

# ASTRONOMY 205

## THE SOLAR SYSTEM

Fall 2020

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**ASTR 205. The Solar System. 4 cr. A contemporary perspective with emphasis on understanding basic principles of astronomy, coordinate systems, telescopes, planetary phenomena, and recent results of planetary exploration. 3 hrs lec, 3 hrs lab per wk. Prereq: MATH 100 or equiv or cons chair. GDR: NS; GEP: NSC**

**Delivery Format:** HYBRID

LECTURES and LABS EXERCISES: ONLINE ASYNCHRONOUS

OCCASIONAL PLANETARIUM IN-PERSON EVENTS: one-hour planetarium sessions in cohorts might happen this semester. As of August 30, we are experiencing some technical challenges with the new system. Provided that we can sort them out in a timely manner, we will start organizing safe visits to the Allen F. Blocher Planetarium. So, stay tuned for updates...

**Office Hours:** By appointment. Send me an email and I will be happy to schedule a Zoom meeting with you, as needed and requested.

**Weekly Zoom Helping Session:** I will host a one-hour Zoom session every week, open to the whole class: Tuesday 2-3 PM. You will receive an invitation in email prior to that.

**Textbook(s):** *21<sup>st</sup> Century Astronomy 6th Ed. by Kay, Palen & Blumenthal (available at the store)*

**Supplementary textbook resources:**

<https://openstax.org/details/books/astronomy> - free online textbook

<http://astronomynotes.com/> - free online textbook

**Other required materials:** A *scientific* calculator (graphing capabilities not needed)

**Course website:** <https://uwstp.instructure.com/courses/334806>

Log on using your UWSP login and password. ***This website will be used for posting grades, lecture and lab notes, homework assignments, study guides, discussion sessions, etc. It is the main hub-interface for this course.***

**Learning Outcomes** – Upon completing this course, students will be able to:

- Explain major concepts, methods, or theories used in the Astronomy/Planetary Science to investigate the physical world.
- Interpret information, solve problems, and make decisions by applying natural science concepts, methods, and quantitative techniques.
- Describe the relevance of aspects of the Astronomy/Planetary Science to their lives and society.

**Grading Policies:**

You will have the following contribution to your final grade:

**Laboratory work 17%**

**Three midterm exams each 15%**

**Final exam 20%**

**Homework 10%**

**CANVAS Discussions 3%**

**Student Presentations 5%**

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**TOTAL: 100%**

Your current grades will be kept updated as often as possible on CANVAS. If you have any questions/confusions on the listed grades, please contact me immediately so any errors can be corrected.

The final letter grade will be assigned according to the following scale:

A → 93-100%	A- → 90-92.99%	
B+ → 87-89.99%	B → 83-86.99%	B- → 80-82.99%
C+ → 77-79.99%	C → 73-76.99%	C- → 70-72.99%
D+ → 67-69.99%	D → 60-66.99%	
F → less than 60%		

**Lecture:** I will post short video-lectures for each section of each chapter covered in the course.

**Laboratory:** The laboratory is an integral part of the Astronomy 205 course. A missed lab will automatically bring a zero contribution to the corresponding lab grade. All labs contribute equally, towards the final grade, with an overall 17% contribution. **Failing the lab component of the class (i.e., scoring below 60%) will automatically result in a failing grade for the ENTIRE Astr205 course. All labs will be on CANVAS. There will be a deadline for each lab, about one per week. There will be a short video providing instructions for each lab. The lowest lab score will be dropped at the end of the semester. Students will submit individual lab reports via CANVAS, following provided instructions.**

**Midterm Exams:** There will be **three** midterm exams during the semester. They will be on-line, on CANVAS. There will be specific dates selected for a midterm exam. An exam will be available for a full 24 hours before closing. You may take it at any time within the 24-hour period. However, once you start working on it, the timer will start and will only allow you 60 minutes of uninterrupted work. You may not work for 10 min. and come back later to resume. It will be a single one-hour, uninterrupted window.

Each midterm is worth 15% of your final grade and is based on the material covered in lecture, labs, and homework over the past weeks. Each midterm will cover a distinct segment of the overall material.

**Final exam:** A **comprehensive** final exam will be given during finals week – DATE: December 17. It is worth 20% of your final grade. The final exam will be on-line, on CANVAS. It will be available for the full 24 hours the day it is scheduled. Again, you can decide to start at any time within the 24-hour window, but you must work on it continuously for 2-hours. If you start at 11PM, you will be left with only one hour, as the 24-window closes at midnight.

