CLASS SYLLABUS – FALL 2011
ASTRONOMY 105G M03, M04, M05
THE PLANETS

This class fulfills the University’s General Education Basic Natural Science requirement, including a laboratory component that is closely linked to the materials covered in lecture. Additionally, this course is a New Mexico “Common Core Laboratory Science” course; many other New Mexico universities have classes for which transfer credit will be granted for this course. You can find more Common Core information at: http://www.hed.state.nm.us


The grade you earn in this class will be based upon the following:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tr>
<td>Three exams</td>
<td>55%</td>
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<tr>
<td>Lab exercises</td>
<td>20%</td>
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<tr>
<td>Homework</td>
<td>10%</td>
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<tr>
<td>Quizzes</td>
<td>15%</td>
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<tr>
<td>Total</td>
<td>100%</td>
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Exams will be comprehensive for all material covered to that point, with most emphasis upon material not yet tested upon. The three exams will be of varying weights (15% for the first exam, 17.5% for the second exam, and 22.5% for the final exam) toward your final grade. Exams will consist of multiple-choice questions and short-answer questions.

There will be 5-6 quizzes during the course of the semester. These will be several questions in length, the questions requiring short written answers. Quiz dates will be announced during class at least one week in advance.

Homework will consist of answering questions I create and distribute, as well as ‘end of chapter’ questions. You will receive ~5-6 homework assignments during the semester. One of the homework assignments will require you to view the night skies through the telescopes at our on-campus observatory. This will be announced well in advance.

ATTENDANCE IN CLASS AND LABORATORY SESSIONS IS ESSENTIAL IF YOU WISH TO EARN A GOOD GRADE IN THIS COURSE

This class meets in Biology Annex (BX) Room 102
Monday, Wednesday, and Friday from 9:30-10:20 AM
Laboratory M03 meets on Monday from 12:30-2:30 PM in Walden Hall Room 232
Laboratory M04 meets on Monday from 2:30-4:30 PM in Walden Hall Room 232
Laboratory M05 meets on Tuesday from 1:30-3:30 PM in Walden Hall Room 232
[Labs will begin the week of Monday, August 22nd & Tuesday, August 23rd]

Instructor: Dr. Jim Murphy Office - Astronomy Bldg, Room 202B
Telephone: 646-5333
email: murphy@nmsu.edu

Dr. Murphy’s ASTR 105G Class Office Hours:
Wednesday, 10:30-noon; Thursday, 11:00-noon
(additional hours will be added if needed; hours will be reduced if they are not used…)
I encourage you to set up an appointment if you are unable to take advantage of my office hours.

Teaching / Lab Assistants:
Section M03: Ms. Malynda Chizek  Astronomy Bldg, Room 220
mchizek@nmsu.edu  575-646-8180
Sections M04 & M05: Mr. Nick Ule  Room 209
nmule@nmsu.edu  575-646-7724
Goals of this course: To appreciate and understand the population of objects in the Solar System, their characteristics, and the physical processes at work with regard to these objects; to understand the scientific methods by which this knowledge has been achieved; and, to see how these processes and methods play roles in our every day lives.

CLASS POLICIES

Entering the semester, I assume that a grade of “A” will be earned by those achieving 90-100% of the total points available during the semester, a “B” will be 80-89.99%, a “C” will be 70-79.99%, a “D” will be 60-69.99%, and an “F” for < 59.99%. I have no a priori plans to invoke a curve to final grades, but if any curve is applied it will not lower any letter grades.

Attendance at lecture is not mandatory, but is certainly beneficial to your earning a good grade in this class. Attendance will be taken at each lecture. A minimum number of absences (zero is best!) will be considered as a plus in rounding final semester grades.

All students must be registered for a lab section (M03 or M04 or M05). Attendance at the Lab sections is mandatory, since each lab will require the handing in of a report. No make-up labs are offered. If you know that you will be absent for a lab for a valid reason, let us know ahead of time and we will determine what if any accommodations we can work out.

If you decide to withdraw from this class, it is your responsibility to do so through the proper channels. If you do not officially withdraw but cease coming to class, do not turn in homework, and fail to appear for labs / exams / quizzes, you will most likely receive a failing grade. The final day on which you can officially withdraw from class and receive a 'W' on your transcript is Tuesday, October 11th. Midterm grades will be available prior to this date.

DON’T CHEAT. I want all work (assignments, quizzes, exams) handed in with your name to be your individual work, unless you are instructed otherwise. If I conclude that you are cheating (handing in other’s work as your own, copying off other’s exams, etc.) I will be as severe as the university allows in dealing with such matters. I do encourage you to establish “study groups”; these make the learning more fun and allow you to assist your fellow students. However, I do expect that any final answer you create and hand in will be in your own words and not copied from another.

