

## ■ IB HL Biology

### Introduction

The IB Biology course provides an excellent grounding of knowledge, techniques and experiences for the committed life scientist hoping to pursue a related degree or career. It dovetails effectively with a range of other subjects, providing insight into applications of science, the workings of the scientific community and core global and ethical issues. These ideas are founded on a detailed theoretical knowledge developed during the course. The course will provide ample opportunities for students to develop their potential in the Theory of Knowledge and Extended Essay parts of the IB Diploma. Emphasis is placed on thinking skills, problem solving and consideration of some of the key skills in science - analysis, evaluation and synthesis of knowledge. Biology is a practical subject and its experiences are developed through use of a range of apparatus and ICT equipment which complements hands-on practical work. Investigative work forms a spine of the biologist's studies and its emphasis is rightly encouraged in the course. This includes the 'Group 4 Project' in collaboration with those studying physics, chemistry and design technology.

### Content

Four basic concepts run throughout the course. These are: **structure and function, universality versus diversity, equilibrium within systems and evolution.**

The core at Higher Level comprises the following topics.

1. Cells
2. The chemistry of life
3. Genetics
4. Ecology and evolution
5. Human health and physiology
6. Nucleic acids and proteins
7. Cell respiration and photosynthesis
8. Genetics
9. Human reproduction
10. Defence against infectious disease
11. Nerves, muscles and movement
12. Excretion
13. Plant science

The options available are two from:

- Evolution,
- Neurobiology and behaviour
- Applied plant and animal science
- Ecology and conservation
- Further human physiology

### Assessment

The course is examined through three written papers contributing a total of 76% of the final grade. The papers cover a range of multiple-choice, structured and extended response questions, which solve a substantial problem or carry out a piece of analysis or evaluation. The remaining 24% of the marks come from the investigative skills developed over the course and during the Group 4 project.