

# OCR A LEVEL PHYSICS: A COMPLETE GUIDE FOR NEW TEACHERS

CODE **8750**

## ABOUT THIS COURSE

This course is specifically targeted and designed for all teachers new or recently new to teaching OCR A Level Physics. The sessions are designed to improve teachers' understanding of the OCR specification and ensure their students have the best opportunity to maximise potential grades.

The course will focus on an introduction to and overview of the specification, the key challenges, the standard, the transition from GCSE to A level, and provide all teachers with a range of effective teaching approaches, ideas and techniques, as well as key guidance in how to develop with advice on the exam, standards and best ways to prepare students.

Emphasis will also be on practical strategies on how to get the most from practical work and how to successfully build in the maths skills into your lessons.

## PROGRAMME

**Overview of the OCR A Level Physics course including challenges and what to expect from pupils** 10.00 – 11.00am

- Overview of the specification and how the course is organised
- Ensuring students and teachers hit the ground running in September – introducing the scheme of work and baseline assessment
- Recognising which areas will be most challenging for you and how to address these issues
- Ensuring topic areas which create the foundation for success – incorporating them into every lesson

Discussion: coffee break 11.00 – 11.15am

**Focus on Key ideas for teaching the content knowledge from Paper 1** 11.15 – 12.15pm

- Practical strategies to develop students' use of technical language and scientific terms
- Ways to build students' confidence when applying scientific knowledge, principles and concepts in unfamiliar contexts
- Assessing the students' baseline skills and developing a transitional programme from GCSE to A-level
- Developing good study habits for A level success

**How to Effectively Embed Maths Skills into your teaching** 12.15 – 1.00pm

- Analysing ways to embed maths skills in teaching to develop the key numeracy skills required for A level Physics – conversion of metric units, rounding numbers to optimum form, graph-plotting and effective calculator use.
- Developing student confidence with algebraic and trigonometric processes which are at the core of advanced physics
- Ensuring that students can present their problem-solving processes using in a clear, logical and accurate manner

Lunch and informal discussion 1.00 – 2.00pm

**Effectively teaching the Practical Skills** 2.00 – 2.45pm

- The essential terminology that needs constant reinforcement – the 'language of measurement' such as accuracy, precision and validity
- Direct assessment of practical skills in the PAGs – an overview of the required standards and what the moderators are looking for in the students' evidence and in the teacher's records
- Teaching experimental design – activities that build students' confidence in selecting apparatus, equipment and techniques
- Developing students' evaluation skills – strategies to help them identify limitations in experimental procedures and suggest improvements.
- Teaching students the skills of describing data, explaining data and making conclusions in response to exam questions

**Key ideas for teaching electricity and waves** 2.45 – 3.30pm

- Effective method for analysing and solving electric circuit problems – particularly, voltage dividers and use of thermistors and LDRs
- Teaching key waves concepts such as phase difference, superposition and coherence
- Analysing standing wave scenarios to identify harmonics and calculate frequencies and wavelengths
- Developing an effective practical programme to increase students' understanding of the theory as well as refining their practical skills
- Widening students' knowledge of the application of the theories to technological developments like optical fibres, satellites and space telescopes etc.
- Deepening understanding of spectroscopic techniques to discover the structure of the atom and the nature of the Universe.

**How to maximise students' exam performance** 3.30 – 4.00pm

- Methodologies that boost student attainment: how to improve students by one grade, targeting top grades (A-A\*).
- Teaching towards the 'endgame', what language to use, ensure you are marking 'like the examiner' and secure grading
- Exam questions and model answers, looking at what success looks like

LOCATION/DATE

**London**

**Friday 27 May 2022**

**Friday 25 November 2022**

## WHO SHOULD ATTEND?

- New or recently new teachers of AQA A Level Physics
- Heads of Physics
- Heads of Science
- Mentors responsible for new teachers in Science

## BENEFITS OF ATTENDING

- Fully understand the complexities of the AQA A Level Physics specification
- Gain insight into the content, the exam structure and the how exams are marked
- Develop ways to improve outcomes across the ability range
- Examine lots of ideas on how the maths and practical skills can be embedded throughout the course
- Take away some activities that can be adapted for use when teaching a range of different topics