TAKOMA ACADEMY

[BIOLOGY SYLLABUS]

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| **Teacher Name:**<br><br>**Mr. Robinson** | **Room # 12** |
| **Contact Info: 301-434-4700**<br>**Email:**<br>**srobinson@ta.edu** | **Check –in Times:**<br>**Mon/Wed 8:00 – 9:40 am** |

**Course Description:**

This course will cover the general science topic of Biology on a high school level. The topics covered will include core standards as expressed in the Next Generation Science Standards and the North American Division of Seventh-day Adventists educational standards. Subject matter will include Life Science and the cell, Heredity, Evolution and Natural Selection, Systems and the Interdependence of Organisms, Energy and Matter, the Behavior of Organisms, Earth and Space Science, Technology and its relationship to Science, Science and how it relates to humans in society and the History of Science.

**Student Learning Outcomes:**

The purpose of this course is to expose the student to the basic concepts of biology and the study of living organisms. A broad objective of the course is to provide students with the knowledge of core standards of the subjects listed above. A more specific objective of the course is to assist the student in

developing an appreciation for the importance of the knowledge of biology and the study of living things as it relates to daily life, health, the future of the planet and possible career opportunities in a related field. Science and Biology are subjects that should be regarded as important not only to scientists, but to everyone. This course will help give students that respect and appreciation for the study of life, and will show how relevant and important it is to them and society as a whole. By the end of the course, students should be able to identify basic parts of a cell and the human body, understand the various systems in the body, have a good knowledge of the theories on the origins of life and evolution, understand how organisms are classified into systems, have a greater knowledge of matter and energy, identify how science and technology work together, and will gain insight as to the history of biology and its importance to their communities and society as a whole.

**Textbooks:**

The required text will be given to students. *Biology.* 2017. Glencoe Science. Published by McGraw Hill.

**Required Materials:**

Students should have a separate notebook dedicated to this course. A binder or folder is recommended for handouts or coursework given to them by the instructor. Students must bring their own writing utensils to class. Internet access will be necessary as some course material will be assigned through online mediums like Renweb, Edmodo.com, Quizlet.com or YouTube.

**Standard – Based Teaching/Grading:**

Takoma Academy teachers use activities and lessons to ensure that students master a predetermined set of requirements or standards. When viewing progress reports families will be able to see the standards that students are expected to master.

**Attendance/Tardy Policy:**
*All students are expected to be present and on time every day of the school year. Students will receive a daily attendance grade.*

*Every student is expected to develop promptness by meeting each appointment on time. Students will receive 1 point daily for being on time to class.*

*A student is considered tardy if they are not seated in the classroom, chapel or at their workstation at the exact time the class begins. Students will receive a 0 for an unexcused tardy (TU).*

*Students are allowed three (3) unexcused tardies per semester.*
*Please keep in mind the following attendance policy below:*

- *3 unexcused tardies = 1 detention*
- *3 unexcused tardies = 1 unexcused absence*
- *5 unexcused absences in same class are subject to a loss of credit*
- *Students may not exceed 6 unexcused absences per semester in any course in order to receive full credit for the course*

*Absences*

Students may not exceed six (6) absences (excused or unexcused) per semester in any course in order to receive credit for the course. Students are considered absent if they miss half or more of the class period. Class attendance as taken by the teacher will be on the official record. There will be no opportunity to make up absences after school. Students with more than six (6) absences may appeal to the Attendance Committee for a waiver based on extenuating circumstances.

Absences that are not counted toward the six absences are those with official doctor's notes, death in the family and pre-arranged absences. Written excuses must be received within one week of the absence, or the absence will remain an unexcused absence. Excuses must be given to the Principal. For your convenience, a box positioned on the wall in the administrative lobby has been designated for absence notes.

*Pre-arranged Family Absences*

Parents requesting permission to take their children on vacations are asked to send a written request to the Principal or Registrar at least one week in advance for approval. Students may miss up to five (5) pre-arranged school days for this purpose during the school year.

If approved, the student must complete the pre-arranged absence form and submit it two (2) days before leaving. Students are responsible for collecting

any assignments they will miss prior to leaving. These missed assignments are due at the first class period after the leave. It is strongly recommended that students enrolled in AP classes reconsider planned vacations during the school year as each class period is vital in preparation for the AP Exam.

*Medical Absences*
Medical Absences will be excused for the following reasons:

- Illness that is documented by a nurse or doctor. Parent's documentation is accepted if the student is at home.
- Illness at home of three days or more requires a doctor's note

**Assignment/Make Up Policy:**
Homework/Late Papers

Students with excused absences will have as many school days as they were absent to make up assignments. Work missed from a pre-arranged absence is due on the first day back in class.

It is the student's responsibility to see his/her teachers to obtain the work and help, if needed. Work not completed within the allowed length of time will be penalized a letter grade for each day late. Any work 4 days late, or more, will result in a zero for that assignment.

