I. COURSE DESCRIPTION

Life science (SCI 0700) is an amazing journey that allows students to know God better through the study of His creation. This life science course will expand upon previous learning and set the foundation for science in high school. Students need to know the better they learn and understand the concepts presented in the life science course, the easier and more rewarding their high school courses will be. The student's understanding should encompass both the micro and macro aspects of life, and this life science course includes both. The major concepts covered are scientific inquiry, cells, organization of life, classification, cell processes, population dynamics, differences between and effects of biotic and abiotic factors, ecosystem dynamics, genetics and its applications, and change over time (micro-evolution vs. macro-evolution).

II. RATIONALE

Students at this level should show development in their ability and understanding of scientific inquiry. The units contain experiments and projects that seek to develop a deeper conceptual meaning for the student and actively engage the student. The continued exposure of science concepts and scientific inquiry will serve to improve the student's skill and understanding as well as teach the student how his or her life is affected by these factors and how he or she affects the environment in which they live. Scientific inquiry will be introduced in module one, but will be seen and utilized throughout a series of activities through this course. The goal is to ensure that each student has a thorough understanding and feel for the entire process of scientific inquiry.

III. PREREQUISITES

None.

IV. MATERIALS LIST

Module One: Learning Lab One: Penny Drops Lab (Scientific Method)
One penny or other coin
One squeeze dropper
Wax paper
Book
Paper towel
Printed lab sheet, paper and pencils

**Module Two: Gummy Bear Lab (Graphing)**
5-7 gummy bears or other gummy candy
One scale (preferably in grams)
Printed lab sheet, paper and pencils

**Module Three: Putting It All Together**
Varies depending on your chosen experiment. It could be anything.
Paper and pencils

**Module Four: Product Testing Lab**
Different brands of the same product or different products for testing viscosity (resistance to flowing).
Cardboard, tile, wood, or any other surface on which the liquids can flow freely
Printed lab sheet, paper and pencils

**Module Six: Bean Classification Lab (Classification Organisms)**
10 different kinds of beans (ie: lentil, black eye pea, green bean, etc.)
Printed lab sheet, paper and pencil
Module Seven: Building a Baby (Genetics)
Coin with a heads or tails
Printed lab sheet and pencils

**Module Eight: Building a Niche**
Items for building an Ecosystem (will vary based on the ecosystem chosen)
Examples could include sand, small branches with leaves, rocks, and toy animals.

V. **Measurable Learning Outcomes**

**Upon completion of the course, students should be able to do the following:**

A. Classify different animals using taxonomy.

B. Explain how organisms play a role in an ecosystem and how the biotic and abiotic factors of that ecosystem influence each organism.

C. Describe cells, their different parts, and the function of a cell.

D. Explain that symbiotic and competitive relationships among organisms exist and how they are observed in nature.

E. Describe and explain the function of each system in the human body.

F. Perform Punnett square functions to determine probability of inheritance.
G. Compare and contrast between the carbon, water, and nitrogen cycles.

H. Understand the impact man has on the environment.

I. Understand and communicate how change can happen over time.

J. Describe cell processes and explain how these processes help the cycle of life continue.

VI. COURSE REQUIREMENTS AND ASSIGNMENTS
   A. Individual lesson assessments (1 per lesson)
   B. 3 Quizzes per Module
   C. 1-Chronology/Writing Assessment per Module
   D. 1-2 Lab experiments/investigations per Module
   E. 1 Exploring the concept assignment per Module
   F. 1 Test per Unit
   G. 1 Midterm Exam and 1 Final Exam

VII. COURSE GRADING AND POLICIES
   A. Grading Weights
      Lesson Assignments 25%
      Quizzes, Labs and Written Assignments 35%
      Tests 40%

   B. Scale
      A 90 – 100
      B 80 – 89
      C 70 – 79
      D 60 – 69
      F Below 60

VIII. Other Policies
   A. Academic Misconduct
      See pages 32-35 of your Student Handbook
   B. Repeating Assignments
      Students may repeat lesson twice. Quizzes and tests cannot be repeated to gain a higher grade. Quizzes and tests may be reset for technical issues, but a new set of questions will be generated.