**Learning Objectives**

A successful student in AST 105 will be able to demonstrate a contemporary understanding of the Solar System as outlined in this syllabus and course description, such as the sky and celestial motions; ancient astronomy; the Copernican revolution; light, gravity, orbits, and astronomical instruments; formation of the solar system; sun, planets and moons; asteroids, comets, meteors and meteorites; and the origin of life. Understanding will be demonstrated by a combination of quantitative problem solving, class discussion, testing, and concise technical presentations.

**Required Reading**

Title: Universe  
Author: Freedman, Geller, Kaufmann  
Edition: 9th (both older and newer editions, eBooks, used books, and rentals are also acceptable. References to homework problems will be from the 9th edition, so find a friend if you don’t have that edition.)

**Recommended Reading**

Other readings may be supplied in class.

**List of discussion/lecture topics**

Chapters 1-16 of the textbook.
Pervasive Enrichment Threads

In addition to specific topics, discussion threads will run throughout the course. These include

• Models and their applicability
• History of Science
• Technical writing and presentation and reliability of information

Semester Project

Students will work in teams of two. Each team will present an oral and visual presentation on given topics. Presentations will be 5 minutes in duration with 3 minutes for questions from the audience. Topics will be assigned mid-semester.

Major Assignments/Exams

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance/Participation/Quizzes</td>
<td>10</td>
</tr>
<tr>
<td>Homework</td>
<td>30</td>
</tr>
<tr>
<td>Regular Exam 1</td>
<td>15</td>
</tr>
<tr>
<td>Regular Exam 2</td>
<td>15</td>
</tr>
<tr>
<td>Regular Exam 3</td>
<td>15</td>
</tr>
<tr>
<td>Technical/Historical/Biographical Report</td>
<td>10</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20</td>
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</tbody>
</table>

Grading

University and Department grading policies supersede these rules in case of conflict. Consequently, grading is on a fixed scale, i.e., not curved. Every student can earn an A.

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>93 – 100</td>
<td>A</td>
</tr>
<tr>
<td>90-92</td>
<td>A-</td>
</tr>
<tr>
<td>87-89</td>
<td>B+</td>
</tr>
<tr>
<td>83-86</td>
<td>B</td>
</tr>
<tr>
<td>80-82</td>
<td>B-</td>
</tr>
<tr>
<td>77-79</td>
<td>C+</td>
</tr>
<tr>
<td>73-76</td>
<td>C</td>
</tr>
<tr>
<td>70-72</td>
<td>C-</td>
</tr>
<tr>
<td>67-69</td>
<td>D+</td>
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<tr>
<td>63-66</td>
<td>D</td>
</tr>
<tr>
<td>60-62</td>
<td>D-</td>
</tr>
<tr>
<td>&lt;60 or Academic dishonesty or insufficient effort</td>
<td>F</td>
</tr>
</tbody>
</table>

Occasionally adjustments may be made at the discretion of the instructor for exceptionally difficult exam questions or for strong improvement on the comprehensive final exam.
Communication

Only two communication channels are used in this course:
1. The online system “Canvas” will be used to post lecture materials, homework assignments, and announcements.
2. email@uwm.edu. Students should contact me by email. If an announcement is sufficiently important and urgent, I may “spam” the class with email. Otherwise, announcements will be in Canvas.

Not checking email and Canvas will not be an acceptable excuse for missing assignments or Quiz/Exam announcements.

Examinations and Makeup Examinations

Make up exams are generally not available except at the discretion of the instructor in cases of extreme hardship with advanced notification. Examples of extreme hardship include hospitalization, birth of your child, military deployment, and similar. Examples do not include oversleeping, missing baby sitters, car trouble, etc. Excuses will require documentation.

One exception to this rule is that I want to accommodate religious holy days (or other similar absences) whenever possible. However, accommodations require advanced notice given during the first three weeks of classes so that adequate preparation can be made.

