Syllabus

PHYS1100

Physical Science

2019

Committee Members:
No representative, Central Community College
Al Martyn, Little Priest Tribal College
Kendra Sibbernsen, 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.

Manoj Patil
Chief Academic Officer, Little Priest Tribal College

Jody Tomanak
Chief Academic Officer, Mid-Plains Community College

Kristine Sudbeck
Chief Academic Officer, Nebraska Indian Community College

Manoj Patil (Apr 17, 2019)
Chief Academic Officer, Little Priest Tribal College

Jody Tomanak (Apr 17, 2019)
Chief Academic Officer, Mid-Plains Community College

Kristine Sudbeck (May 15, 2019)
Chief Academic Officer, Nebraska Indian Community College

Adopt

Thomas J McDonnell
Chief Academic Officer, Metropolitan Community College

Decline

Adopt

Adopt

Adopt

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
   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" History

- Document created by Tara Naughtin (naughtint@mpcc.edu)
  2019-04-17 - 2:52:40 PM GMT - IP address: 72.15.173.125

- Document emailed to Candace Walton (candacewalton@cccneb.edu) for signature
  2019-04-17 - 2:59:17 PM GMT

- Document emailed to Manoj Patil (manoj.patil@littlepriest.edu) for signature
  2019-04-17 - 2:59:17 PM GMT

- Document emailed to Thomas J McDonnell (tjmcdonnell3@mccneb.edu) for signature
  2019-04-17 - 2:59:17 PM GMT

- Document emailed to Jody Tomanek (tomanekj@mpcc.edu) for signature
  2019-04-17 - 2:59:17 PM GMT

- Document emailed to Kristine Sudbeck (ksudbeck@thenicc.edu) for signature
  2019-04-17 - 2:59:17 PM GMT

- Document emailed to Lyle Kathol (lylek@northeast.edu) for signature
  2019-04-17 - 2:59:17 PM GMT

- Document emailed to Dennis Headrick (dheadrick@southeast.edu) for signature
  2019-04-17 - 2:59:17 PM GMT

- Document emailed to Kim Kuster Dale (kim.dale@wncc.edu) for signature
  2019-04-17 - 2:59:17 PM GMT

- Document viewed by Jody Tomanek (tomanekj@mpcc.edu)
  2019-04-17 - 3:24:00 PM GMT - IP address: 72.15.173.125

- Document e-signed by Jody Tomanek (tomanekj@mpcc.edu)
  Signature Date: 2019-04-17 - 3:24:17 PM GMT - Time Source: server - IP address: 72.15.173.125

Adobe Sign