

SURVAY OF PHYSICAL SCIENCE I (SC 261-02)

Fall 2018 Course Outline

Department of Natural Sciences and Environmental Health, Mississippi Valley State University
(3 Credit hours course)

Instructor: Bhanu Priya Viraka Nellore, Ph.D. (Dr. Bhanu)
Office location: FLW 208C
Phone: (662) 254-3387
E-mail: b.virakanellore@mvsu.edu

Class Meeting Time / Location: MWF- 10:00 - 10:50 a.m. / FLW228

Office Hours: MW- 08:00-08:50a.m.10:00-10:50a.m. 12:00-12:50 p.m.; TR- 11:00-12:50 p.m.;
Other times by appointment only.

Prerequisites: None

Required Course Materials:

Text book: Physical Science, Bill W. Tillery, 11th Edition, McGraw-Hill Inc. Additional Reading will be assigned throughout the semester.

Course Description:

SC 261 examines the main areas of science dealing with non-living. The course will explore and explain our vast physical environment from the smallest particle to the entire universe. The area of concentration will include a through survey and examination of chemistry, geology, energy, and environment. The course will emphasize the various states of matter, the chemical bases of life, the study of celestial bodies, and various physical laws that are universally constant.

Student Learning Outcomes/Course Objective:

The general outcome goals are that students will understand the basic principles of science. And the following general course goals are established to meet the purposes of SC 261:

1. Develop fundamental understanding of the material classifications and properties.
2. Provide model exercises and demonstrations that enhance the understanding of natural principles and illustrate safe laboratory techniques and practices.
3. Raise awareness of the underlying logic of the presentations and the use of inductive and deductive reasoning.
4. Develop factual report writing skills.
5. Increase scientific vocabulary and facility with common pronunciation related to the use of that vocabulary.
6. Cultivate thoughtful, probing inquiry and discussion.
7. Clarify the significance of replicated, standards or controls, measurements, data reduction and presentation analysis, and accuracy in reporting of the scientific activities.

A general summary of detailed list of learning topics is summarized on pages 3 and 4, with the listing of chapters that will be covered. Most of the learning outcomes will be assessed by problems in which students must demonstrate their understanding. **It will be very difficult** to learn this science by “simply” memorizing different reactions without an understanding of the fundamental concepts that are the basis for these reactions.

Purpose:

Employing Mississippi Valley State University’s Holistic Transfer Model (HTM), SC 261 contributes to education and training of Holistic Transformers. It is our intention to not only teach fundamental chemistry relationships but also to develop the thinking processes of our students so that they will gain various insights into the workings of nature. These skills will transform the student into lifelong learners who can build upon accumulated knowledge and understandings. Additionally, these students can become facilitators who stimulate the natural curiosity of others. In doing so, SC 261 develops the skills and scientific background required of teachers of students in public schools by building upon prior knowledge and skills developed in preceding coursework presented by the Department of Sciences and Environmental Health, and by the College of Education.

Student Evaluation / Grading Scale:

Six quizzes and assignments, a midterm, and a final exam will be given. Students are expected to submit their assigned work on or before the deadline. Whoever submits the assigned work after the deadline is not accepted. The quizzes and assignments will be announced in advance in the class.

Quizzes	6 X 25	= 150 points
Assignments	6 X 25	= 150 points
Mid Term	1 X 100	= 100 points
Final Exam	1 X 100	= 100 points
Classroom participation	1 X 25	= 25 points
Attendances (2 nd half of semester)	<u>1 X 25</u>	<u>= 25 points</u>
Total		= 550 points

The grading scale is as follows

A = 89 to 100%

B = 77 to 88.9%

C = 66 to 76.9%

D = 55 to 65.9%

F = Below 55%

Makeup policy: There will be **no makeup examinations** or makeup worksheet assignments for this class. Exceptions to this policy must be cleared in advance (only valid University related absences) and/or must be due to certifiable emergencies. Makeup exams will not be given to students before the class has taken the exam.

Attendance Policy:

Perfect attendance will be rewarded with 25 points of credit. One point will be deducted for every unexcused absence from 25 points. Be sure to sign the attendance sheet each day. Classroom door will be locked at 10:10 a.m. Students at Mississippi Valley State University must fully commit themselves to their program of study. One hundred percent (100%) punctual class attendance is expected of all students in all scheduled classes and activities. When, for any reason, students are absent from class, it is their responsibility to present to the instructor as soon as possible (and not later than one day from the date of return) an official excuse for their absence. Any absence for which a student does not provide written official excuse is counted as an unexcused absence. Unexcused absences (e.g. 3 times for three-hour semester hour course) will be reported to the department chair and students must understand that “even with an official excuse of absence, students are responsible for the work required during their absence” during the class and exams.