The tone of this section sounds negative. In fact, I want to work with you to maximize your success. Since it is impossible for me to produce a makeup exam that is of exactly the same difficulty as the regular exam, and since it would be unfair to the class for me to give a makeup exam that is easier than the regular exam, the result is that makeup exams are generally a little harder than the regular exams. This difficulty is not a punishment for missing the regular exam. The difficulty is just a matter of fairness to the class. Consequently, it is always to your advantage to attend the regular exams.

Academic Honesty

Academic Integrity is an expectation of each UWM at Washington County student. Our campus community members are responsible for fostering and upholding an environment in which student learning is fair, just, and honest. Through your studies as a UWM at Washington County student, it is essential to exhibit the highest level of personal honesty and respect for the intellectual property of others. Academic misconduct is unacceptable. It compromises and disrespects the integrity of our university and those who study here. To maintain academic integrity, a student must only claim work which is the authentic work solely of their own, providing correct citations and credit to others as needed. Cheating, fabrication, plagiarism, unauthorized collaboration, and/or helping others commit these acts are examples of academic misconduct, which can result in disciplinary action. Failure to understand what constitutes academic misconduct does not exempt responsibility from engaging in it. For more information please read the Academic Misconduct Guide located here: https://tinyurl.com/uwmwaukeshauwsch14
Honors

UWM at Washington County has an honors program. This course can be taken for honors in two different ways.

1. If you have been invited to be a member of the College of General Studies Honors Program and you have accepted that invitation, please inform me during the first week of class so that I can prepare the honors components of the course for you. Honors students will complete additional enrichment assignments, but will be subject to the normal grading scheme described above.

If you have not been invited to be an honors student, but you would like to be considered, or if you have any questions about the Honors Program, please contact Prof. Ellyn Lem at Ellyn.lem@uwc.edu.

2. Even if you are not part of the Honors Program, but you would like to take this particular AST 105 course for honors, please inform me during the first week of class so that I can prepare the honors components of the course for you. For the purposes of this course, you will be treated as any other honors student.

Students with Disabilities

The University of Wisconsin Milwaukee supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform faculty [me] of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Faculty [I], will work either directly with the student [you] or in coordination with the Accessibility Resource Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA.

Gifts

In some cultures, it is customary to give professors gifts, e.g., the old saying “an apple for the teacher”. While I want to honor these gracious gestures, and while I certainly do not want to offend anyone, UWM policy does not allow me to accept any gifts even of trivial value, e.g., cookies your mother baked for me.

I am sure you can understand this rule, since if I received a gift, other students might be concerned that it would lead to special treatment of the donor. While I would never give such special treatment, I will interpret the policy very strictly to avoid even the appearance of impropriety.

In summary, no gifts. Period.
Instructor’s Expectations

Participation: You will be expected to think rather than learn by rote. I will attempt to stimulate thought, but I can’t think for you. My job is not to give you answers -- it is to help you discover answers for yourself. Be inquisitive, ask questions (there are no "dumb" questions, only dumb silences), keep up with the course material on a regular basis, and make an effort to understand the issues. Be an active participant in the learning process. A portion of your grade is based on POSITIVE class participation.

Reading/Textbook: You are expected to read the chapter in the text that corresponds with the class before you come to that class. You will be lost in class if you have not done the reading and familiarized yourself with the topics of discussion.

Professionalism: You are expected to conduct yourselves in the classroom in a professional manner at all times. This includes respecting others, paying attention to the speaker (whether a student or the instructor), showing up on time, staying awake, etc. Texting and surfing the net during class time are NOT acceptable – EVER.

Success: If you want to be successful in this class.
1. Attend all classes. Take notes.
2. Read book before class and notes after the class.
3. Class participation is very important component of this class. You will be expected to participate in class discussion, ask questions and answer them.
4. Don’t be afraid to ask questions. Ask, ask, ask.
5. Allot one hour per day each of six days per week at a time when you are fresh to study.
6. Make best use of office hours.

Attendance:
It is mandatory that you be in every scheduled class. If you have to miss a lecture, it will be your responsibility to arrange with a colleague to get class notes and find out about any announcements. Attendance and participation combined together will count for a portion of your grade.

