Physical Science 126 (30457)

Syllabus for 2004 Fall, except for the Chemistry Component

Instructor: Dr. David Jeffery, Stoffer Science Hall (ST), Rm 108a, Tel: 785-231-1010, ext 2144, Email: jeffery@physics.unlv.edu, Office hours: MTWRF 2:30–3:30 p.m. (If you need to see the instructor for sure, make an appointment. I'm usually happy to see students at any time that I'm relatively free.)

Time: MWF 1:00–2:15 pm

Place: ST 112

Warning: This syllabus is subject to change at the discretion of the instructor. Any changes will be announced.

Prerequisites: None.


Objectives: This course is an introduction to the physical sciences physics, astronomy, and chemistry. The main objectives are to learn some of the basic principles of these sciences and equally importantly to gain a greater understanding of the scientific method. The scientific method in the physical sciences generally includes experimentation, theorizing, and utilization of mathematics in the description of nature.

It is hoped that the students will make progress in achieving Washburn's General Educational goals of:
1. Reading intelligently.
2. Reasoning mathematically and understanding numerical data.
3. Processing information both in terms of synthesis an analysis.

Content: The first part of the course running to November 1, Monday will be taught by David Jeffery and will comprise chapters 1–8 (on physics) and 16–18 (on astronomy) of the text: there are 11 chapters and we will cover 1 chapter per week; there are 32 lecture periods of which 3 will be used for tests.

The topics will include the scientific method, units, scientific notation, the metric system, motion, energy, thermodynamics, electricity and magnetism, waves, light, the nucleus, the atom, the solar system, the stars, and the universe. The second part of the course (consisting of 12 lecture periods) will be taught by Sue Salem, who present her own syllabus when she takes over the course.

We will move on every week to a new chapter (in the non-chemistry component). This means that some topics in a chapter might be omitted altogether: such omissions will be made explicitly by the instructor. Other topics may have to be omitted from the lectures, but the students are still responsible for them from the text.

The instructor’s lectures are intended to partially supplement (i.e., repeat) the text and partially complement (i.e., add to) the text. Essentially, the instructor is lecturing the text, but sometimes with rearrangement and with some different perspectives. The students should know that in many cases there is no single right way to understand material and that different perspectives should help.

Course Web Site: The course website is

http://www.physics.unlv.edu/~jeffery/course/c_sci100/index.html
The course website has some interesting science and astronomy links. The course syllabus can be downloaded from there in pdf format. Student marks and grades are posted there, but only for students who have given a confidential alias. See the hand-in page for rules about aliases.

**Exams for the non-chemistry component:** There will be three in-class exams. The in-class exams are tentatively scheduled Sep03 Friday, Oct01 Friday, and Nov01 Monday. There are no drops. Each test counts for 24% of the total grade; together the tests count as 72% of the total grade. (Note this weighting of the tests may change slightly depending on a final decision by the co-instructors about the relative weighting of the chemistry component.) Make-up exams are possible, but students must ask for them promptly and avoid knowing anything about the tests given in class. The exams consist of multiple-choice problems and full answer problems. About 2/3 of the questions will be drawn from the homeworks with a little adjustment.

There is no final for the non-chemistry component. But this puts all the more weight on the in-class tests.

**Homeworks for the non-chemistry component:** There will be weekly homeworks. The homeworks will consist of all the multiple choice questions (unmarked) and all the odd questions and odd problems from the text for the chapter of the week, except for questions and problems explicitly omitted at the time of the homework.

The students will **SELF-MARK** their homeworks and report the grades on the Monday following the week of the chapter: or as soon thereafter as possible: don’t fall behind. The students are on their honor not to look at the solutions in the book before completing the homework and to mark themselves fairly. Each question and problem is to be marked out of 5. Getting help from the instructor and fellow students is, of course, encouraged. The total of all homeworks counts 3% toward the final grade.

**Daily Grind for the non-chemistry component:** Each lecture period is 75 minutes. Ordinarily, there will be 45 minute lecture, a 5 minute break, and a 25 minute group work period. In the group work period students will group themselves into groups typically 3 to 4. The groups will work together on homework problems, special questions given by the instructor, or small laboratory exercises. The instructor will flit about in TA mode. The group work time should be intense, but social: this is the time to understand and get done the homework problems. Of course, you will have to work at home on them on your own too: especially the self-marking phase.

The group work period might have to be cut some days to make sure sufficient lecture material is covered.

**Evaluation and Grading:** The 3 grading categories (from the perspective of the first instructor), their weightings, and their drops are:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weighting</th>
<th>Drop</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 homeworks</td>
<td>3%</td>
<td>1 drop</td>
</tr>
<tr>
<td>3 in-class tests</td>
<td>72%</td>
<td>no drop</td>
</tr>
<tr>
<td>chemistry component</td>
<td>25%</td>
<td>no drop</td>
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</tbody>
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The relative weighting of the tests and the chemistry component may vary a bit depending on a final decision of the co-instructors. Letter grades based cumulative average marks will be assigned according to lower bound scheme:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>90%</td>
</tr>
<tr>
<td>B</td>
<td>80%</td>
</tr>
<tr>
<td>C</td>
<td>70%</td>
</tr>
<tr>
<td>D</td>
<td>60%</td>
</tr>
<tr>
<td>F</td>
<td>0%</td>
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Disability Services: The Student Services/Services for Students with Disabilities Office (SSWDO) is responsible for assisting in arranging accommodations and for identifying resources on campus for persons with disabilities. Qualified students with disabilities must register with the office to be eligible for services. SSWDO MUST have documentation on file in order to provide services. Accommodations may include in-class notetakers, test readers and/or scribes, adaptive computer technology, brailled materials. New requests for accommodations should be submitted two months or more prior to the date services should begin; however, contact SSWDO as soon as a need may arise.

Location: Student Services, Morgan Hall-Room 150

Phone: 785-231-1010, ext 1629 (may leave voice mail 24 hrs/day) or TDD: 785-231-1025

Students may voluntarily identify themselves to the instructor for a referral to SSWDO.

Schedule

We will actually try to run a bit ahead of the schedule to make up for holidays and tests. Some chapter topics may have to be omitted to keep things from being too brutal.

4. Sep06: Chapter 4: Thermodynamics and Matter: Labor Day holiday Sep06 Monday.
12. Nov01: The non-chemistry component ends after Monday: Nov01 Monday, Test 3.
Name:
Email Address:
Year:
Major or Possible Major:
Astrological Sign:

1. Does the Sun rise north or south of due east when it is summer in northern latitudes?

2. What is zenith? nadir?

3. If you saw the Moon near sunset in the western sky, is the Moon waxing or waning?

4. If you would like your marks and grades posted, please give a CONFIDENTIAL ALIAS for the posting: NOT your student number and NOT your social security number. Please make the alias pretty unique, less than 15 characters, and containing only letters, numerals, spaces, and the special characters ´,`,%@#. The aliases will be listed in extended alphabetic ordering. Note that university policy (which is in accordance with the law) requires complete confidentiality.