



**Year 9-to-10 / Pre-IGCSE Introductory Science Course**

This course is aimed at providing students, who will typically enrol in Edexcel triple-science or CIE triple-science for their IGCSE studies, with a solid foundation of mathematical skills and understanding of scientific principles, and their applications in problem solving.

The first half of this course involves the development of mathematical skills, examples of the scientific method, data presentation and analysis. The second half of this course will feature an account of science at the microscopic scale, and its connection to macroscopic observations.

Akademia's highly experienced tutors have developed extensive notes, handouts and worked examples that will provide students with a clear understanding of all aspects of science, allowing them to systematically solve a wide range of scientific problems.

The course can be delivered on a 1-to-1 basis or a group setting.

Instructor: Dr. Jenkins Tsang

## **Course content**

### The scientific method

Correlation and causation

A controlled experiment

Graphical representation of data

### Mathematical skills, including

Ratios and proportions, percentage changes

Graphs - gradients, intercepts, areas and their interpretation

Scientific unit conversions

Calculations involving standard-form numbers and metric multipliers

### Microscopic science:

Fundamental microscopic properties: mass, charge, photons

Particle kinetic theory of matter

Particles of chemistry - electrons, atoms, molecules and ions

### Macroscopic science

Physics: forces, motion, energy

Chemistry: physical and chemical properties of substances

Biology: levels of organization - from a molecular level to an organismal level