Time Workload:
To facilitate your planning, the following table describes the minimum expected time commitment to be successful in this course.

<table>
<thead>
<tr>
<th></th>
<th>Hours per week</th>
<th>Hours per semester (43 hours in class or 14.33 weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture (21 lectures of new material @ 1 hour per lecture plus in-class exam reviews)</td>
<td>3</td>
<td>43</td>
</tr>
<tr>
<td>Reading and Preparation for Classroom Participation and Quizzes</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>Homework</td>
<td>3</td>
<td>43</td>
</tr>
<tr>
<td>Semester Project</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Exam Preparation (3 regular exams @ 3 hours per exam plus final exam review 6 hours)</td>
<td>≈1</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td>150</td>
</tr>
</tbody>
</table>
Additional Important Policy Statements for all UWM at Washington County Students

UWM at Washington County Title IX Syllabus Statement
UWM at Washington County faculty and staff are committed to supporting our students and upholding the UWM at Washington County policies and federal laws as outline by Title IX. Title IX of the Education Amendments of 1972 protects individuals from discrimination based on sex and gender in any educational program or activity operated by recipients of federal financial assistance. Sexual violence, such as sexual harassment and sexual assault, are prohibited by Title IX.

If you or a friend experience an incident of sex or gender based discrimination, we encourage you to report it. There are many resources available to assist you. If a student chooses to confide in a UWM at Washington County faculty or staff member regarding an issue of sexual violence or discrimination, as a “Responsible Employee” the faculty or staff member will need to share this information with the UWM at Washington County’ Title IX Deputy Coordinator. The Title IX Deputy Coordinator will assist the student in connecting with all possible resources both on and off campus. You can reach Kristine McCaslin, the Title IX Deputy Coordinator at (715) 261-6212 or kristine.mccaslin@uwc.edu.

If you would like to speak with someone who is not required to report to the Title IX Deputy Coordinator, the campus counselor is a confidential resource for you. You can contact the counselor by calling (262) 808-4134 or emailing michelle.henderson@uwc.edu.

UWM at Washington County Inclusive Learning Statement
The UWM at Washington County are committed to building diverse and inclusive learning, living, and working environments. We value mutual respect for all and do not tolerate discrimination on our campuses or within our programs and activities. We view this as both a moral imperative consistent with an intellectual community that celebrates individual differences and diversity, as well as a matter of law. If you encounter discrimination or harassment based on your age, ancestry, color, disability, ethnicity, gender identity or expression, marital status, medical status, military status, national origin, pregnant or parenting status, race, religion, sex, sexual orientation, or protected veteran status, please contact the Office of Equity, Diversity, and Inclusion at http://inclusion.uwex.uwc.edu/ or file a report a report at http://uwc.edu/students/report-bias.

UWM at Washington County BIT Syllabus Statement
UWM at Washington County is committed to the safety and success of all members of the campus community. To support this initiative, the UWM at Washington County campus has a Behavioral Intervention Team which works to support campus community members, including students, by reaching out and providing resources in areas where an individual may be struggling or experiencing barriers to their success. The program allows faculty to be proactive, supportive, and involved in facilitating the success of our students through early detection, reporting, and intervention. As your faculty member, I may contact the Behavioral Intervention Team if I sense you are in need of additional support which individually I may not be able to provide. You may also contact the Behavioral Intervention Team if you or another member of our campus community needs support, is distressed, or exhibits concerning behavior that is interfering with the academic or personal success or the safety of others, by reporting here: https://uwm.edu/deanofstudents/report-it/
Additional References

1. **Students with disabilities.** Notice to these students should appear prominently in the syllabus so that special accommodations are provided in a timely manner. [http://uwm.edu/arc/](http://uwm.edu/arc/)

2. **Religious observances.** Accommodations for absences due to religious observance should be noted. [https://www4.uwm.edu/secu/docs/other/S_1.5_ACCOMMODA_OUS_BELIEFS.pdf](https://www4.uwm.edu/secu/docs/other/S_1.5_ACCOMMODA_OUS_BELIEFS.pdf)

3. **Students called to active military duty.** Accommodations for absences due to call-up of reserves to active military duty should be noted.