Course Content and Tentative Time Line:

Week 1, and 2

Chapter 1, What is Science?: Objects and properties, quantifying properties, measurement systems, standard units for the metric system, metric prefixes, understanding from measurements, how to solve problems, the nature of science, and the scientific method explanations and investigations.

Quiz I

Assignment I

Week 3 and 4

Chapter 2, Motion: Describing motion, measuring motion, horizontal motion on land, falling objects, compound motion, three laws of motion, momentum, forces and circular motion, Newton’s law of gravitation, and earth satellites.

Quiz II

Assignment II

Week 5 and 6

Chapter 8, Atoms and Periodic Properties: Atomic structure, the Bohr model, quantum mechanics, electron configuration, the periodic table, metals, nonmetals, and semiconductors.

Quiz III

Assignment III

Week 7

Midterm Week

(Chapters 1, 2, and 8)

Week 8 and 9

Chapters 9, Chemical Bonds: Compounds and chemical change, valence electrons and ions, chemical bonds, bond polarity, composition of compounds.

Quiz IV
Assignment IV

Week 10 and 11

Chapter 10, Chemical Reactions: Chemical formulas, chemical equations, types of chemical reactions, information from chemical equations, and units of measurements used with equations.

Quiz V
Assignment V

Week 12 and 13

Chapter 14, The Universe: The night sky, stars, galaxies, the universe.

Chapter 17, Rocks and Minerals: Solid earth materials, minerals, minerals forming processes, rocks, and the rock cycle.

Quiz VI
Assignment VI

Week 14

Fall Break/ Thanksgiving Break

Week 15

Review

Week 16

Final Exam

(Review, Chapters 1, 2, 8,9, 10, 14, and 15)

Special Policies:

- **No cell phone** will be allowed. Please turn off the cell phone before entering the class room (No Exception). If your phone rings during the class or exam, you will be asked to leave the room, and you will be treated as an absent student. A student caught using a cell phone in class room or on an exam or quiz will receive zero points and considered absent for that exam/class and will be referred to the Department Chair/Dean of Students' office for appropriate action.
- **No breaks during the exam/quiz. No exceptions. A student can leave the class-room only after returning the exam/quiz.**
- **Intellectual Honesty:** Students are expected to follow principles of intellectual honesty. A student caught cheating on an exam or quiz will receive zero points for that exam or quiz and will be referred to the Dean of Students' office for appropriate action.
- Exam dates may be changed by the instructor. You must have to give the exam on the scheduled date.
- During the class, side talking/negative behavior is strictly prohibited. The instructor has right to ask you leave the class room for any unacceptable attitude and you will be treated as an absent student.

- **Class e-mail List:** An email list will be used to notify you of special scheduling information, test schedules or other miscellany. (Eg: If I am sick and won't be able to hold class; when and where practice tests are to be held; if there are errors in one of the practice tests or book problems or in something I communicated in class, etc.)

Note: A test e-mail will sent to all the students. If you haven't received one, contact me.

Use of Technology:

Becoming a holistic transformer is facilitated by the use of technology. Scholarship and reflective thinking promoted by easy access to information that may include widely varying theories and knowledge bases related to an extensive array of scientific and educationally related subjects. The same is, of course, true for developing the habits of life-long learner and classroom facilitator. Therefore, the use of technology in various forms will be encouraged in preparing for classroom discussion, scientific inquiry, practical application exercises, and lesson-plan development. Such technology will include, though not be limited to

1. Computerized library searches for information using scientific and educational databases
2. Use of internet to perform in depth searches for information related to appropriate instructional methodology and materials for teaching students in science; and
3. Computer applications useful in instruction and in scientific

Students with Special Needs

Mississippi Valley State University is committed to providing reasonable accommodations for students with a documented disability. If you feel you are eligible to receive accommodations for a covered disability (medical, physical, psychiatric, learning, vision, hearing, etc.) and would like to request it for this course, you must be registered with the Services for Students with Disabilities (SSD) program administered by University College. It is recommended that you visit the Disabilities Office located inside the EMAP Computer Lab in the Technical Education (IT) Building to register for the program at the beginning of each semester. If you are determined to be eligible after your confidential consultation, you will be provided with a Memo of Accommodations that must be submitted to each of your instructors.

For more information or to schedule an appointment, please contact Mr. Billy Benson, Jr. via phone or email at 662-254-3005 or billy.benson@mvsu.edu.

Caveat:

The schedule and procedures in this course are subject to change at the discretion of the instructor.

Copyright Notice:

All handouts used in this course are copyrighted and may not be copied without my expressly granted permission. "Handouts" and "PowerPoint Presentations" include all materials generated for this class, which include but are not limited to syllabi, quizzes, exams, problems, in-class materials, review sheets, problem sets, or other materials. Tutors and tutoring services are expressly forbidden from copying any or all of these materials. Only students currently enrolled in the class may make a single copy of this material for their personal use.

Note: This document does not constitute a contract but a set of guidelines subject to change.