NMSU has implemented a Plagiarism Policy which will be followed in this course. The policy is described at: http://lib.nmsu.edu/plagiarism.

Incomplete (I) grades may be given only if a student has passed the first half of the course, and is precluded from successful completion of the second half of the course by a DOCUMENTED ILLNESS or FAMILY CRISIS that I believe genuinely precludes successful completion.

Exams, quizzes, and labs CANNOT be made up after the fact. If you know ahead of time that you will, for a valid reason, be absolutely unable to attend class or a lab, let me know (and provide valid documentation) and we'll work out an arrangement suitable to all involved. You will be responsible for any information from a class or lab which you do not attend. Life is much easier for you and I when you provide information in advance!

QUIZ DATES WILL BE ANNOUNCED
AT LEAST ONE WEEK BEFORE THE QUIZ IS ADMINISTERED
CLASS POLICIES (Continued)

No EXTRA CREDIT work will be available!

Cell phones should be turned off, or set to vibrate, when you are in class and lab.

Cell phones WILL NOT be permitted to be used as a calculator during quizzes and exams, or in labs (you will need a scientific calculator for lab).

You should always bring a calculator to lab each week. You will be permitted to use calculators during quizzes and exams.

NMSU Policies

If you have or believe you have a disability, you may wish to self-identify. You can do so by providing documentation to the Student Accessibility Services, located in Corbett Center, Room 244 (phone 646-6840). Appropriate accommodations may then be provided for you.

If you have a condition which may affect your ability to exit safely from the premises in an emergency or which may cause an emergency during class, you are encouraged to discuss this in confidence with the instructor and/or the director of Student Accessibility Services. If you have general questions about the Americans With Disabilities Act (ADA), call 646-3633.

Feel comfortable calling Ms. Diana Quintana, Coordinator of Student Accessibility Services, at 646-3635 with any questions you may have about NMSU’s Non-Discrimination Policy and/or complaints of discrimination, including sexual harassment. You are also encouraged to call to offer praise for individuals who do their utmost to avoid discriminatory practices here at NMSU.

If you have any questions or comments about NMSU’s academic policies, contact NMSU Provost Dr. Wendy K. Wilkins at (575-646-2127).

NMSU’s Student Code of Conduct, Academic Misconduct description, including a statement on Plagiarism, can be located at:

http://www.nmsu.edu/%7Evpsa/SCOC/misconduct.html

I encourage you to view this site !!!
Some Tips for a Successful Semester in ASTR 105G M03, M04, and M05

Please **DO** ask questions when they arise in your consideration of the material we are covering, be it in class, lab, office hours, etc. If you have a question, you can almost always be assured that others have the same question, so your asking helps both you and your classmates. I want you to gain appreciation for the worlds around you, and an understanding of the processes involved in their development and evolution, and by obtaining feedback from you, I can identify those areas in which I need to modify my presentations. **Please feel comfortable in raising your hand in lecture or lab to ask a question.**

Strive to not get behind. The quizzes given during the semester are one means of ensuring that you have some outside motivation to keep up with the class readings between exams.

Please do contact us if you have questions about how you are doing, or if there is something we might be able to do assist you with during the semester.

**Look at the sky!!** There are many, many interesting sights to behold by looking at both the daytime and nighttime sky. I will make it a point to mention upcoming celestial events (**meteor showers, visible planets, comets which become visible**) during lecture, and will arrange for one or two occasions when we can use the campus observatory to view the night skies during the semester. Also, the Astronomy Dept. hosts observatory open houses once each month and these events will be advertised in class. The **expected** schedule of Observatory Open Houses for this Spring 2011 semester is:

- Friday, September 2\(^{nd}\), 9:00 PM
- Friday, September 30\(^{th}\), 8:00 PM
- Friday, November 4\(^{th}\), 8:00 PM
- Friday, December 2\(^{nd}\), 8:00 PM

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**LECTURE AND OTHER COURSE MATERIALS CAN BE OBTAINED ON-LINE AT:**

http://atmos.nmsu.edu/pub/MGS/ASTR105G-M03M04M05-FALL2011

The course **LAB MANUAL** can be obtained from one of two sources:

i) the lab manual is available for **PURCHASE** (cost ~ $25) at FEDEX (Kinkos) located near the corner of University Avenue and Espina St

ii) the lab manual can be **DOWNLOAD** for you to print yourself, with the manual available at:


