1. **COURSE TITLE\*:** Introduction to Physical Science
2. **CATALOG PREFIX:** PHYS. **COURSE NUMBER:** 1101 **COURSE SECTION\*:**
3. **PREREQUISITE(S)\*:** None **COREQUISITE(S)\*:** None
4. **COURSE TIME/LOCATION: (*Course Syllabus – Individual Instructor Specific*)**
5. **CREDIT HOURS\*:** 3 **LECTURE HOURS\*:** 2

 **LABORATORY HOURS\*:** 1**(** 2 **contact) OBSERVATION HOURS\*:** 0

1. **FACULTY CONTACT INFORMATION: *(Course Syllabus – Individual Instructor Specific)***
2. **COURSE DESCRIPTION\*:**

An introductory course designed to allow students to explore the basic concepts of physical science. Students will be introduced to the history and nature of science. The course includes an introduction to the fundamental concepts of physics, chemistry, astronomy, and earth science. Students will be encouraged to explore the relationship between science and everyday life.

1. **LEARNING OUTCOMES\*:**

Upon completion of this course, the student will:

 1. Demonstrate an understanding of the laws of physics including motion, energy, electricity, and light;

 2. Demonstrate an understanding of basic chemistry;

a. be able to balance equations;

b. be able to use the periodic table;

c. demonstrate an understanding of chemical terms;

d. be able to explain atomic reactions;

 3. Demonstrate an understanding of the solar system and universe;

a. be able to describe the size of these systems;

b. be able to describe the makeup and age of these systems;

 4. Demonstrate and understanding of the forces at work on our planet;

a. be able to describe the makeup of our planet;

b. be able to list sources of energy;

c. be able to describe certain weather patterns and conditions.

1. **ADOPTED TEXT(S)\*:**

*The Sciences: An Integrated Approach,*

*8th edition (2017)*

*Trefil, James S.*

*John Wiley & Sons*

*ISBN # 978-1-119-049685-1*

1. **OTHER REQUIRED MATERIALS:** Calculator that is not an app on an internet connected device
2. **GRADING SCALE\*\*\*:**

Grading will follow the policy in the catalog. The scale is as follows:

A: 90 – 100

 B: 80 – 89

 C: 70 – 79

 D: 60 – 69

 F: Below 60

1. **GRADING PROCEDURES OR ASSESSMENTS: (*Course Syllabus – Individual Instructor Specific)]***

Example:

65% of final grade will be from tests, quizzes

 Breakdown of the 65%

60% of your final grade: 3 tests including the final. Each test will consist of a take home and in class portion

5% of your final grade: quizzes, announced and unannounced

20% of final grade will be from homework (some homework assignments may require attendance and participation to receive full credit), labs, attendance, and participation

15% of final grade will be from a class capstone project. Women in STEM

1. **COURSE METHODOLOGY: *(Course Syllabus – Individual Instructor Specific)***

Example:

This course may use lecture, discussion, video, and overhead presentations. The course may include chapter and workbook assignments, hand-in assignments, computer assignments, work projects, research papers, in class discussions, collaborative work with other students, and laboratory activities. Some laboratory activities may involve field trips and investigations.

1. **COURSE OUTLINE:**

Outline by Chapters (\*–Optional):

1. Science: A Way of Knowing

2. The Ordered Universe

3. Energy

4. \*Heat and the Second Law of Thermodynamics

5. Electricity and Magnetism

6. Waves and Electromagnetic Radiation

7. \*Albert Einstein and the Theory of Relativity

8. The Atom

9. Quantum Mechanics

10. Atoms in Combination: The Chemical Bond

11. Materials and Their Properties

12. The Nucleus of the Atom

13. The Ultimate Structure of Matter

14. The Stars

15. Cosmology

16. Earth and Other Planets

17. Plate Tectonics

18. Earth’s Many Cycles

19. Ecology, Ecosystems, and the Environment

20. \*Strategies of Life

21. \*The Living Cell

22. Molecules of Life

23. \*Classical and Modern Genetics

24. \*The New Science of Life

25. \*Evolution

\*Appendix A Human Anatomy

Appendix B Units and Numbers

Appendix C The Geological Time Scale

Appendix D Selected Physical Constants and Astronomical Data

Appendix E Properties of the Planets

Appendix F The Chemical Elements

1. **SPECIFIC MANAGEMENT REQUIREMENTS\*\*\*:**

Suggested pace for the course, by chapter numbers and course objectives:

 Chapter Objective

Week 1: 1

Week 2: 2 1

Week 3: 2 & 3 1, 4b

Week 4: 3 1, 4b

Week 5: 3 & 5 1, 4b

Week 6: 6 & test I review 1, 4b

Week 7: test I & 8 2a, 2b, 2c, 2d

Week 8: 10, 11, 22 WOMAN of INTEREST SELECTED 2a, 2b, 2c, 2d

Week 9: 9 & decay lab  2a, 2b, 2c, 2d

Week 10: 12 & 13 PROJECT SELECTED 2a, 2b, 2c, 2d

Week 11: test II review & test II

Week 12: 14 & 15 WORK DAY FOR PROJECT 3a, 3b, 4a, 4b

Week 13: 16 & astrogeology lab 3a, 3b, 4a, 4b, 4c

Week 14: 17 & 18 FINAL PROJECT PRESENTATIONS 4a, 4b, 4c

Week 15: 18 & 19 4a, 4b, 4c

Week 16: test III (finals week)

**16. FERPA:\***

Students need to understand that your work may be seen by others. Others may see your work when being distributed, during group project work, or if it is chosen for demonstration purposes. Students also need to know that there is a strong possibility that your work may be submitted to other entities for the purpose of plagiarism checks.

**17. DISABILITIES:\***

Students with disabilities may contact the Disability Services Office, Central Campus, at 800-628-7722 or 937-393-3431.

**18. OTHER INFORMATION\*\*\*:**

**SYLLABUS TEMPLATE KEY**

**\*** Item cannot be altered from that which is included in the master syllabus approved by the Curriculum Committee.

**\*\*** Any alteration or addition must be approved by the Curriculum Committee

**\*\*\*** Item should begin with language as approved in the master syllabus but may be added to at the discretion of the