<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>TU</td>
<td>SEP  7</td>
<td>Introduction to Course, Related Math Principles</td>
</tr>
<tr>
<td>TH</td>
<td>SEP  9</td>
<td>LAB #1: Measurement and the Metric System</td>
</tr>
<tr>
<td>TU</td>
<td>SEP 14</td>
<td>Measurements in the Solar System</td>
</tr>
<tr>
<td>TU</td>
<td>SEP 21</td>
<td>LAB #2: Drawing the Solar System to Scale</td>
</tr>
<tr>
<td>TH</td>
<td>SEP 23</td>
<td>Locating Celestial Objects: the Horizon System</td>
</tr>
<tr>
<td>TU</td>
<td>SEP 28</td>
<td>LAB #11: The Horizon System</td>
</tr>
<tr>
<td>TH</td>
<td>SEP 30</td>
<td>Locating Celestial Objects in the Sky using the Star Finder</td>
</tr>
<tr>
<td>TU</td>
<td>OCT  5</td>
<td>LAB #20: Using a Star Finder</td>
</tr>
<tr>
<td>TH</td>
<td>OCT  7</td>
<td>Conclusion of Astronomy Skills</td>
</tr>
<tr>
<td>TU*</td>
<td>OCT 12</td>
<td><strong>TEST #1</strong></td>
</tr>
<tr>
<td>TH</td>
<td>OCT 14</td>
<td>The Solar System: Origin and Organization of</td>
</tr>
<tr>
<td>TU***</td>
<td>OCT 19</td>
<td>LAB #3: Asteroids</td>
</tr>
<tr>
<td>TH</td>
<td>OCT 21</td>
<td>LAB #4: Comets</td>
</tr>
<tr>
<td>TU</td>
<td>OCT 26</td>
<td>Analyzing a &quot;A Blast from the Past&quot;</td>
</tr>
<tr>
<td>TH</td>
<td>OCT 28</td>
<td>The Moon: Motion, Phases, Tides, Geology</td>
</tr>
<tr>
<td>TU*</td>
<td>NOV  2</td>
<td>LAB #9: Phases of the Moon</td>
</tr>
<tr>
<td>TH</td>
<td>NOV  4</td>
<td>LAB #10: Lunar Geology</td>
</tr>
<tr>
<td>TU</td>
<td>NOV  9</td>
<td>Exploration of the Solar System and the Universe</td>
</tr>
<tr>
<td>TU</td>
<td>NOV 16</td>
<td><strong>TEST #2</strong></td>
</tr>
<tr>
<td>TH</td>
<td>NOV 18</td>
<td>Kepler's Laws of Planetary Motions</td>
</tr>
<tr>
<td>TU</td>
<td>NOV 23</td>
<td>LAB #14: Planetary Configurations</td>
</tr>
<tr>
<td>TU</td>
<td>NOV 30</td>
<td>LAB #16: Planetary Properties</td>
</tr>
</tbody>
</table>
TH DEC  2  LAB #17M: Terrestrial Planet: Mercury
TU***DEC  7  LAB #17V: Terrestrial Planet: Venus
TH** DEC  9  LAB #18: Terrestrial Planet: Mars
TU DEC 14  LAB #19: Jovian Planets
TH DEC 16  Conclusion: The Solar System and Beyond
TU DEC 21  Test #3

* Follow Thursday time schedule

** Extra Credit due

*** Required Article Critiques due (October 19 and December 7)

GRADING RUBRIC FOR LAB ASSIGNMENTS:

4 = Lab on time, neatly done, >90% of answers and tasks correct
3 = Lab is one class session late OR not neat OR 80-90% of questions and tasks correct
2 = Lab is two class sessions late OR 70 - 80% of questions and tasks correct
1 = Lab is three class sessions late OR 60 - 70% of questions and tasks correct
0 = Lab is more than three class sessions late OR <60% questions and tasks correct

SCORING FOR ARTICLE CRITIQUES: (maximum 50 points each)

Selection of Article….0-10 points (research based article, within past 2 years)
Procedure followed…0-10 points (copy, typed, on time, source and date, grammar)
Discussion ............0-20 points (of research, major point, importance)
Opinion ...............0-10 points
COURSE TITLE: ES 21: Astronomy of the Solar System (section 6176)
LOCATION: S 111
TIME: TU: 6:00 - 9:35 and TH: 6:00 - 7:25
INSTRUCTOR: Peggy Lomaga
Business Phone:

Supplies Needed:
1. "Astronomy Through Practical Investigations" lab packet. This includes metric ruler/protractor and star finder chart
2. Any recent astronomy textbook which includes the solar system
3. Calculator
4. Pencils and colored pencils

Course Objectives:
To gain an understanding of the:
1. origin and focus of the space programs;
2. characteristics of the members of the solar system;
3. dimensions of solar system and relative sizes and distances;
4. use of the star finder chart in locating planets;
5. use of the horizon system in conjunction with the star finder;
6. possible origin of solar system and possibilities of other star systems.

Course Procedures:
To complete the course objectives and outline, I will:
1. facilitate class discussion;
2. assist students with laboratory investigations;
3. show films and slides;
4. assign readings from current periodicals;
5. administer quizzes and tests.

Student Requirements:
In order to pass this course, the student should:
1. maintain good attendance! Be on time!
2. participate in class discussions and activities;
3. ask questions, seek help when needed;
4. take good notes;
5. complete all assignments on time;
6. maintain passing grades on all graded materials.
**Grading Procedures:**
1. Final grade will be based on: average of three major tests and two article critiques (50%) and average of labs and quizzes (50%). Class participation and attendance will be considered in the final grade.
2. After THREE unexcused absences, a point per absence will be deducted from the final average.
3. Late assignments will be graded with a late penalty as per rubric.
4. A grade of F will be given to anyone who does not formerly withdraw from course (last date is November 3).

**Tests:**
1. Tests will include information from notes and lab assignments.
2. Tests will be multiple choice, vocabulary, and short answer.
3. You will have as much time as provided for that class session.

**Lab Procedures:**
1. Safe behavior and lab practices are expected at all times.
2. You should work with other students in the class.
3. Ask for my help.
4. Complete lab assignments as instructed. Lab assignments are due at next class session. A quiz may be given at that time. You will be able to use your lab assignment during the quiz.
5. All lab assignments are graded as per the rubric.

**Article Critique:**
1. Select TWO articles relating to topics covered in this course. Articles should be recent, within the past 2 years and based on scientific research.
2. For each article write a reaction paper which is at least two typed pages. (size 12 font, double space, justified) Good grammar is expected!
3. Identify article in the heading by "title", author, source, and date. You must include a copy of the article.
4. These will be graded as per rubric for maximum of 50 points each. The total of both scores will equal a test grade. Due dates are on course outline.
5. Your critique must include the following:
   a. major point(s) discussed in article;
   b. method of research used, researchers' names and location;
   c. significance of research to the science of astronomy of the solar system;
   d. new information you learned from the article;
   e. your opinion about this research and the information, credibility.

**Extra Credit:** Select a non-fiction book related to topic of the solar system. Have the book approved by myself. By December 9 prepare a three to four page critique.

**Office Hours:** Tuesday and Thursday from 5 - 6 pm in S 111 by appointment.