PHYS 1304 DECFE – Solar System Online

Course Syllabus: Fall 2026 (December)

"Northeast Texas Community College exists to provide personal, dynamic learning experiences empowering students to succeed."

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Weekday	Office Hours
Monday	Online
Tuesday	Online
Wednesday	Online
Thursday	Online
Friday	Online

This syllabus serves as the documentation for all course policies and requirements, assignments, and instructor/student responsibilities.

Information relative to the delivery of the content contained in this syllabus is subject to change. Should that happen, the student will be notified.

Course Description:

This course is the study of the sun and other bodies in our solar system, including the origin of our solar system. Three hours college credit.

Prerequisite(s): TSI Complete Status

Student Learning Outcomes:

1304.1. Recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry used in modern astrophysics.
1304.2. Communicate observations and interpretations clearly through written communication.
1304.3. Use basic laws of astronomy to solve assigned tasks.
1304.4. Translate, interpret, and extrapolate scientific theory governing the formation and evolution of the solar system.
1304.5. Use simple astronomy laboratory techniques to collect, manipulate, analyzed, and draw conclusions from data representing physical phenomenon while working individually and in teams.

Core Curriculum Purpose and Objectives:

Through the core curriculum, students will gain a foundation of knowledge of human cultures and the physical and natural world; develop principles of personal and social responsibility for living in a diverse world; and advance intellectual and practical skills that are essential for all learning.

Courses in the foundation area of mathematics focus on quantitative literacy in logic, patterns, and relationships. In addition, these courses involve the understanding of key mathematical concepts and the application of appropriate quantitative tools to everyday experience.

Program Student Learning Outcomes:

Critical Thinking Skills

CT.1 Students will demonstrate the ability to 1) analyze complex issues, 2) synthesize information, and 3) evaluate the logic, validity, and relevance of data.

Communication Skills

CS.1 Students will effectively develop, interpret and express ideas through written communication.

Empirical and Quantitative Skills

EQS.1 Students will manipulate numerical data or observable facts by organizing and converting relevant information into mathematical or empirical form

EQS.2 Students will analyze numerical data or observable facts by processing information with correct calculations, explicit notations, and appropriate technology.

EQS.3 Students will draw informed conclusions from numerical data or observable facts that are accurate, complete, and relevant to the investigation.

Teamwork

TW.2 Students will work with others to support and accomplish a shared goal.

Evaluation/Grading Policy:

The breakdown of the course requirements is as follows:

%	Requirement
15%	Assignments in McGraw-Hill Connect
15%	Blackboard Discussions
70%	Exams, including the Final Exam

Semester grades will be earned as follows

Percentage	Letter Grade
90% and above	A
80 %–89%	B
70 %–79%	C
60%–69 %	D
59.9% and below	F

We will be using *Pathways to Astronomy*, 6th Ed by Schneider and Arny. You will find a link in the class Blackboard that take you to the website where you will complete your assignments. Assignments hosted in McGraw-Hill (the publisher) will represent 15% of your course average. Participation in Blackboard discussions counts a total of 15%. There will be three tests during the semester and one final exam. The average of all tests (including the final exam) is worth 70% of your final grade.

Tests/Exams:
Test 1: Welcome Home
Test 2: Astronomy Physics
Test 3: Planetary Systems
FINAL EXAM: Cumulative

Required Instructional Materials:

Pathways to Astronomy, 6th edition by Scheider and Arny
Publisher: McGraw-Hill **ISBN Number: 9781260445107**

Optional Instructional Materials:

None

Minimum Technology Requirements:
Computer Access and Internet Access, as well as a Scientific Calculator

Required Computer Literacy Skills:
Access to Blackboard and McGraw-Hill Connect to complete all assignments and tests.

Course Structure and Overview:
Students will be responsible for completing the reading assignments listed in the syllabus schedule to perform well on the homework, quizzes, and exams. Discussion assignments are made to assist in critical thinking and connecting individual facts to make a more complete concept.

