MIAMI DADE COLLEGE
NORTH CAMPUS
CHEMISTRY/PHYSICS/EARTh SCIENCES DEPT.

SYLLABUS

COURSE: PSC 1121 General Education Physical Science
INSTRUCTOR: Dr. Arturo Rodriguez
PHONE: (305) 237-8095
E-mail: arodri10@mdc.edu

OFFICE HOURS: As posted on the door of room A364
(Appointments recommended)

MEETING DAYS: Tuesdays, & Thursdays 9:50-11:05 AM

ROOM: 1206

REFERENCE: 577436

COURSE DESCRIPTION

A study of the major concepts and principles from each of the following areas: physics, chemistry, and astronomy.

COURSE COMPETENCIES

- The student will demonstrate knowledge of the nature of science and several aspects of its history.
- The student will demonstrate knowledge and application of the concepts of motion.
- The student will demonstrate knowledge of the concepts of temperature and heat.
- The student will demonstrate knowledge of the concept of waves.
- The student will demonstrate knowledge of basic concepts in electricity and magnetism.
- The student will demonstrate knowledge of the structure of the atom.
- The student will demonstrate knowledge of the nature of matter, its properties and interactions.
- The student will demonstrate knowledge of the processes that shape the universe.
Learning Outcomes

Purpose: Through the academic disciplines and co-curricular activities, General Education provides multiple, varied, and intentional learning experiences to facilitate the acquisition of fundamental knowledge and skills and the development of attitudes that foster effective citizenship and life-long learning.

As graduates of Miami Dade College, students will be able to:

1. Communicate effectively using listening, speaking, reading, and writing skills.

   In this course, the communication outcome will be demonstrated by the student’s class participation. While content remains the main focus of student’s participation, correct use of grammar and spelling is expected and evaluated as part of the student’s grade.

2. Use quantitative analytical skills to evaluate and process numerical data.

   Mathematics is a tool of science. Measurements and calculations are essential parts of the contents of each of the chapters taught in this course. The students will have to be able to read and identify pertinent numerical data in word problems; and will be required to manipulate the data using equations and dimensional analysis. Quantitative analysis is heavily reinforced in this course.

3. Solve problems using critical and creative thinking and scientific reasoning.

   In science, critical thinking is an essential skill. Solving numerical problems is not enough. You must be able to critically look at the problem and determine whether or not the answer makes sense. You must be able to determine a logical sequence of steps to solve problems, both qualitative and numerical. Critical thinking and scientific reasoning are heavily reinforced in this course. An appropriate understanding and use of the scientific method is one of the most valuable outcomes of this course.

4. Formulate strategies to locate, evaluate, and apply information.

   During this course, you will be asked to read and review several articles related to a current topic relevant to the course content. In reviewing the article, you will need to find and reference supplementary information to support your viewpoint.

5. Demonstrate knowledge of diverse cultures, including global and historical perspectives.

   This outcome is not reinforced in this course.
6. Create strategies that can be used to fulfill personal, civic, and social responsibilities.

Some of the topics that will be discussed will enhance your social responsibility, by discussing some current events actual issues that may require your actions as a responsible citizen engaged in voting in critical issues, like global warming.

7. Demonstrate knowledge of ethical thinking and its application to issues in society.

Throughout the course, the students will learn about ethical dilemmas faced by scientists in their respective fields, and will discuss some of this scenarios. Ethical dilemmas appear constantly in life. As we get older, these dilemmas affect not only our own lives, but also the lives of others and the whole of society. Understanding how to identify, think about, and resolve these situations interacts with the development of cognitive and moral reasoning skills and allows us to take responsibility for the directions in which society changes.

8. Use computer and emerging technologies effectively.

Computer literacy is a required skill in this course. The student will be required to be familiar with and use the Internet, and the different software of Microsoft Office, such as Word and PowerPoint. The principal form of communication with the instructor will be via email.

9. Demonstrate an appreciation for aesthetics and creative activities.

The student will be familiarized with the aesthetics and creative activities of the scientific inquiry, through the study of numerous examples taken from the history of science, which demonstrate the close interrelationship and mutual interaction between art and science.

10. Describe how natural systems function and recognize the impact of humans on the environment.

The interaction and impact of humans with the environment is at the center of this course. By completing it, the students will have a better understanding and appreciation of the interrelationship of all natural systems and the environment. The students will be able to answer questions such as:

- How has the earth environment changed over time?
- How have humans impacted the earth environment?
- What are the major factors contributing to environmental change today?
- How are humans responding to environmental change?
Paul G. Hewitt, John Suchocki & Leslie A. Hewitt

The textbook is required for an appropriate understanding of the materials discussed in class; and for the self-preparation of the students. Simple calculators are recommended. Cellular phones or other electronic devices can not be used as calculators in class.

