

**Bossier Parish Community College  
Master Syllabus**

**Course Prefix and Number:** SCI 102

**Credit Hours:** 3

**Course Title:** Foundations in Science II

**Course Prerequisites:** None

**Textbook:** Tillery, B.W.; Integrated Science, 7th edition

**Course Description:** A continuation of the survey of physical sciences for non-science majors including topics in chemistry and geology. A sequence to Science 101.

**Learning Outcomes:**

At the end of this course, the student will

- A. relate fundamental principles of chemistry and geology to understand the natural world; and
- B. apply critical thinking, observation, and analysis skills to the development of scientific thinking.

To achieve the learning outcomes, the student will

1. List examples that show science is a way of asking and answering questions about the physical universe. (B)
2. Explain each step in the scientific method. (B)
3. Contrast basic research and applied research. (B)
4. Discuss the term research and development. (B)
5. Define atom, element, and molecule. (A)
6. Describe the discovery of the atom. (A)
7. Discuss the 5 historical atomic models. (A)
8. Define Bohr atom, photon, and quantum leap. (A)
9. Explain how the electrons in an atom are arranged. (A)
10. Briefly discuss the composition and arrangement of the periodic table. (A)
11. Discuss ionic, covalent, and polarization bonds by listing similarities and differences. (A)
12. Compare and contrast physical vs. chemical changes. (A)
13. Give examples of common chemical reactions. (A)
14. Describe conservation of mass. (A)
15. Describe the Earth's composition in terms of spherical concentric zone. (A,B)
16. Describe the general structure of both silicate and non-silicate minerals. (A)
17. Differentiate between inorganic and organic processes of mineral formation. (A)
18. Classify and categorize minerals in terms of standard physical properties such as color, streak, luster, hardness, cleavage and fracture. (A)
19. Describe the various chemical processes used to identify minerals. (B)

20. Describe the various forms of mechanical and chemical weathering. (A,B)
21. List the major eras, periods, and epochs associated with the Earth's geologic time scale.
22. Describe the various components of the Earth's hydrologic cycle and the role it plays in erosional processes. (B)
23. Identify the basic geologic concepts of seismology. (A)
24. Discuss environmental consequences and considerations inherent in the exploration and production of fossil-fuel and other energy resources. (A,B)
25. Complete and present a project orally that tests and/or explores a scientific topic. (A,B)
26. Observe simple experiments and demonstrations to collect data and test scientific concepts. (A,B)

**Course Requirements:** To earn a grade of "C" or higher the student must earn 70% of the total points for the course and meet all of the following course requirements.

- minimum average of 60% on tests
- minimum of 70% on oral presentation or current events portfolio

### **Course Grading Scale:**

- A- 90% or more of the total points possible for the semester; and meet all minimum course requirements
- B- 80% or more of the total points possible for the semester; and meet all minimum course requirements
- C- 70% or more of the total points possible for the semester; and meet all minimum course requirements
- D- 60% or more of the total points possible for the semester; and meet all minimum course requirements.
- F- less than 60% of the total points possible for the semester; and/or failure to meet one or more of the minimum course requirements

**Attendance Policy:** The college attendance policy is available at <http://www.bpcc.edu/catalog/current/academicpolicies.html>

### **Nondiscrimination Statement**

Bossier Parish Community College does not discriminate on the basis of race, color, national origin, gender, age, religion, qualified disability, marital status, veteran's status, or sexual orientation in admission to its programs, services, or activities, in access to them, in treatment of individuals, or in any aspect of its operations. Bossier Parish Community College does not discriminate in its hiring or employment practices.

COORDINATOR FOR SECTION 504 AND ADA

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[acao@bpcc.edu](mailto:acao@bpcc.edu)  
Hours: 8:00 a.m.-4:30 p.m. Monday - Friday, excluding holidays and weekends.

Equity/Compliance Coordinator  
Teri Bashara, Director of Human Resources  
Human Resources Office, A-105  
6220 East Texas Street  
Bossier City, LA 71111  
Phone: 318-678-6056  
Hours: 8:00 a.m.-4:30 p.m. Monday - Friday, excluding holidays and weekends.

Reviewed by K. McNamara/ August 2020