Syllabus

Class Time and Location: Tuesday and Thursday 6:00 – 7:30 p.m., EEP 254
Instructor: Dr. Vladimir Sobolev
Office, office hours: 222 EEP; M, W 3:00 – 6:00 p.m.; T, 3:00 – 5:00 p.m.
Phone, E-mail: 394-1225; Vladimír.Sobolev@sdsmt.edu

Course Web Site: http://www.hpcnet.org/sdsmt/directory/courses/2007fa/phys183M021

Students with special needs or requiring special accommodations should contact the instructor, Dr. Vladimir Sobolev, and/or the campus ADA coordinator, Jollie McCoy, at 394-1924 at the earliest opportunity

Catalog course description: (3-0) 3 credits. This course presents a broad view of astronomy in a straightforward and descriptive manner without complex mathematics. It introduces students to basic concepts and the historic and modern foundations of the science of astronomy. Students will gain some insight into the basic physics underlying conclusions drawn from observational and theoretical astronomy, astrophysics, and cosmology. The course provides descriptions of a wide variety of objects found in the universe, from gas and dust particles to stars, planets, and galactic clusters.

Additional course description: This descriptive, introductory course offers an overview of astronomy, emphasizing the fundamental observations and the underlying physical principles in scientific models of astronomy. We will cover the motions of celestial objects, the solar system, stars and galaxies (depending on the course progress); the properties of electromagnetic radiation; atomic structure; and astronomical instruments. We will also explore not only our geometric place in the Universe, but also our evolutionary place. The course work will focus on the logic of scientific inquiry, both quantitative and spatial reasoning, and both critical reading and thinking. Observation sessions and laboratory will not be taught in this semester.

After successful completion of this course, student will:

- be familiar with basic terminology;
- know and understand basic historical facts and fundamental laws of nature that relate to astronomy;
- have a sufficiently developed ability to apply the logic of scientific inquiry, to be able to critically read popular articles on astronomy;
- develop an understanding for the techniques and instruments used by astronomers;
- use astronomical concepts and critical thinking skills to describe, using specific examples, not only our geometric place in the universe but also our evolutionary place, and how our understanding of that place has changed with changing technology;
- use their knowledge to be able to locate the Moon and planets in the sky.
GenEd Goal #6: Students will understand the fundamental principles of the natural sciences and apply scientific methods of inquiry to investigate the natural world.

Student Learning Outcomes: As a result of taking courses meeting this goal, students will:

1. Demonstrate the scientific method in a laboratory experience. This outcome will be achieved and assessed in Phys 213L course.

2. Gather and critically evaluate data using scientific method.
   Assessment: Students will be able to critically evaluate data (given or obtained) with proper accuracy using appropriate laws and formulas of classical mechanics for scientifically sound presentation of laboratory reports, homework assignments, and of solutions on quizzes and exams.

3. Identify and explain the basic concepts, terminology and theories of selected natural sciences.
   Assessment: Students will be able to identify and apply basic concepts and appropriate laws of classical mechanics in order to solve assigned problems in homework, quizzes, exams, and in oral presentation.

4. Apply selected natural science concepts and theories to contemporary issues.
   Assessment: Students will be able to explain how physics concepts, laws, and phenomena relate to contemporary engineering and science in classroom discussions and written assignments.

Freedom in Learning. Students are responsible for learning the content of any course of study in which they are enrolled. Under Board of Regents and University policy, student academic performance shall be evaluated solely on an academic basis and students should be free to take reasoned exception to the data or views offered in any course of study. Students who believe that an academic evaluation is unrelated to academic standards but is related instead to judgment of their personal opinion or conduct should contact the dean of the college which offers the class to initiate a review of the evaluation.

Grade Structure:

<table>
<thead>
<tr>
<th>Points</th>
<th>Grade</th>
<th>%</th>
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<tbody>
<tr>
<td>300</td>
<td>A</td>
<td>85 – 100</td>
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<tr>
<td>100</td>
<td>B</td>
<td>84 – 70</td>
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<tr>
<td>150</td>
<td>C</td>
<td>69 – 55</td>
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<tr>
<td>150</td>
<td>D</td>
<td>54 – 50</td>
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<tr>
<td>550</td>
<td>F</td>
<td>49 – →</td>
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*Quizzes will not be announced beforehand, they will be given in the lecture periods. Students are responsible for taking the exams when scheduled. Anyone missing an exam without prior approval and arrangement with Dr. Sobolev, or certifiable medical reasons, will be assigned a zero grade for the exam in question. The Final Exam will be a comprehensive exam on topics, which have received emphasis. Everyone must take the final exam.

Policies:

- Quizzes will be open book, with no notes or cards allowed.
- Quiz will be graded. No makeup quizzes will be given; no late quizzes will be accepted.
- Hour exams and final exam will be multiple-choice questions.
All exams, including the final, are open book. Only the standard course textbook is allowed. Student prepared note cards and sheets are not permitted. Calculators are permitted.

All hour exams will be held in the room 252.

The final exam will be comprehensive.

Appeals for additional credit on exam:

Exam grades are determined by assigning credit based on the merit of the points assigned to each question. If you feel you should receive more points for a particular solution please use the following procedure.

1. Talk to the instructor and submit.
   a) Your original test.
   b) A complete and correct answer to the particular question.
   c) A brief description of why you think you deserve more credit for the results of your exam.
2. See the instructor within 5 working days after you graded exam is returned.
3. There will be no second appeals.

Attendance:

Attendance is compulsory for all lecture classes, quizzes and examination periods. Any absence must be accompanied by a written excuse from a doctor. Without excuse, a grade of zero points may be assigned for the missed work. With excuse, missed work may be made up, but only after arranging with the instructor to make up the work before the next class period.

Academic misconduct:

Any violation of academic integrity policy, such as cheating and plagiarism, will not be tolerated in this course. Penalties may range from a failing grade for the work in question to failure of the course. Any and all work you submit for grading must be your own and must be a product of your own thinking. Verbatim copying or even edited copying from other sources constitutes cheating.

Tentative course schedule:

<table>
<thead>
<tr>
<th>Week of</th>
<th>Tuesday</th>
<th>Thursday</th>
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<tbody>
<tr>
<td>September 3 – 7</td>
<td>Prologue</td>
<td>Survey of the Solar System</td>
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<tr>
<td>September 10 – 14</td>
<td>Chapter 1</td>
<td>Chapter 1</td>
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<tr>
<td>September 17 – 21</td>
<td>Chapter 2</td>
<td>Chapter 2</td>
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<tr>
<td>September 24 – 28</td>
<td>Chapter 3</td>
<td>Chapter 3</td>
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<tr>
<td>October 1 – 5</td>
<td>Test on Chapters 1 – 3</td>
<td>Chapter 4</td>
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<td>October 8 – 12</td>
<td>Chapter 4</td>
<td>Chapter 5</td>
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<td>October 15 – 19</td>
<td>Chapter 5</td>
<td>Chapter 6</td>
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<tr>
<td>October 22 – 26</td>
<td>Chapter 6</td>
<td>Chapter 7</td>
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Homework:

Homework assignments will be given ion the class every week or two (No Homework first week). You will have one week to complete it. *A zero will be given if turned in late*, unless you are sick on the day that homework is due. In this case, you may turn it in the following class. If you missed a class when homework was assigned, see instructor.

Quizzes:

There will be several quizzes given in the class. Some quizzes will have to be completed in the class; some will be take home quizzes. The quiz questions will be from the textbook and/or from the material presented in class.

Extra Credit:

Extra credits to improve your grade may be obtained by making a presentation. The topics for presentations will be given in the class.