**Note: The lowest grade of the three midterm examinations can be replaced by the grade of the final exam (preserving the predefined contribution of 15%). This can be done only if the final exam grade is higher than the lowest grade of all three midterms. However, if you miss a midterm, this rule does not apply (a zero will not get replaced by a grade equal to that of the final exam!!!). Only one midterm grade can be replaced!**

**Homework:** I will post a homework assignment on the course website about every week. I will clearly announce when the homework is available on the website and emphasize the due date. Homework assignments will be **submitted online** by the due date/time. **No homework will be accepted after the indicated due date/time. The lowest grade of all homework assignments will be dropped.** All homework will account for 10% of your final grade.

**CANVAS Discussions:** There will be occasional Discussions on CANVAS, with specific/focused topics. Students are expected to contribute within the time window indicated, using decent, respectful words. Students are expected to use full, clear sentences. Please stay on the topic. You will only see your classmates' comments after you will have submitted yours. Participation in the discussion sessions will bring a max of 3% toward the final grade. **Any inappropriate comments will result in removing the student from the discussions from that point forward and the loss of corresponding discussion points.**

**Student presentations:** I will take the liberty of splitting the class in teams of two students.

*Every team* will deliver two presentations to their fellow classmates during the **last two weeks of classes scheduled in the semester.** We will set up synchronous ZOOM sessions for the whole class and teams will take turns to present. Note that these will be LIVE presentations for the instructor and your classmates. I will not record the event. The first presentation will consist of a 1-2 slide(s) about a recent discovery/event in Astronomy/Space Exploration/Planetary Science covered by news media anytime during the current academic term (a press release for example). The second presentation will cover 10-15 minutes and will be on a predefined topic from a list. Proper instructions will be provided later. I will make sure you will have about 6 weeks to prepare for these presentations. Both members of a team will get the *same* grade for the presentations. The total contribution to the final grade is 5% (2% and 3%, respectively for the two distinct presentations).

**Suggestions for Studying:**

**1. Study regularly and constantly.**

There is a lot of material covered, most of it probably a complete novelty. The course builds up sequentially and adds a substantial number of new terms to your vocabulary. It is more and more difficult to keep up with the flow of the course if you do not grasp the new concepts as they arise. Postponing study for the night before an exam rarely pays off.

**2. Do not hesitate to ask for guidance and help via email or requesting a Zoom meeting with me.**

Do not hesitate to ask me any kind of questions related to the lecture, labs, homework or any other subject related to Astronomy.

**3. Try to attend actively.**

**4. Find someone in the class to study with.**

Get to know your classmates well enough so that you can ask for lecture notes, get together (virtually) to study for exams, etc.

**Absences due to Military Service:**

You will not be penalized for class absence due to unavoidable or legitimate required military obligations, or medical appointments at a VA facility, not to exceed two (2) weeks unless special permission is granted by the instructor. You are responsible for notifying faculty members of such circumstances as far in advance as possible and for providing documentation to the Office of the Dean of Students to verify the reason for the absence. The faculty member is responsible to provide reasonable accommodations or opportunities to make up exams or other course assignments that have an impact on the course grade. For absences due to being deployed for active duty, please refer to the <https://www.uwsp.edu/veteran-services/Pages/Call-Up-Guidelines.aspx>.

**Equal Access for Students with Disabilities:**

Students with special needs should contact the Office of Disability Services as soon as possible (<http://www.uwsp.edu/disability/Pages/default.aspx>) in order to request suitable accommodation. UW-

Stevens Point will modify academic program requirements as necessary to ensure that they do not discriminate against qualified applicants or students with disabilities. The modifications should not affect the substance of educational programs or compromise academic standards; nor should they intrude upon academic freedom. Examinations or other procedures used for evaluating students' academic achievements may be adapted. The results of such evaluation must demonstrate the student's achievement in the academic activity, rather than describe his/her disability.

*If modifications are required due to a disability, please inform the instructor and contact the Disability and Assistive Technology Center to complete an Accommodations Request form. Phone: 346-3365 or Room 609 Albertson Hall.*

### **Religious Beliefs Accommodation**

It is UW System policy to reasonably accommodate your sincerely held religious beliefs with respect to all examinations and other academic requirements.

You will be permitted to make up an exam or other academic requirement at another time or by an alternative method, without any prejudicial effect, if:

- There is a scheduling conflict between your sincerely held religious beliefs and taking the exam or meeting the academic requirements; and
- You have notified your instructor within the first three weeks of the beginning of classes (first week of summer or interim courses) of the specific days or dates that you will request relief from an examination or academic requirement.

### **Academic Honesty: Students are expected to maintain the highest standards of academic integrity.**

More information on your rights and responsibilities are available at:

[http://docs.legis.wisconsin.gov/code/admin\\_code/uws/14.pdf](http://docs.legis.wisconsin.gov/code/admin_code/uws/14.pdf)

#### UWSP 14.01 Statement of principles

The board of regents, administrators, faculty, academic staff and students of the University of Wisconsin system believe that academic honesty and integrity are fundamental to the mission of higher education and of the University of Wisconsin system. The university has a responsibility to promote academic honesty and integrity and to develop procedures to deal effectively with instances of academic dishonesty. Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect of others' academic endeavors.