Tests that are missed due to excused absences must be made up within the same number of days as the absence (e.g., absent two days, two school days to make up the test). However, if a student is absent just the day before the test or the day of the test, the test must be made up the day he returns.

When a student is given a suspension, all missed work must be made up. Teachers will accept work for credit and reschedule any tests and quizzes missed if the completed homework is turned in on the first day back from a suspension. Additional assignments may be assigned by the Discipline Committee.

**Retake Policy:**
Students are afforded the opportunity to retake or redo up to 3 times selected and approved assignments per semester. Retakes are allowed on all assignments except labs, homework or Final semester exams. Retakes must

also be completed within 5 days of the assignment being marked and handed back to the student.

**Plagiarism/Cheating:**

Takoma Academy is committed to the highest quality of learning experiences. Useful and lasting learning cannot occur unless the learning process which students go through is an honest process that demonstrates their abilities as measured by their own efforts. Cheating only prepares the student for eventual failure rather than success in life. Dishonesty undermines the very foundations of learning and compromises the moral and academic integrity of any institution.

Cheating is a breach of academic integrity and involves one or more of the following actions:

- copying the work of another person, whether homework, papers, quizzes, reports, tests or exams;
- allowing another student to copy work;
- the use or close imitation of someone else's language or thoughts and the representation of them as one's own original work;
- all forms of plagiarism; reading plot summaries, such as Spark/Cliff Notes, or watching videos instead of reading the assigned material;
- obtaining copies of tests, quizzes or exams by any means; asking other students about the content of test, quiz or exam via calculator, cell phone, paper or any other means, whether or not that information is used;
- missing a class to postpone a test or other assignment;
- forging a note from home, from another teacher or from an office;
- pressuring another student to cheat;
- failing to report incidents of cheating; or lying about academic matters.

If it has been satisfactorily determined that an act of cheating has occurred, the violation will be reported to the Principal who will take appropriate disciplinary action. The teacher will personally present the case to the Principal in a meeting with the student present.

*Penalties for Cheating*

First offense – One day suspension from all classes with a zero for the assignment, test or exam in question.

Second offense – Loss of credit in the course, in which the second infraction occurred, for the grading period as well as possible suspension or expulsion.

**Progress Reports:** Progress reports will be issued to all students as scheduled by Administration.

**Course Standards:**

Course standards are taken from the Next Generation Science Standards and Biology Standards as set forth by the SDA church. They include, but are not limited to, the following:

NGSS Standards (www.nextgenscience.org)

HS-LS1-1. Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells.

HS-LS1-2. Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.

HS-LS1-3. Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.

HS-LS1-4. Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.

HS-LS1-5. Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.

HS-LS1-6. Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.

HS-LS1-7. Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy.

HS-LS3-1. Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.

HS-LS3-2. Make and defend a claim based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.

HS-LS3-3. Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.

HS-LS4-1. Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.

HS-LS4-2. Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.

HS-LS4-4. Construct an explanation based on evidence for how natural selection leads to adaptation of populations.

HS-LS4-5. Evaluate the evidence supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.

Adventist Education Standards (www.adventisteducation.org)

BIO1.4 Be able to understand basic biological concepts.

BIO1.4.1 Acknowledge God as Creator of life while recognizing divergent theories.

BIO1.4.2 Demonstrate understanding of cellular structures and processes.

BIO1.4.3 Describe the dynamics of genetics and biotechnology.

BIO1.4.4 Investigate taxonomy and the relationships among living organisms.

BIO1.4.5 Comprehend the interdependence between organisms and their environment.

BIO1.7 Be able to apply the principles of biology to health, life, and earth's environment.

BIO1.7.1 Develop a personal ethical value system regarding a world view of life.

BIO1.7.2 Utilize biological concepts to influence lifestyle choices.

BIO1.7.3 Minimize damage to the environment by practicing good stewardship.

BIO2.1 Identify SDA Christian principles and values in correlation with science.

BIO2.1.1 Recognize God's power as Designer, Creator, Sustainer, and Redeemer in the universe.

BIO2.1.2 Acknowledge God as the Author of all scientific principles and laws regardless of man's interpretation.

BIO2.1.3 Develop stewardship and service attitudes toward health, life, and earth's environment.

BIO2.1.4 Apply Biblical principles of Christian morality, integrity, and ethical behavior to all aspects of life.

BIO2.1.5 Equip students with Christian perspectives on scientific issues.

BIO2.5.1 Manipulate invertebrate and vertebrate animals.

BIO2.5.2 Investigate the reproductive processes within organisms.

BIO2.6.5 Analyze the importance of plant life to human life.

BIO2.6.6 Validate God as the Author of life, while studying major areas of Biology II.

BIO2.7 Be able to apply the higher concepts of Biology II to life.

BIO2.7.1 Strengthen belief in God as Designer and Creator by applying the higher concepts of Biology.

BIO2.7.2 Utilize the concepts of Biology I to improve lifestyle choices.

BIO2.7.3 Apply the study of Biology I to ethical issues regarding life.