

Examination Board

Edexcel

Specific Course Requirements

Students are accepted onto this course if they have at least grades AB or BA in GCSE Core Science and Additional Science, or alternatively, at least ABB, BAB or BBA in Triple Science.

The department will consider students with BB or BBB depending on teacher recommendations, overall Science profiles and availability of places.

Physics students should also choose 'AS' Level Mathematics or one other Science.

Course Content

Topic 1: Working as a Physicist covering experimental methods and data analysis

Topic 2: Mechanics - covering kinematics and dynamics of bodies

Topic 3: Electric Circuits - covering DC electricity

Topic 4: Materials – covering properties of solids and liquids

Topic 5: Waves and Particle Nature of Light – covering wave phenomena and introducing the quantum model of light

Topic 6: Further Mechanics

Topic 7: Electric and Magnetic Fields

Topic 8: Nuclear and Particle Physics

Topic 9: Thermodynamics

Topic 10: Space

Topic 11: Nuclear Radiation

Topic 12: Gravitational Fields

Topic 13: Oscillations

What do I need to know, or be able to do, to study this course?

While there is not a large amount of material to memorise in Physics, this course covers concepts and theories, which you will need to be able to understand fully and apply to different contexts when tackling questions. Apart from competency in Mathematics, strong analytical and problem solving skills are required, as well as the ability to see how concepts fit together.

How will I be assessed on this course?

The 'A' Level is assessed through three external written examinations.

What could I do with a qualification in this subject?

Physics is one of the university entrance requirements or preferred subjects for not only Physics degrees, but also for other courses such as Computing, Engineering, Medicine, Dentistry, Optics, Electronics and so on. There is a shortage of qualified Physicists and they are in demand in areas of Medicine, Telecommunications, Aeronautics, Architecture, Transport and many other industries. Many Physics graduates go on to work in areas of research and design and many go on to work in the Financial Sector as the development of your analytical and problem-solving skills is highly regarded even for non-scientific careers.

The three most commonly asked questions about this course are:

Will I be at a disadvantage if I have not done Triple Science?

No, the starting point for all of the material covered is Double Science. The only very slight advantage is that Triple Science students will be a bit more familiar with a small part of the 'A2' Level unit on Particle Physics, which is covered at the end of Year 12.

Do I have to take another Science at 'A' Level to do Physics?

There is an advantage to doing more than one Science subject at 'A' level, as the subjects are inter-related. Students who do one or more other sciences generally get better grades than students who have only chosen Physics.

Do I have to be good at Mathematics to do Physics?

You should be comfortable with using equations and as there is a significant amount of Mathematics involved in the course, we ask that all Physics students at JFS also take Mathematics at 'AS' Level. However, we have occasionally made exceptions as the most important thing is that you should be good at Physics (and enjoy it) to do 'A' Level Physics.