Use of Proctorio:
To ensure all students are graded fairly and no one has the unfair advantage of cheating on quizzes and tests, Proctorio will be used. The browser add-on makes use of the webcam to flag any suspicious activity and report it to the instructor. You have the option to take the test at a proctored location. If you live near NTCC, you are welcome to use the Student Services Testing Center free of charge. You may use a testing center near your location, but you must handle the arrangements for the testing center and forward the necessary contact to the instructor for approval. If in-person proctoring is used, the instructor must approve of the proctoring a minimum of one week before the proctored test. Failure to arrange alternative proctoring early enough will result in Proctorio being required for the test.

Communications:
Blackboard Course Messages are the only recognized method of communication. Messages will be responded to within 24 hours IF SENT SUNDAY-THURSDAY. Any information that I send out will be done via Blackboard. I will NOT email sensitive information to a non-NTCC address.

Institutional/Course Policy:
Due to the short timeline of the course, late work will be accepted or denied on a case by case basis. Quizzes and Tests will not be accepted late without prior approval by the instructor. Students and instructor are expected to treat each other with respect in all communication (email, phone call, and discussion board).

Alternate Operations During Campus Closure and/or Alternate Course Delivery Requirements:
In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Northeast Texas Community College to move to altered operations. During this time, Northeast Texas Community College may opt to continue delivery of instruction through methods that include, but are not limited to, online through the Blackboard Learning Management System, online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor NTCC's website (http://www.ntcc.edu/) for instructions about continuing courses remotely, Blackboard for each class for course-specific communication, and NTCC email for important general information.

Additionally, there may be instances where a course may not be able to be continued in the same delivery format as it originates (face-to-face, fully online, live remote, or hybrid). Should this be the case, every effort will be made to continue instruction in an alternative delivery format. Students will be informed of any changes of this nature through email messaging and/or the Blackboard course site.

Statement Regarding the Use of Artificial Intelligence (AI) Technology:

Employees and students shall be permitted to explore artificial intelligence (AI) and implement its use in and out of the classroom in accordance with policy and administrative regulations. The use of AI shall only be as a support tool to enhance student outcomes or as necessary to engage in research and shall never take the place of faculty, staff, and student decision-making. Any use of AI must comply with law, policy, and administrative regulations relating to student and employee privacy and data security. A student shall only use AI tools with faculty permission and shall be expected to produce original work and properly credit sources, including AI tools used in creating the work.

Example:
APA (7th edition)

OpenAI. (2026). ChatGPT (March 25 version) [Large language model]. https://chat.openai.com/

MLA (9th edition)

OpenAI. ChatGPT. 25 Mar. 2026, https://chat.openai.com/.

Employees or students who use AI tools to deceptively harm, bully, or harass others shall be disciplined in accordance with policy. [See DH, DIA series, FFD series, FFE, FLB, and the FM series] AI Use by Employees and Students. Northeast Texas Community College 225500 TECHNOLOGY RESOURCES CRB ARTIFICIAL INTELLIGENCE (LOCAL) DATE ISSUED: 12/8/2025 1 of 1 UPDATE 50 CRB(LOCAL)-AJC Adopted: 12/16/2025

NTCC Academic Honesty/Ethics Statement:

NTCC upholds the highest standards of academic integrity. The college expects all students to engage in their academic pursuits in an honest manner that is beyond reproach using their intellect and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. This course will follow the NTCC Academic Honesty and Academic Ethics policies stated in the Student Handbook. Refer to the student handbook for more information on these subjects.

ADA Statement:

It is the policy of NTCC to provide reasonable accommodation for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodation as required to afford equal educational opportunity. It is the student's responsibility to request accommodation. An appointment can be made with the Academic Advisor/Coordinator of Special Populations located in Student Services and can be reached at 903-434-8264. For more information and to obtain a copy of the Request for Accommodations, please refer to the special populations page on the NTCC website.

