Department: Science **Course Title: *APPLIED BIOLOGY*** **Course #: 512**

DESCRIPTION OF COURSE:

Students will understand basic concepts and techniques of modern biology. Topics include: cell structure and function; the cell cycle and cellular division; the chemistry and function of biological macromolecules; the activities that occur within ecosystems; methods of maintaining homeostasis; the role of DNA in protein synthesis, genetics and evolution; classification; Mendelian and Nonmendelian genetics; human genetic disorders; applications of modern biotechnology; and principles of evolution. The Scientific Method will be employed to solve laboratory experiments. Assessments include laboratory reports, projects, quizzes, and tests.

REQUIRED TOPICS OF STUDY	SUGGESTED INTRUCTIONAL TIME	STANDARDS/ ASSESSMENT ANCHORS
Laboratory Safety; Introduction to Biology; Scientific Method; Introduction to Evolution	*5-6 Days*	*Standards: 3.2.10.B;C;D* *Anchors: S11.A.1; S11.A.2; S11.A.3*
Characteristics of Life; Classification	*5 Days*	*Standards: 3.3.10.A* *Anchors: S11.B.1; S11.B.2; S11.A.3*
Chemistry and Biochemistry	*10-12 Days*	*Standards: 3.4.10.A; 3.3.10.B* *Anchors: S11.C.1; S11.B.1*
Cell Biology	*10-12 Days*	*Standards: 3.3.10.A;B* *Anchors: S11.B.1.1; S11.A.1.1*
Bioenergetics	*5 Days*	*Standards: 3.3.10.B* *Anchors: S11.B.1*
Cell Division	*10 Days*	*Standards: 3.3.10.C* *Anchors: S11.B.1; S11.B.2*
Genetics and Biotechnology	*20 Days*	*Standards: 3.3.10.C* *Anchors: S11.B.2; S11.A.3.2*
Molecular Biology	*10 Days*	*Standards: 3.3.10.C* *Anchors: S11.B.1.1; S11.B.2*
Evolution	*5 Days*	*Standards: 3.3.10.D* *Anchors: S11.B.2.1*
Ecology	*5 Days*	*Standards: 3.3.10.C;D* *Anchors: S11.B.3*

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INSTRUCTIONAL RESOURCES:

Biology: The Living Science.
by Miller & Levine.