AP Biology Course Syllabus 2011-2012

Ms. Harvey @ CCHS

rharvey@psusd.us

**SUMMER UNIT: ECOLOGY**

1. **ECOLOGY** (Aug. 29-Sept. 2)

Readings in Biology by Campbell (7th ed.):

**Ch.50. An Introduction to Ecology & the Biosphere**

**Ch.51. Behavioral Ecology**

**Ch.52. Population Ecology**

**Ch.53. Community Ecology**

**Ch.54. Ecosystems**

**Ch.55. Conservation Biology & Restoration Ecology**

Lab Due

* *Lab #11 Animal Behavior*

**UNIT I: MOLECULES AND CELLS**

**A. BIOCHEMISTRY** (Sept. 6 – Sept.13)

Readings in Biology by Campbell (7th ed.):

**Ch.2. The Chemical Context of Life**

**Ch.3. Water and the Fitness of the Environment**

**Ch.4. Carbon and the Molecular Diversity of Life**

**Ch.5. The Structure and Function of Macromolecules**

**Ch.8. An Introduction to Metabolism**

Lab Due

* *Lab #2 Enzyme Catalysis*

**B. CELLS** (Sep.14 – Sept. 30)

Readings in Biology by Campbell (7th ed.):

**Ch.6. A Tour of the Cell**

**Ch. 7. Membrane Structure and Function**

**Ch.11. Cell Communication**

Lab Due

###### Lab #1 Diffusion and Osmosis

**C. PHOTOSYNTHESIS AND RESPIRATION** (Oct.3 - Oct.25)

Readings in Biology by Campbell (7th ed.):

**Ch.10. Photosynthesis**

**Ch.9. Cellular Respiration: Harvesting Chemical Energy**

Labs Due

* *Lab #4 Plant Pigments & Photosynthesis*
* *Lab #5 Cellular Respiration*
* *Lab #12 Dissolved Oxygen*

**UNIT II: GENETICS AND EVOLUTION**

**A. CELLULAR REPRODUCTION & MENDELIAN GENETICS** (Oct. 26 - Nov. 16)

Readings in Biology by Campbell (7th ed.):

**Ch.12. The Cell Cycle**

**Ch.13. Meiosis and Sexual Life Cycles**

**Ch.14. Mendel and the Gene Idea**

**Ch.15. The Chromosomal Basis of Inheritance**

**Ch.16. The Molecular Basis of Inheritance**

Labs Due

* *Lab #3 Mitosis & Meiosis*
* *Lab #7 Genetics of Organisms*

**B. MOLECULAR GENETICS** (Nov. 17 – Dec. 16)

Readings in Biology by Campbell (7th ed.):

**Ch.17. From Gene to Protein**

**CH.18. The Genetics of Viruses and Bacteria**

**Ch.19. Eukaryotic Genomes: Organization, Regulation, and Evolution**

**Ch.20. DNA Technology and Genomics**

**Ch.21. The Genetic Basis of Development**

Labs Due

* *Lab #6A Bacterial Transformation using pGLO* “glow in the dark” bacteria lab
* *Lab #6B DNA Electrophoresis*

**------------------------------ WINTER BREAK ---------------------------**

\*\*\*\*BREAK ASSIGNMENT – Due Jan. 3 – “Parade Through The Kingdoms” download handout from class webpage

**------------------------- AFTER WINTER BREAK ----------------------**

**C. EVOLUTION** (Jan 3 – Jan 20)

Readings in Biology by Campbell (7th ed.):

**Ch.22. Descent with Modification: A Darwinian View of Life**

**Ch.23. The Evolution of Populations**

**Ch.24. The Origin of Species**

**Ch.25. Phylogeny and Systematics**

# Lab Due

* *Lab #8 Population Genetics*

**------------------------- END OF 1ST SEMESTER ----------------------**

**UNIT III: ORGANISMS AND POPULATIONS**

**A. PLANTS: DIVERSITY, ANATOMY, & PHYSIOLOGY** (Jan 23 – Feb 10)

Readings in Biology by Campbell (7th ed.):

**Ch.29. Plant Diversity I: How Plants Colonized Land**

**Ch.30. Plant Diversity II: The Evolution of Seed Plants**

**Ch.35. Plant Structure, Growth, and Development**

**Ch.36. Transport in Vascular Plants**

**Ch.37. Plant Nutrition**

**Ch.38. Angiosperm Reproduction and Biotechnology**

**Ch.39. Plant Responses to Internal and External Signals**

Labs Due

* *Lab #9 Transpiration*

**B. ANIMALS: THEIR DIVERSITY, ANATOMY, PHYSIOLOGY, AND BEHAVIOR** (Feb 14 – March 30) **Students leaving early for spring break trips must take the animal unit exam BEFORE their departure, arrange this with Ms. Harvey well in advance of your departure date.**

Readings in Biology by Campbell (7th ed.):

**Ch.41. Animal Nutrition**

**Ch.42. Circulation and Gas Exchange**

**Ch.43. The Immune System**

**Ch.44. Osmoregulation and Excretion**

**Ch.45. Hormones and the Endocrine System**

**Ch.46. Animal Reproduction**

**Ch.47. Animal Development**

**Ch.48. Nervous Systems**

**Ch.49. Sensory and Motor Mechanisms**

Labs Due

* *Lab #10 Circulatory Physiology*

April 9 - May 11: Review for AP Biology Exam

2012 ADVANCED PLACEMENT BIOLOGY EXAM - MONDAY, MAY 14

Post exam there will be labs, films and research projects.