湖北工業大學
HUBEI UNIVERSITY OF TECHNOLOGY

Course Title	Astronomy of the Solar System
Course Code	ASTR 1301
Semester	Summer 2025
Course Length	5 weeks, 60 Contact Hours
Credits	4
Instructor	TBA
Office	TBA
Email	TBA
Prerequisite	N/A

Course Description:
This course introduces the student to the nature and origin of the solar system, including the sun and its family of planets, comets, and asteroids. It covers the principles of physics that allow us to understand the nature of these bodies. The history of astronomy, space exploration, and extraterrestrial life are also discussed. The student will also learn about scientific thinking and the scientific method as applications of critical thinking.

Course Goals:

Students who successfully complete this course will demonstrate competency in the following general education core goals:

- **Critical thinking skills** – Students will engage in creative and/or innovative thinking, and/or inquiry, analysis, evaluation, synthesis of information, organizing concepts, and constructing solutions.
- **Communication skills** – Students will demonstrate effective written, oral, and visual communication.
- **Teamwork** – Students will demonstrate the ability to work effectively with others to support a shared purpose or goal and consider different points of view.
- **Social responsibility** – Students will demonstrate intercultural competency and civic knowledge by engaging effectively in local, regional, national, and global communities.

Student Learning Outcomes:

Upon completion of this course, students will be able to:

- discuss how astronomical observations contributed to the scientific revolution of the 17th century and explain the evidence for a heliocentric model for our solar system;

- describe and explain the apparent motions of celestial bodies as seen from an observer on Earth and apply this knowledge to predict positions and appearances of objects in the sky based on the time and the location of the observer;
- describe current theories of planet formation and relate these to present-day understanding of the structure of our solar system.

Textbooks/Supplies/Materials/Equipment/ Technology or Technical Requirements:

21st Century Astronomy, 7th Edition, Palen & Blumenthal. W. W. Norton & Company.

Course Requirements:

Homework
Homework will be assigned for each unit. Assignments will be announced in class and due dates will be clearly specified.

Term Paper
Your term paper can take the form of: reading a book and writing a critical review, or researching some topic in the history of astronomy (could be from ancient times or just the past couple of years) and seeing how ideas on the topic evolved with time or how the idea is treated in introductory textbooks, or another project of your own design. The final report must be no longer than 10 pages, double-spaced, 12-point font.

In-Class Tests
The tests will be held at the normal class time and you will have the entire class time to take it. Both in-class tests and the final exam will be closed-book and closed-notes. The in-class tests will cover the material in the lectures and readings since the previous test, whereas the final exam will be comprehensive, covering the entire quarter.

Final Exam
Attendance at the Final Exam is mandatory. The final will be comprehensive, covering all lectures, and will have the same format as the in-class tests, only it will be longer.

Assessments: Activity	**Percent Contribution**
Homework	15%
Term Paper	30%
In-Class Tests	25%
Final Exam	30%

Grading:

Final grades will be based on the sum of all possible course points as noted above.

Percentage of available points	**Grade**
90 - 100	A

80 - 89	B
70 - 79	C
60 - 69	D
＜60	F

Course Schedule:
The schedule of activities is subject to change at the reasonable discretion of the instructor. Minor changes will be announced in class, and major ones provided in writing.

ASTR 1301 Schedule

Lecture	Topic	Readings
L1	Class Introduction	---
L2	Basic Tools, Observations, and History of Astronomy	Chapter 1, 6
L3	Introductions and Size Scales	Chapter 1
L4	Motions of the Earth and the Moon	Chapter 2
L5	Motions of the Earth and the Moon	Chapter 2
L6	Motions of Astronomical Bodies	Chapter 3
L7	Motions of Astronomical Bodies	Chapter 3
L8	**In-Class Test 1**	---
L9	Gravity	Chapter 4
L10	Light	Chapter 5
L11	The Tools of the Astronomer	Chapter 6
L12	Solar System Beginnings and Rocky Planets	Chapter 7
L13	The Formation of Our Solar System	Chapter 7
L14	**In-Class Test 2**	---
L15	The Terrestrial Planets and Earth's Moon	Chapter 8
L16	Radiometric Dating Tells Us the Age of the Moon and the Solar System	Chapter 8
L17	Atmospheres of the Terrestrial Planets	Chapter 9
L18	Atmospheres of the Terrestrial Planets	Chapter 9
L19	Worlds of Gas and Liquid - The Giant Planets	Chapter 10
L20	Planetary Moons and Rings	Chapter 11
L21	Planetary Moons and Rings	Chapter 11
L22	**In-Class Test 3**	---
L23	Dwarf Planets and Small Solar System Bodies	Chapter 12
L24	Dwarf Planets and Small Solar System Bodies Term Paper hand-in	Chapter 12
L25	**Final Exam**	---

Accommodation Statement:

Academic accommodations may be made for any student who notifies the instructor of the need for an accommodation. It is imperative that you take the initiative to bring such needs to the instructor's attention, as he/she is not legally permitted to inquire. Students who may require assistance in emergency evacuations should contact the instructor as to the most appropriate procedures to follow.

Academic Integrity Statement

Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters. The University reserves the right to take disciplinary action, up to and including dismissal, against any student who is found

guilty of academic dishonesty or otherwise fails to meet the standards. Any student judged to have engaged in academic dishonesty in coursework may receive a reduced or failing grade for the work in question and/or for the course.

Academic dishonesty includes, but is not limited to, dishonesty in quizzes, tests, or assignments; claiming credit for work not done or done by others; hindering the academic work of other students; misrepresenting academic or professional qualifications within or without the University; and nondisclosure or misrepresentation in filling out applications or other University records.

Other Items:

Attendance and Expectations
All students are required to attend every class, except in cases of illness, serious family concerns, or other major problems. We expect that students will arrive on time, be prepared to listen and participate as appropriate, and stay for the duration of a meeting rather than drift in or out casually. In short, we anticipate that students will show professors and fellow students maximum consideration by minimizing the disturbances that cause interruptions in the learning process. This means that punctuality is a must, that cellular phones be turned off, and that courtesy is the guiding principle in all exchanges among students and faculty. You will be responsible for the materials and ideas presented in the lecture.

Assignment Due Dates
All written assignments must be turned in at the time specified. Late assignments will not be accepted unless prior information has been obtained from the instructor. If you believe you have extenuating circumstances, please contact the instructor as soon as possible.

Make-Up Work
The instructor will not provide students with class information or make-up assignments/quizzes/exams missed due to an unexcused absence. Absences will be excused and assignments/quizzes/exams may be made up only with written documentation of an authorized absence. Every effort should be made to avoid scheduling appointments during class. An excused student is responsible for requesting any missed information from the instructor and setting up any necessary appointments outside of class.

Access, Special Needs and Disabilities
Please notify the instructor at the start of the semester if you have any documented disabilities, a medical issue, or any special circumstances that require attention, and the school will be happy to assist.