



Southern Lehigh School District

High School Syllabus

Biology I 2013-2014

Course Description:

Biology I has been developed to meet the state standards for Science & Technology and Ecology & Environment.

Biology I is designed for the college bound student. Throughout the course, students will perform various hands-on applications of course concepts and experiments. Students will then have to display mastery of these concepts in lab reports and other assessments.

The following topics are discussed and studied throughout the Biology I course: Scientific Method, Cells, Cell Cycle, DNA, Genetics, Evolution, and Ecology.

Course Content:

Science of Biology:

- What is science
- How scientists work & the scientific method
- Characteristics of life
- Scientific tools and measurement
- Introduction to the chemistry of macromolecules

Cell Structure & Function:

- Cell theory & types
- Cell structures form & function
- Photosynthesis
- Cellular Respiration
- Movement into/out of cells
- Levels of cellular organization

Cell Growth & Division:

- Limits to cell growth
- Cell division (Mitosis)
- Virus Cycles
- Regulating the cell cycle

Genetics:

- Several patterns of inheritance
- Probability & punnett squares
- Meiosis
- Genetic technologies & their impact

DNA/RNA:

- DNA Discovery
- DNA/RNA Structure
- DNA Replication
- RNA transcription/translation
- Mutations

Evolution:

- Contributing scientists
- Natural selection
- History of Life
- How populations evolve
- Ecology
 - Ecosystems
 - Population Dynamics
 - Relationships
 - Biogeochemical Cycles
 - Human Impact
 - Succession
 - IPM
 - Threatened, Endangered, and Invasive Species
 - Natural resources (technology, policies, management, conservation)

Required Textbooks and/or Other Reading/Research Materials

Biology by Miller & Levine, Pearson, 2010 (students will each have access to a digital version of this text)

Science World Magazine by Scholastic

Course Requirements:

Students are expected to take an active role in their education by completing independent reading and note taking assignments, consistently completing assignments both in class and at home, conducting laboratory investigations and reporting results and analysis through lab reports, and being responsible for their own appropriate classroom and laboratory behavior. Failure to complete assignments and submit them on-time will adversely affect the students grade.

Grade Components/Assessments:

The grades will be based on a point system that is converted into overall percentages.

The following methods will be used to assess and evaluate student performance:

- Homework: 20-25%
- Classwork: 10-20%
- Labs: 20-25%
- Test/quizzes: 30-40%
- Projects/papers: 10-15%

Throughout the year percentages may change depending on the content covered that quarter. Students should expect to devote an average of 30 minutes to homework/studying each night.

Each marking period is worth 20% of a student's overall grade. The midterm and final exam are each worth 10% of a student's overall average:

Quarter 1	20%
Quarter 2	20%
Midterm	10%
Quarter 3	20%
Quarter 4	20%
Final	10%

Required Summer Reading/Assignments:

There are no summer reading requirements for this course.