Family Educational Rights and Privacy Act (FERPA):

The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children's educational records. These rights transfer to the student when he or she attends a school beyond the high school level. Students to whom the rights have transferred are considered "eligible students." In essence, a parent has no legal right to obtain information concerning the child's college records without the written consent of the student. In compliance with FERPA, information classified as "directory information" may be released to the general public without the written consent of the student unless the student makes a request in writing. Directory information is defined as: the student's name, permanent address and/or local address, telephone listing, dates of attendance, most recent previous education institution attended, other information including major, field of study, degrees, awards received, and participation in officially recognized activities/sports.

Topics and Units Covered

- **Test 1: Welcome Home**
  - Introduction to Astronomy
    - Unit 1 – Our Planetary Neighborhood
    - Unit 3 – Astronomical Numbers
    - Unit 4 – Scientific Foundations of Astronomy
  - Finding Your Way Around the Sky
    - Unit 5 – The Night Sky
    - Unit 13 – Observing the Sky
  - Earth Patterns
    - Unit 6 – The Year
    - Unit 7 – The Time of Day
    - Unit 8 – Lunar Cycles
    - Unit 9 – Calendars
    - Unit 10 – Geometry of the Moon, Earth, and Sun
    - Unit 11 – Planets: The Wandering Stars
    - Unit 12 – The Beginnings of Modern Astronomy
- **Test 2: Astronomy Physics**
  - Astronomy Mechanics
    - Unit 14 – Astronomical Motion: Inertia, Mass, and Force
    - Unit 15 – Force, Acceleration, and Interaction
    - Unit 16 – The Universal Law of Gravity
    - Unit 17 – Measuring a Body's Mass Using Orbital Motion
    - Unit 18 – Orbital and Escape Velocities
    - Unit 19 – Tides
    - Unit 20 – Conservation Laws
  - Using Light to Observe
    - Unit 21 – The Dual Nature of Light and Matter
    - Unit 22 – The Electromagnetic Spectrum (Extra Credit)
    - Unit 23 – Thermal Radiation (Extra Credit)
    - Unit 24 – Identifying Atoms by Their Spectra
    - Unit 25 – The Doppler Shift (Extra Credit)
    - Unit 28 – Detecting Light – An Overview
    - Unit 29 – Collecting Light
    - Unit 30 – Focusing Light
    - Unit 31 – Telescope Resolution
    - Unit 32 – Earth's Atmosphere and Space Observatories
    - Unit 33 – Amateur Astronomy

- **Test 3: Planetary Systems**
  - The Structure of Planetary Systems
    - Unit 34 – The Structure of the Solar System
    - Unit 35 – The Origin of the Solar System
    - Unit 36 – Other Planetary Systems
  - Earth and Moon
    - Unit 37 – Earth as a Terrestrial Planet
    - Unit 38 – Earth's Atmosphere and Hydrosphere
    - Unit 39 – Our Moon
  - The Other Planets
    - Unit 40 – Mercury
    - Unit 41 – Venus
    - Unit 42 – Mars
    - Unit 43 – Asteroids
    - Unit 44 – Comparative Planetology
    - Unit 45 – Jupiter and Saturn: Gas Giants
    - Unit 46 – Uranus and Neptune: Ice Giants
  - Smaller Solar System Objects
    - Unit 47 – Satellite Systems and Rings
    - Unit 48 – Ice Worlds, Pluto, and Beyond
    - Unit 49 – Comets
    - Units 50 – Impacts on Earth

Tentative Course Schedule:

Timing	Reading/Assignments	Discussion	Test
Week 1	Units 1, 3, 4, 5-9 13	• Describing Hubble Images	• None
Week 2	Units 10-12, 14-20	• Uses of EM Radiation	• Test 1
Week 3	Units 21-25, 28-30	• Choosing a 'Scope	•
Week 4	Units 31-43	• Colonizing the Solar System	• Test 2
Week 5	Units 44-50	• Concerns for Earth	• Test 3, Final Exam