

Anglo – Chinese School (Independent)
International Baccalaureate Diploma Programme
Course outline – Year 5 Biology Higher Level

Topic 1 : Cell biology

- 1.1 Introduction to cells
- 1.2 Ultrastructure of cells
- 1.3 Membrane structure
- 1.4 Membrane transport
- 1.5 The origin of cells
- 1.6 Cell division

Topic 2 : Molecular biology

- 2.1 Molecules to metabolism
- 2.2 Water
- 2.3 Carbohydrates and lipids
- 2.4 Proteins
- 2.5 Enzymes
- 2.6 Structure of DNA and RNA
- 2.7 DNA replication, transcription & translation
- 2.8 Cell respiration
- 2.9 Photosynthesis

Topic 3 : Genetics

- 3.1 Genes
- 3.2 Chromosomes
- 3.3 Meiosis
- 3.4 Inheritance
- 3.5 Genetic engineering and biotechnology

Topic 7 : Nucleic acids

- 7.1 DNA structure and replication
- 7.2 Transcription and gene expression
- 7.3 Translation

Topic 8 : Metabolism, cell respiration and photosynthesis

- 8.1 Metabolism
- 8.2 Cell respiration
- 8.3 Photosynthesis

Topic 4 : Ecology

- 4.1 Species, communities and ecosystems
- 4.2 Energy flow
- 4.3 Carbon cycling
- 4.4 Climate change

Topic 5 : Evolution and biodiversity

- 5.1 Evidence for evolution
- 5.2 Natural selection
- 5.3 Classification of biodiversity
- 5.4 Cladistics

Topic 10 : Genetics and evolution

- 10.1 Meiosis
- 10.2 Inheritance
- 10.3 Gene pools and speciation