



PINEWOOD – THE AMERICAN INTERNATIONAL SCHOOL OF THESSALONIKI, GREECE

NAME OF COURSE: Biology IB2 / Honors II

GRADE LEVEL: 12

SCHOOL YEAR: 2011 – 2012

COURSE DESCRIPTION

This course is a continuation of the Biology IB1 / honors course and is designed for students who intend to take the IB exam in Biology or plan to study a science program in college. The course emphasizes the experimental nature of biology with many laboratory investigations. Topics are studied in depth and include: Genetics, ecology and evolution; neurobiology and behaviour further human physiology and plant science.

LEARNING OBJECTIVES

- To gain knowledge in concepts of genetics: chromosomes, genes, alleles, mutations, meiosis, theoretical genetics, genetic engineering and other aspects of biotechnology
- To study relevant ecosystems and evolution
- To understand concepts in behavioural science.
- To gain in depth knowledge in concepts of human health and physiology including the digestive, circulatory, immune, breathing, excretory and reproductive systems.
- To understand concepts in Plant science: plant structure, transport in angiospermophytes; reproduction in flowering plants.

SCOPE AND SEQUENCE *

QUARTER I

Topic 4 : GENETICS

- 4.1 Chromosomes, genes, alleles and mutations
- 4.2 Meiosis
- 4.3 Theoretical genetics
- 4.4 Genetic engineering and biotechnology

HL

- 10.1 Meiosis
- 10.2 Dihybrid crosses and gene linkage
- 10.3 Polygenic inheritance.

QUARTER II

Topic 5: ECOLOGY AND EVOLUTION

- 5.1 Communities and ecosystems
- 5.2 The greenhouse effect
- 5.3 Populations
- 5.4 Evolution
- 5.5 Classification

Option H (HL): FURTHER HUMAN PHYSIOLOGY

- H1 Hormonal control
- H2 Digestion
- H3 Absorption of digested food
- H4 Functions of the liver
- H5 The transport system
- H6 Gas exchange

QUARTER III

OPTION E (SL & HL): NEUROBIOLOGY AND BEHAVIOUR

- E1 Stimulus and response
- E2 Perception of stimuli
- E3 Innate and learned behavior
- E4 Neuro-transmitters and synapses
- E5 The human brain
- E6 Further studies of behavior.

Topic 9 (HL): PLANT SCIENCE (HL):

- 9.1 Plant structure and growth
- 9.2 Transport in angiospermophytes
- 9.3 Reproduction in angiospermophytes

QUARTER IV

Review for IB external exams

**Note that the order in scope and sequence is subject to change during the school year.*

HOMEWORK POLICY

Homework will be issued a minimum of twice per week. Students will be given a minimum of two days to complete homework. Work not handed in by the deadline will be penalized. 10 % is deducted from work handed in one day late and 20 % from work handed in two days late. Work over two days late will not be accepted.

ASSESSMENT

Grades are given for:

- Tests, quizzes and semester exams prepared using questions from past IB exam papers.
- Homework and class-work assignments used for reinforcement, review and evaluation.
- Laboratory reports and manipulative skills during experimental procedures
- Student effort, application and behavior

- Group work skills exhibited during the Group 4 project.

Assessment of Pinewood Quarter Mark:

Tests	40%
Quizzes	10%
Laboratories	20%
Homework	20%
Effort, application and participation	10%
Total	100%

(Science Project 30% of 4th quarter grade)

Assessment of Pinewood Semester ½ Mark:

1 st Quarter	40%
2 nd Quarter	40%
Exam	20%
Semester	100%

Assessment of Pinewood Final Mark:

Semester 1	50%
Semester 2	50%
Final	100%

Assessment of IB Mark:

External assessment (exams)	76%
Internal assessment (experimental work and Group 4 project)	24%
Final	100%

RESOURCES

Student Texts:

Peeters Weem, M, Talbot, C, Mayrhofer, A, 2008, 3rd Edition International Baccalaureate Biology, IBID Press, Victoria.

Supporting Texts:

Campbell, N. Reece, J, 2005 BIOLOGY 7th Edition, Pearson Benjamin Cummings

Laboratory Manuals: Green, J. and D. Greig. 1999 A Portfolio of Investigations for use with the IB Biology Programme. IBID Press.

ACADEMIC HONESTY

Academic honesty is fundamental to the integrity and operation of our school. Acts of academic dishonesty, including plagiarism (the act of presenting others' words and ideas as one's own without crediting the source), stealing in quizzes and tests, copying work from other students or allowing their own work to be copied, or using notes during a test, are considered serious offenses. The consequences of academic dishonesty will be a zero grade on the specific test/assignment, and additional disciplinary action. The said student will be ineligible or removed from the National Honor Society.