PSCI 1030: Survey of Physical Science

Instructor Information:
Name
Office phone
Office location
Office hours
E-mail 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, electricity, magnetism, heat and optics, and an introduction to modern physics.

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

II. Course Outcomes and Topics
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
• Gravity
• The atomic nature of matter
• Solids, liquids, gases, and plasmas
• Temperature, heat, and expansion
• Methods of heat transfer
• Change of phase
• Vibrations, waves, and sound
• Electrostatics and electric current
• Magnetism and electromagnetic induction
• Properties of light and color
• Reflection and refraction
• Light waves, Light emission, and quanta
• The atom and the quantum
• Radioactivity
• Fission and fusion
• Special and general relativity
Sample Laboratory Topics

- Accelerated motion
- Measurement of the standard gravity of Earth
- The effect of air resistance on falling bodies
- Density
- Balanced torques
- Measuring buoyant forces on submerged objects
- Hooke’s law
- Standing waves and the speed of sound in Air
- Electrostatics
- Magnetism
- Refractive index of materials

III. Required Materials

  ISBN: 9780321568090
  Or

- Scientific Calculator.

IV. Course Policies: (Instructors may alter the following policies at their discretion)

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).

Method of Assessment/Evaluation: (Subject to change at instructor’s discretion)

Course average
- Average of four unit tests = 37.5% - 75%
- Average of the highest ten lab reports = 25%
- Final Examination = 0 - 37.5%

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.
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.

Communication Policy
It is the student’s responsibility to check D2L and their 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 these channels, as well as for the information mentioned in class, regardless of whether the student is physically present in the classroom.

Attending class and participating in the various in-class activities is valuable to the learning process. The student is expected to attend each class meeting.

V. Classroom Behavior

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 instructor has primary responsibility for control over classroom behavior and maintenance of academic integrity. He/she can order temporary removal or exclusion from the classroom of any student engaged in disruptive conduct or in conduct which violates the general rules and regulations of the College.

Disruptive behavior in the classroom may be defined as, but is not limited to, behavior that obstructs or disrupts the learning environment (e.g., offensive language, harassment of students and professors, repeated outbursts from a student which disrupt the flow of instruction or prevent concentration on the subject taught, failure to cooperate in maintaining classroom decorum, etc.), the continued use of any electronic or other noise or light emitting device which disturbs others (e.g., disturbing noises from beepers, cell phones, palm pilots, lap-top computers, games, etc.).

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

VI. Academic Dishonesty (Honor Code)

Any form of academic dishonesty, cheating, plagiarizing, or other academic misconduct is prohibited. “Plagiarism may result from: (1) failing to cite quotations and borrowed ideas, (2) failing to enclose borrowed language in quotation marks, and (3) failing to put summaries and paraphrases in your own words” (A Writer’s Reference 331). Academic dishonesty may be defined as, but is not limited to, intentionally trying to deceive by claiming credit for the work of another person, using information from a web page or source without citing the reference, fraudulently using someone else’s work on an exam, paper, or assignment, recycling your own work from another course, purchasing papers or materials from another source and presenting them as your own, attempting to obtain exams/materials/assignments in advance of the date of administration by the instructor, impersonating someone else in a testing situation, providing confidential test information to someone else, submitting the same assignment in two different classes without requesting both instructor’s permission, allowing someone else to copy or use your work, using someone else’s work to complete your own, altering documents, transcripts or
grades, and forging a faculty/staff member’s signature.
In addition to other possible disciplinary sanctions that may be imposed through regular college procedures as a result of academic dishonesty, your grade in the course, or the assignment or examination affected by the alleged academic misconduct may be lowered to any extent, including a grade of “F”.

VII. ADA Statement

Nashville State Technical Community College 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 Disability Coordinator at 615-353-3721. Such services must have proof of documentation that is not over three years old.

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.