**Labs at this web site are available individually or as the complete package**
<table>
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<th>Week of Aug 19</th>
<th>Introduction, Syllabus Review, Schedule discussion; The Scientific Method; a brief Solar System tour</th>
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<tr>
<td>Week of Aug 22, 24, 26</td>
<td>History of astronomical understanding; Intellectual tools (volume, mass, density)</td>
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<td><strong>LABS BEGIN!</strong></td>
<td><em>Reading Assignment: Preface, Forward by Neil deGrasse Tyson, Chapters 1, 2, and 3</em></td>
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<td><em>Tools for Success Lab</em></td>
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<td>Week of Aug 29, 31, Sept 02</td>
<td>Gravity: its intensity and what this depends upon; Orbits, including Kepler’s 3 Laws of Planetary Motion; Newton’s Laws of Motion</td>
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<td><em>Reading Assignment: Chapters 3 and 4</em></td>
<td><em>Density Lab</em></td>
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<td>Week of Sept 07, 09 (LABOR DAY Monday, Sept 5: No Class)</td>
<td>Orbital and rotational issues (sidereal vs. solar day, seasons, moon and planet phases, eclipses…)</td>
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<td><em>Reading Assignment: Chapters 2, 4, and S1</em></td>
<td><em>NO LABS THIS WEEK!!</em></td>
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<td>Week of Sept 12, 14, 16</td>
<td>’Tools’ for observing the sky; radiation; spectra; telescopes</td>
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<td><em>Reading Assignment: Chapters 5 and 6</em></td>
<td><em>Scale Model of the Solar System Lab</em></td>
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<td>Week of Sept 19, 21, 23</td>
<td>Earth: Viewing it as a Solar System member – internal structure, composition, surface processes</td>
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<td><strong>EXAM #1 on Friday, September 23rd</strong></td>
<td><em>Phases of the Moon Lab</em></td>
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<td>Week of Sept 26, 28, 30</td>
<td>The Earth: Atmosphere, Life; The Moon: Internal and Surface characteristics, Cratering: the mechanism</td>
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<td><em>Reading Assignment: Chapter 10</em></td>
<td><em>The Origin of Seasons Lab</em></td>
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<td>Week of Oct 03, 05, 07</td>
<td>Mercury; Venus (composition, atmosphere, greenhouse warming…); spacecraft missions to the ‘inner’ planets</td>
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<tr>
<td><em>Reading Assignment: Chapters 9 and 10</em></td>
<td><em>The Orbit of Mercury Lab</em></td>
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<td>Week of Oct 10, 12, 14</td>
<td>Mars: Your Favorite Planet – The planet’s characteristics, Life on Mars?, Mars rover and lander missions, and other topics…</td>
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<tr>
<td><em>Reading Assignment: Chapters 9 and 10</em></td>
<td><em>Kepler’s Laws Lab</em></td>
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<td>Week of Oct 17, 19, 21</td>
<td>Gas Giant Planets: How &amp; why do they differ from the ‘terrestrial’ planets?</td>
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<td><strong>EXAM #2, Friday, October 21st</strong></td>
<td><em>Estimating Earth’s Density Lab</em></td>
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CLASS TOPIC SCHEDULE, ASTR 105G M03, M04, M05 Fall 2011
(continued)

Week of Oct 24, 26, 28 - Uranus and Neptune: the ‘not so Gas Giant’ planets’
The moons of the Giant planets: Physical characteristics;
responses to their environments (tides); why so many moons?

Reading Assignment: Chapter 11
(Surface of the Moon Lab)

Week of Oct 31, Nov 02, 04 - Finally, Pluto!; Planet ring systems

Reading Assignment: Chapters 11 and 12 (Surface Water Flow Features on Mars Lab)

Week of Nov 07, 09, 11 – Comets and Asteroids: The ‘Small’ pieces of the
beginning(?) and their subsequent influences…; Meteors and meteorites

Reading Assignment: Chapter 12
(Building a Comet Lab)

Week of Nov 14, 16, 18 - The Sun: ‘Our Star’: The heart and ‘glue’ of the Solar System;
physical characteristics, energy generation mechanism;
it's history and its fate
Solar System Origin: Constraints that formation theories must satisfy

Reading Assignment: Chapters 8 and 14
(The Sun Lab)

Week of Nov 21, 23, 25  NO CLASS or LAB  THANKSGIVING BREAK

Week of Nov 28, 30, Dec 02 - Extrasolar planets: planets orbiting other stars in the Galaxy;
Final Exam REVIEW; Evaluations

Reading Assignment: Chapter 13
(Review Lab)

‘FINAL’ EXAM #3, Monday, December 5th, 8:00 AM, BX102