniques to develop and demonstrate specific practical skills assessed through a minimum of 12 core practicals. Internally assessed and externally moderated.

Students will be assessed separately for the Science Practical Endorsement. The Endorsement will not contribute to the overall grade for this qualification, but the result will be recorded on the student's certificate.

Academic Enrichment and Trips

By studying Physics at St Michael's, you will become a member of a friendly and highly inspirational Physics Department, which delivers excellent results. You will acquire excellent time management skills, using our independent learning log and individual topic booklets of exam style questions. Each lesson is backed up by a lesson of private study consisting of problem solving, practical write-ups and background reading. During the course you will be expected to attend outside lectures and courses. The course also includes many inspirational trips including a Trip to CERN, Geneva (The holy grail of Science: the most important particle experiment on the planet. In the words of our students 'Perhaps the best part of the trip was the opportunity to be around some of the best physicists in the world and observe them interacting with each other and seeing the Large Hadron Collider'. Our students are also given an opportunity to attend summer school at Imperial College, London. Students in Year 12 complete the Silver CREST award and in Year 13 they will be completing the Gold CREST award.

Students are also encouraged to be part of the AstroSociety whereby they can complete various awards including the National School of Observatory Silver and Gold awards. Students are encouraged to become leaders through these societies and present their findings to inspire younger students.

ST MICHAEL'S CATHOLIC GRAMMAR SCHOOL

Students also complete the British Physics Olympiads and students find these challenges very rewarding and therefore building their resilience to achieve the highest. Right from the onset of the course, students are encouraged to prepare for the Oxford PAT and ENGAA for Cambridge along with Interview practice in Year 13. We believe in providing our students the best opportunities in Physics and therefore through various weekly dedicated help sessions, we are constantly building up their resilience and therefore enabling them to achieve high,

A large number of A Level students go on to study a physics or an engineering-based degree. However, physics does complement students who intend to study most science-related degrees and is highly valued by admissions tutors and employers due to the high demand and the skills developed. The variety of options available to those who have studied for a degree in physics is very appealing. The following are examples of courses that a graduate could embark on: engineering (e.g.. aeronautical, mechanical, electrical), further study, teacher or lecturer, geophysicist, medical physicist, radiation protection worker, research scientist, meteorologist, environmental scientist, roles within the armed forces, defence industry, manufacturing and technology industries, finance and business.

We trust that studying Physics at St. Michael's will be a rewarding experience for you. You will be following in the footsteps of many students who today are successful engineers, medics, lawyers, city financiers, architects and CERN particle physicists.

“Whatever you want to be in life, Physics will help you achieve it”