#### UWSP 14.03 Academic misconduct subject to disciplinary action.

Academic misconduct is an act in which a student:

- (a) Seeks to claim credit for the work or efforts of another without authorization or citation;
- (b) Uses unauthorized materials or fabricated data in any academic exercise;
- (c) Forges or falsifies academic documents or records;
- (d) Intentionally impedes or damages the academic work of others;
- (e) Engages in conduct aimed at making false representation of a student's academic performance; or
- (f) Assists other students in any of these acts.

### **Help Resources:**

Tutoring	Advising	Safety and General Support	Health
Tutoring and Learning Center helps with Study Skills, Writing, Technology, Math, & Science. 018 Albertson Hall, ext 3568	Academic and Career Advising Center, 320 Albertson Hall, ext 3226	Dean of Students Office, 212 Old Main, ext. 2611	Counseling Center, Delzell Hall, ext. 3553. Health Care, Delzell Hall, ext. 4646

**UWSP Service Desk:**

The Office of Information Technology (IT) provides a Service Desk to assist students with connecting to the Campus Network, virus and spyware removal, file recovery, equipment loan, and computer repair. You can contact the Service Desk via email at [techhelp@uwsp.edu](mailto:techhelp@uwsp.edu) or at (715) 346-4357 (HELP) or visit: <https://www.uwsp.edu/infotech/Pages/ServiceDesk/default.aspx>

Lecture materials and recordings for Astr205 are protected intellectual property at UW-Stevens Point. Students in this course may use the materials and recordings for their personal use related to participation in this class. Students may also take notes solely for their personal use. If a lecture is not already recorded, you are not authorized to record my lectures without my permission unless you are considered by the university to be a qualified student with a disability requiring accommodation. [Regent Policy Document 4-1] Students may not copy or share lecture materials and recordings outside of class, including posting on internet sites or selling to commercial entities. Students are also prohibited from providing or selling their personal notes to anyone else or being paid for taking notes by any person or commercial firm without the instructor's express written permission. Unauthorized use of these copyrighted lecture materials and recordings constitutes copyright infringement and may be addressed under the university's policies, UWS Chapters 14 and 17, governing student academic and non-academic misconduct.

**Tentative Sequence of Topics:**

Why Learn Astronomy? Patterns in the Sky Motions of Astronomical Bodies Gravity and Orbits Light	The Tools of the Astronomer Birth & Evolution of Planetary Systems The Terrestrial Planets & Earth's Moon Atmospheres of the Terrestrial Planets	The Giant Planets Tidal Forces Planetary Moons and Rings Dwarf Planets and Small Solar System Bodies The Search for Extraterrestrial Life
Midterm 1 (Wednesday, Sept. 30)	MIDTERM 2 (Wednesday, Oct 29)	MIDTERM 3 (Tuesday, Nov 24)

**FINAL EXAM (ON CANVAS) – Thursday, December 17 – 2hr. – CUMULATIVE/COMPREHENSIVE**

**Tentative Pattern for the Sequence of Weekly Homework and Lab Exercises:**

Each homework and each lab exercise will start Thursday morning at 8AM and it is due a week later, the following Thursday at 8PM, unless otherwise specified.

**Tentative Laboratory Exercises (order and titles subject to change):**

The Rotating Sky, Basic Coordinates Seasons
Motions of the Sun
Phases of the Moon and Eclipses
Planetary Orbits
Measuring the Mass of Jupiter

Radius and Mass of a Planet
Spectroscopy
Extrasolar (Exo-) Planets
Planetary Surfaces
Planet Video
Saturn's Spectra

**Face Coverings:**

- At all UW-Stevens Point campus locations, the wearing of face coverings is mandatory in all buildings, including classrooms, laboratories, studios, and other instructional spaces. Any student with a condition that impacts their use of a face covering should contact the [Disability and Assistive Technology Center](#) to discuss accommodations in classes. Please note that unless everyone is wearing a face covering, in-person classes cannot take place. This is university policy and not up to the discretion of individual instructors. Failure to adhere to this requirement could result in formal withdrawal from the course.

**Other Guidance:**

- Please monitor your own health each day using [this screening tool](#). If you are not feeling well or believe you have been exposed to COVID-19, do not come to class; email your instructor and contact Student Health Service (715-346-4646).
  - As with any type of absence, students are expected to communicate their need to be absent and complete the course requirements as outlined in the syllabus.
- Maintain a minimum of 6 feet of physical distance from others whenever possible.
- Do not congregate in groups before or after class; stagger your arrival and departure from the classroom, lab, or meeting room.
- Wash your hands or use appropriate hand sanitizer regularly and avoid touching your face.
- Please maintain these same healthy practices outside the classroom.