PSCI 1030: Survey of Physical Science

Instructor Information

Instructor name:  
Office location:  
Office phone:  
Office hours:  
Email address:

I. Course Description

This course is a conceptual introduction to physical science using a minimum of mathematics. Topics discussed include Newtonian mechanics, gravitation, waves, sound, heat, electricity, magnetism, light, optics, and an introduction to modern physics.

Credit Hours: 4 Credits (3 Class Hours, 3 Lab Hours)

II. Course Outcomes and Topics

Course Outcomes

Upon successful completion of this course, the student will be able to:

- Explain the nature of a scientific theory and discuss the basic mathematical tools used in physical science.
- Illustrate the physical quantities necessary to describe one dimensional motion and discuss the equations relating them.
- Explain Newton’s Laws of Motion and illustrate their application.
- Discuss the concepts of energy and momentum and illustrate their uses.
- Examine the structure and states of matter.
- Explain the concepts of temperature and heat and discuss the laws of thermodynamics.
- Discuss the concepts of basic and applied electricity and magnetism.
- Interpret the ideas of wave motion, sound, and electromagnetic waves.
- Explain the basic concepts of optics.

Topics

- Science and the scientific method
- Inertia and Newton’s first law of motion
- Linear motion
- Newton’s second law of motion
- Newton’s third law of motion
- Momentum and energy
- Rotational motion
- Change of phase
- Vibrations, waves, and sound
- Electrostatics and electric current
- Magnetism and electromagnetic induction
- Properties of light and color
- Reflection and refraction
Gravity
- The atomic nature of matter
- Solids, liquids, gases, and plasmas
- Temperature, heat, and expansion
- Methods of heat transfer

Light waves, Light emission, and quanta
- The atom and the quantum
- Radioactivity
- Fission and fusion
- Special and general relativity

Sample Laboratory Topics
- Introduction to Measurement
- Measurement of the standard gravity of Earth
- Conservation of Energy and Momentum
- Density and Buoyancy
- Hooke’s law
- Torques and Equilibrium
- Standing waves and the speed of sound in Air
- Electrostatics
- Magnetism
- Refractive index of materials

III. Required Materials

Textbook: Choose from one of the following:
  ISBN: 9780321568090
  or

Calculator: A basic scientific calculator is required for this course.

IV. Course Policies

Attendance
Each instructor will provide information regarding his/her attendance policy. Failure to attend class will result in a final course grade of “FA” or “FN” (see explanation below), depending on the individual instructor’s course policy.

- FA= Failure, attendance related (unofficial withdrawal). Last recorded date of attendance required. Per TBR policy, a student who does not officially drop or withdraw from a course, but receives a failing grade, will receive an “FA” if the last day of attendance was earlier than two-thirds into the part-of-term. That date equates to the last day to withdraw from the course.
- FN= Failure, never attended class (unofficial withdrawal).

Please be advised that instructors may have a more specific class policy.
Method of Assessment/Evaluation: (Subject to change at instructor’s discretion)

Course average
- Average of tests and final examination = 40% - 75%
- Average of lab reports = 25%
- Other (Quizzes, homework, etc.) = 0 - 35%

The course letter grade is determined according to the following point ranges:
- 0-59 = F, 60-69 = D, 70-79 = C, 80-89 = B, and 90-100 = A.

Please consult your instructor for specific information regarding method of assessment.

Safety:
The instructor will review the regulations regarding safety in lab classes. You must turn in a signed copy of the regulations, and you should keep a copy for your records.

V. D2L Brightspace/NSOnline and myNSCC email
It is the student’s responsibility to check D2L and MyNSCC email on a regular basis. These are the official communication channels between the college and students. Students are responsible for the information communicated through those channels. D2L contains specific course information and MyNSCC contains information important for other purposes.

VI. Technology Statement
Nashville State’s classes are considered to be web-enhanced. Faculty have an expectation that students will use a computer and the Internet to complete assignments, engage in online discussions, and access various course materials through Desire2Learn (D2L) course shells. Computers are available for student use at each campus during campus open hours.

VII. ADA Compliance Statement
Nashville State complies with the Americans with Disabilities Act. If you wish to request any special accommodations for any courses in which you are enrolled, contact the Access Center at 615.353.3741 or 615.353.3721.

VIII. Classroom Misconduct
Nashville State Community College has a zero tolerance policy for disruptive conduct in the classroom. Students whose behavior disrupts the classroom will be subject to disciplinary sanctions. The Nashville State Student Code of Conduct policy is available at http://www.nscc.edu/content/resources/Student_Code_of_Conduct_Policy.pdf.

Please be aware that children are not allowed in class or unattended on campus.

IX. Academic Misconduct
Any form of academic dishonesty, cheating, plagiarizing, or other academic misconduct is prohibited. Students are responsible for understanding and aiding by the Academic Misconduct Policy in the Nashville State Student Code of Conduct policy that can be found at http://www.nscc.edu/content/resources/Student_Code_of_Conduct_Policy.pdf.

In addition to other possible disciplinary sanctions that may be imposed through regular college procedures as a result of academic dishonesty the instructor has the authority to assign an “F” or a “Zero” for the exercise, paper, or examination or to assign an “F” for the course. Students may appeal through the appropriate college grade appeal procedures.
Academic Early Warning System
Nashville State Community College has implemented an Early Warning System to notify students via e-mail about academic problems such as poor classroom attendance, poor performance on assignments/tests, poor communication skills, late/missing assignments, and/or lack of classroom participation. *Please note that Early Warning Alerts do not affect a student’s academic standing.

X. RAVE Emergency Alert System
Emergency events can happen at any time and Nashville State Community College wants to be able to notify students if and when they occur. For this reason, all students have been enrolled in the free RAVE alert system. If you have not already done so, please log in at https://get rave.com/login/nscc to confirm and update your contact information and notification preferences. It is critical that your information be correct so that you will receive any emergency notifications. Your RAVE Username is your NSCC email address. If you've never received an email from RAVE with your password, or if you need to reset your password, select “Forgot your password?” and a new password will be emailed to you. Should the RAVE system indicate “user not found”, select Register and create your own RAVE account.

XI. Inclement Weather Policy
Nashville State will use the RAVE alert system to send a text message to students, staff, and faculty about adjusted hours of operation and/or closings at individual campuses. All students should check the Nashville State web site home page at www.nscc.edu for announcements on campus closures, which may vary from campus to campus. Campus closures will also be announced on local television stations.

When classes are cancelled, an online assignment will be posted in NS Online. Check NS Online for a message from your instructor regarding your online assignment requirements.

Students should use their own best judgment in determining whether to report to campus during inclement weather when classes are not cancelled.

XII. Class Cancellation Policy
If the class is cancelled, the instructor will notify all students by posting in the NSOnline/D2L course, e-mailing through NSOnline/D2L, and/or by posting a sign on the classroom door. In the event of class cancellation, students must access NSOnline/D2L to complete classwork and the assignment that will be posted in the course D2L site.

NOTE: This syllabus is meant simply as a guide and overview of the course outcomes, topics, classroom policies, and standard college policies. Some items are subject to change or revision at the instructor’s discretion. Each instructor will further clarify their criteria for grading, classroom procedures, attendance, exams and dates, etc.