

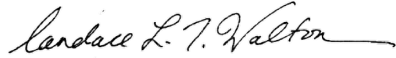
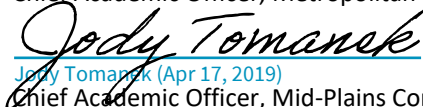

**Syllabus**  
**PHYS1100**  
**Physical Science**  
**2019**

**Committee Members:**

No representative, Central Community College  
Al Martyn, Little Priest Tribal College  
Kendra Sibbersen, Metropolitan Community College  
Jared Daily, Mid-Plains Community College  
Dasha Weatherman, Nebraska Indian Community College  
Kim Timperley, Northeast Community College  
Evan Brunkow, Southeast Community College  
Lorin King, Western Nebraska Community College

**Facilitator: Jared Daily**

**The Institution agrees to the contents in this syllabus including course prefix, number, course description and other contents of this syllabus.**

 Chief Academic Officer, Central Community College	Adopt
<u><a href="#">Manoj Patil</a></u> <a href="#">Manoj Patil (Apr 17, 2019)</a> Chief Academic Officer, Little Priest Tribal College	Adopt
<u><a href="#">Thomas J McDonnell</a></u> <a href="#">Thomas J McDonnell (Apr 17, 2019)</a> Chief Academic Officer, Metropolitan Community College	Decline
 <a href="#">Jody Tomasek (Apr 17, 2019)</a> Chief Academic Officer, Mid-Plains Community College	Adopt
<u><a href="#">Kristine Sudbeck</a></u> <a href="#">Kristine Sudbeck (May 16, 2019)</a> Chief Academic Officer, Nebraska Indian Community College	Adopt
 <a href="#">Lyle Kathol (Apr 17, 2019)</a> Chief Academic Officer, Northeast Community College	Adopt
<u><a href="#">Dennis Headrick</a></u> <a href="#">Dennis Headrick (Apr 17, 2019)</a> Chief Academic Officer, Southeast Community College	Adopt
<u><a href="#">Kim Kuster Dale</a></u> <a href="#">Kim Kuster Dale (Apr 23, 2019)</a> Chief Academic Officer, Western Nebraska Community College	Adopt

## I. CATALOG DESCRIPTION

PHYS1100

Physical Science

**Prerequisite:** None

**Description:** A survey course in the physical sciences with emphasis on scientific processes and problem solving. Areas of study will include selected topics in physics, chemistry, astronomy, geology and meteorology. A scheduled laboratory will supplement classroom activities.

Credit Hours: 4 semester hours or 6 quarter hours

Lecture/classroom Hours: 45 hours

Laboratory Hours: 30 hours

## II. COURSE OBJECTIVES/COMPETENCIES

Course will:

- A. Develop skills in measuring and converting units within the metric systems
- B. Foster critical thinking skills using the scientific method in examining physical science concepts
- C. Relate scientific issues to societal and individual problems
- D. Relate basic physical science concepts to everyday experiences
- E. Explain basic chemical principles
- F. Describe the basic structure, features and workings of the solar system and universe
- G. Explain basic weather principles
- H. Describe the dynamic nature of earth and its cycles

## III. STUDENT LEARNING OUTCOMES:

Students will be able to:

*From Objective/Competency A:*

1. Demonstrate knowledge of different types of measurements and units such as CGS and MKS (SI)
2. Demonstrate knowledge of measurements in different systems and co-relate them.

*From Objective/Competency B:*

1. Solve problems relating to Newton's Laws of Motion and Gravitation
2. Evaluate situations involving momentum, energy and their conservation principles.

*From Objective/Competency C:*

1. Demonstrate knowledge of how physical changes affect the environment.
2. Describe available energy resources and how they affect global climate changes

*From Objective/Competency D:*

1. Describe heat flow relative to temperature
2. Demonstrate knowledge of electricity including magnetic fields and various phenomena

*From Objective/Competency E:*

1. Demonstrate knowledge of chemical bonds and the properties of substances
2. Identify the characteristics of elements based on the periodic table

*From Objective/Competency F:*

1. Demonstrate knowledge of uniform circular motion and elliptical motion with regard to the motion of celestial objects
2. Describe the components of the solar system

*From Objective/Competency G:*

1. Demonstrate knowledge of weather fronts and systems.
2. Explain the seasonal changes in weather patterns

*From Objective/Competency H:*

1. Demonstrate knowledge of the basic structures of a dynamic earth
2. Demonstrate knowledge of the components of earth materials

#### **IV. COURSE CONTENT/TOPICAL OUTLINE**

*(Order of presentation at instructor's discretion)*

1. Physics
2. Chemistry
3. Meteorology
4. Geology
5. Astronomy

#### **V. INSTRUCTIONAL MATERIALS**

##### **A. Suggested Textbooks**

1. Krauskopf, et.al., *The Physical Universe*, McGraw-Hill.
2. Shipman, et.al., *An Introduction to Physical Science*, Brooks/Cole
3. Tillery, *Physical Science*, McGraw-Hill

##### **B. Laboratory Manual/Book:**

1. Tillery, Laboratory Manual to accompany Physical Science; McGraw-Hill
2. Garretson, Laboratory Studies in the Physical Sciences; Wm C Brown Publishers
3. Physical Science with Vernier
4. Instructor Generated Lab Manual/Worksheets

#### **VI. METHOD OF PRESENTATION**

Instructors will make use of varied pedagogical techniques including several of the following:

- A. Lectures
- B. Discussion groups
- C. Individual and/or collaborative projects
- D. Debates, research, peer response, journals, essays, conferences
- E. Computer –assisted instruction, interactive/creative methods, multi-media
- F. Field trips
- G. Online

**VII. METHODS OF EVALUATION**

A. As determined by the instructor, course grades will be based on one or more of the following:

1. Class and group participation
2. Daily work, exams, presentations
3. Projects, papers, and/or a portfolio

B. The instructor will distribute and discuss evaluation and grading policies with students at the beginning/during of each term.

**VIII. INSTITUTIONAL DEFINED SECTION**












# PHYS1100 - Physical Science - 2019



Final Audit Report

2019-05-16

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