Course Title: *APPLIED BIOLOGY*  
Course #: 512

**DESCRIPTON 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.

<table>
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<tr>
<th>REQUIRED TOPICS OF STUDY</th>
<th>SUGGESTED INSTRUCTIONAL TIME</th>
<th>STANDARDS/ ASSESSMENT ANCHORS</th>
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| 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                                                   |

**INSTRUCTIONAL RESOURCES:**

*Biology: The Living Science.*  
by Miller & Levine.

Course Title/ct  
3/07 FOR HS