   Students: [http://uwm.edu/active-duty-military/](http://uwm.edu/active-duty-military/)


4. **Incompletes.** A notation of "incomplete" may be given in lieu of a final grade to a student who has carried a subject successfully until the end of a semester but who, because of illness or other unusual and substantiated cause beyond the student's control, has been unable to take or complete the final examination or to complete some limited amount of termwork.

   [https://www4.uwm.edu/secu/docs/other/S_31_INCOMPLETE_GRADES.pdf](https://www4.uwm.edu/secu/docs/other/S_31_INCOMPLETE_GRADES.pdf)

5. **Discriminatory conduct.** Discriminatory conduct will not be tolerated by the University. It poisons the work and learning environment of the University and threatens the careers, educational experience, and well-being of students, faculty, and staff.

   [https://www4.uwm.edu/secu/docs/other/S_47_Discriminatory_Policy.pdf](https://www4.uwm.edu/secu/docs/other/S_47_Discriminatory_Policy.pdf)

6. **Title IX/Sexual Violence.** Title IX is a federal law that prohibits sex discrimination in education programs or activities, and UWM policy prohibits such conduct (see Discriminatory Conduct, above). This includes sexual violence, which may include sexual harassment, sexual assault, relationship violence, and/or stalking in all educational programs and education-related areas. UWM strongly encourages its students to report any instance of sex discrimination to UWM’s Title IX Coordinator (titleix@uwm.edu). Whether or not a student wishes to report an incident of sexual violence, the Title IX Coordinator can connect students to resources at UWM and/or in the community including, but not limited to, victim advocacy, medical and counseling services, and/or law enforcement. For more information, please visit: [https://uwm.edu/sexual-assault/](https://uwm.edu/sexual-assault/)

7. **Academic misconduct.** Cheating on exams or plagiarism are violations of the academic honor code and carry severe sanctions, including failing a course or even suspension or dismissal from the University. [http://uwm.edu/academicaffairs/facultystaff/policies/academic-misconduct/](http://uwm.edu/academicaffairs/facultystaff/policies/academic-misconduct/)

8. **Complaint procedures.** Students may direct complaints to the head of the academic unit or department in which the complaint occurs. If the complaint allegedly violates a specific university policy, it may be directed to the head of the department or academic unit in which the complaint occurred or to the appropriate university office responsible for enforcing the policy.

   [https://www4.uwm.edu/secu/docs/other/S_47_Discriminatory_Policy.pdf](https://www4.uwm.edu/secu/docs/other/S_47_Discriminatory_Policy.pdf)

9. **Grade appeal procedures.** A student may appeal a grade on the grounds that it is based on a capricious or arbitrary decision of the course instructor. Such an appeal shall follow the established procedures adopted by the department, college, or school in which the course resides or in the case of graduate students, the Graduate School. These procedures are available in writing from the respective department chairperson or the Academic Dean of the College/School.

   [https://www4.uwm.edu/secu/docs/other/S_28_Grade_Appe_by_Students.pdf](https://www4.uwm.edu/secu/docs/other/S_28_Grade_Appe_by_Students.pdf)

10. **LGBT+ resources.** Faculty and staff can find resources to support inclusivity of students who identify as LGBT+ in the learning environment. [http://uwm.edu/lgbtrc/](http://uwm.edu/lgbtrc/)

11. **Smoke and Tobacco-Free campus.** UWM prohibits smoking and the use of tobacco on all campus property.

   [https://www4.uwm.edu/secu/docs/other/S_49_Smoke_Tobacco_Free_Policy.pdf](https://www4.uwm.edu/secu/docs/other/S_49_Smoke_Tobacco_Free_Policy.pdf)

12. **Final Examinations.** Information about the final exam requirement, the final exam date requirement, and make-up examinations.

   [https://www4.uwm.edu/secu/docs/other/S_22_Final_Examinations.pdf](https://www4.uwm.edu/secu/docs/other/S_22_Final_Examinations.pdf)