South Williamsport Area School District
Course Plan Template

Teacher: Scott Manning	**School Year: 2014-15**
Course: Advanced Biology	**Intended Grade Level: 9**
Course Summary: Students will study basic biology concepts and processes in depth in preparation for the Keystone Biology Exam at the end of the course.	
Course Outcomes: ***By the end of the course, students will know: basic concepts and processes of the science of biology in detail.*** ***By the end of the course, students will be able to: Score advanced on the Keystone Biology Exam.***	
Standards Targeted[1] Pennsylvania Core Biology Standards	

Units of Study	
Units Topic	**Primary Learning Outcome**
BIO.A.1 Basic Biological Principles	• Explain the characteristics common to all organisms. • Describe relationships between structure and function at biological levels of organization.
BIO.A.2 The Chemical Basis for Life	• Describe how the unique properties of water support life on Earth. • Describe and interpret relationships between structure and function at various levels of biochemical organization (i.e., atoms, molecules, and macromolecules). • Explain how enzymes regulate biochemical reactions within a cell.
BIO.A.3 Bioenergetics	• Identify and describe the cell structures involved in processing energy. • Identify and describe how organisms obtain and transform energy for their life processes.
BIO.A.4 Homeostasis and Transport	• Identify and describe the cell structures involved in transport of materials into, out of, and throughout a cell. • Explain mechanisms that permit organisms to maintain biological balance between their internal and external environments.

[1] Indicate primary Standards emphasis:
- PA Core - Math / ELA / Science & Technology / History & Social Studies
- National Content Standards (Name and Type)
- Industry Recognized Standards (Name and Type)

BIO.B.1 Cell Growth and Reproduction	• Describe the three stages of the cell cycle: interphase, nuclear division, cytokinesis. • Explain how genetic information is inherited.
BIO.B.2 Genetics	• Compare Mendelian and non-Mendelian patterns of inheritance. • Explain the process of protein synthesis (i.e., transcription, • translation, and protein modification). • Explain how genetic information is expressed. Apply scientific thinking, processes, tools, and technologies in the study of genetics.
BIO.B.3 Theory of Evolution	• Explain the mechanisms of evolution. • Analyze the sources of evidence for biological evolution. • Apply scientific thinking, processes, tools, and technologies in the study of the theory of evolution.
BIO.B.4 Ecology	• Describe ecological levels of organization in the biosphere. • Describe interactions and relationships in an ecosystem.

Advanced Learner Recommendations

- Advanced Learners with GIEPs: All Specially Design Instruction is followed as outlined by the student's Gifted Individualized Education Plan.
- Advanced Learners without GIEPs: Ability grouping (Advanced Biology), performance-based assessments (ex: projects and papers), upper-level questioning, and critical thinking exercises.

Struggling Learner Recommendations

- Struggling Learners with IEPs: All accommodations/modifications are followed as outlined by the student's Individualized Education Plan. Examples: extended time, small group testing, study guides, test read aloud, and modifications made to the regular education curriculum.
- Struggling Learners without IEPs: Available during the daily FLEX period to ask questions or review materials, restating of directions, project-based assessments (ex: projects, homework, notebook grades), and instruction that incorporates the different types of learning modalities (ex: visual, auditory, or kinesthetic).