EXAMINATION

Three partial tests will be given during the term and a Final exam will be given at the end of the course. The tests will be mostly multiple choice. Absolutely no make-up examinations will be given. No student will be allowed to take the test after ten (10) minutes of the beginning of the class. Absolutely no Reviews previous to the tests will be given. If the student has questions and/or problems understanding any part of the subject, she/he can come to my office during office hours for consultation. No extra-credit assignments will be given, and the grades will not be curved.

The students are required to bring a scantron form (No. 882-E, available in the bookstore) and a number 2 pencil for each test and exam.

GRADING POLICY

The final grade will consist in

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Three partial exams (25% each)</td>
<td>75%</td>
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<tr>
<td>Final exam</td>
<td>25%</td>
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Multiple Classroom Assessment Techniques (CATs) will be used during the term, to evaluate the student achievement of the Learning Outcomes, as well as the faculty performance. These activities are anonymous and will not be part of your grade.

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<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
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<tr>
<td>90 - 100</td>
<td>A</td>
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<tr>
<td>80 - 89</td>
<td>B</td>
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<td>70 - 79</td>
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<td>60 - 69</td>
<td>D</td>
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<tr>
<td>0 - 59</td>
<td>F</td>
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ATTENDANCE, CODE OF CONDUCT/DISCIPLINE

Attendance to class is required. Roll will be taken at the beginning of every class session. Students are expected to attend and participate in class. A student with 4 absences will be dropped from the course, and will only be reinstated if there is a justification for the absences approved by the Department Chair. Tardiness is not allowed, particularly on the days of tests/exam; three consecutive times late will be equivalent to one absence. A tardiness of more than twenty (20) minutes will be considered an absence. If a student leaves the class after the attendance is taken, it will be considered as an absence.

Students who attend class, and do not appear on the class roll will be asked to report to the Register Office to obtain a paid/validation schedule. Under no circumstances you will be allowed to remain in class if your schedule is not stamped paid/validated.

Discipline is a very important component of the class. All students must strictly comply with the Code of Conduct as reflected in the STUDENTS’ RIGHTS & RESPONSIBILITIES HANDBOOK. Once the Professor enters the classroom all conversations must cease; and no conversations and or text messaging will be allowed while the Professor is lecturing; no phone conversations and or text messaging will be allowed in class, either. If a student violates the outlined rules, she/he will be asked to leave the classroom and cannot return to the classroom until it is authorized by the Dean for Students.

Cellular phones and other electronic devices should be placed in vibrating mode; ringing phones are prohibited in class.

WITHDRAWAL POLICY (W)

If you decide to withdraw from this course it the student’s responsibility to do so in order to receive a grade of “W”.

CHEATING & PLAGIARISM

Cheating will not be tolerated in this course. Any student caught will receive an automatic “F” in the assignment. If the incident is repeated, the student will receive a failing grade in the course.

INCOMPLETES (I)

Incompletes will only be given by the end of the course, when a student is unable to complete the requirements of the course, due to exceptional circumstances. Students have until the end of the next major term to finish the coursework or a failing grade for the course will be assigned.
**TENTATIVE SCHEDULE**

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<thead>
<tr>
<th>Week</th>
<th>Chapters</th>
<th>Tests &amp; Assignment</th>
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<tbody>
<tr>
<td>1</td>
<td>Prologue</td>
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<td>2</td>
<td>Chapter 3</td>
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<td>3</td>
<td>Chapter 6</td>
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<td>4</td>
<td>Chapter 7</td>
<td><strong>TEST 1</strong> (Prologue &amp; Chapter 6)</td>
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<td>5</td>
<td>Chapter 12</td>
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<td>6</td>
<td>Chapter 13</td>
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<td>7</td>
<td>Chapter 14</td>
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<td>8</td>
<td>Chapter 15</td>
<td><strong>TEST 2</strong> (Chapters 12, 13 &amp; 14)</td>
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<td>9</td>
<td>Chapter 16</td>
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<td>10</td>
<td>Chapter 24</td>
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<td>11</td>
<td>Chapter 25</td>
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<td>12</td>
<td>Chapter 26</td>
<td><strong>TEST 3</strong> (Chapters 24 &amp; 25)</td>
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<td>13</td>
<td>Chapter 27</td>
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<td>14</td>
<td>Chapter 28</td>
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<tr>
<td>16</td>
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<td><strong>Final Exam</strong> (Chapters 26, 27 &amp; 28)</td>
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This Syllabus might be changed as needed.