University of North Texas at Dallas

Fall 2025

SYLLABUS

PHYS 1052-0071/0371: Solar System – 3 hours

Department of	Natural Sciences
Instructor Name	Faranak Zarnani, Ph.D.
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Office Hours	Monday and Wednesday 2:00 – 4:00 pm and by appointment
Virtual Office Hours	By appointment
Course Format/Structure	Online
Classroom Location	Online
Class Meeting Days & Times	--
Course Catalog Description	History of astronomy and the physical properties of the earth, moon, planets and minor bodies. Includes laboratory exercises.
Prerequisites	Proficiency in algebra and trigonometry.
Corequisites	None
Required Materials	• McGraw-Hill Connect with eBook for *Pathways to Astronomy*, 6th Edition, by Steven Schneider. ISBN13: 9781260445107 • Stellarium software (Free open-source planetarium for your computer for laboratory work.)
Recommended Reading	None
Recommended Technology	Students need regular access to the internet; a computer or laptop with Stellarium software installed; calculator.
Access to Learning Resources	**UNT Dallas Library:** Phone: (972) 338-1616; Website URL: http://www.untdallas.edu/library **UNT Dallas Bookstore:** Phone: (972) 780-3652; Website URL: http://www.untdallas.edu/bookstore Email: untdallas@bkstr.com

Canvas Resources **Supported Browsers:** • Chrome **Supported Devices:** • iPhone • Android • Chromebook *Note: Tablet users can use the Canvas app* **Screen Readers:** • VoiceOver (Safari) • JAWS (Internet Explorer) • NVDA (Firefox) *Note: There is no screen reader support for Canvas in Chrome*	**Getting Help with Canvas:** **Canvas 24/7 Phone Support for Students: 1-833-668-8634** **Canvas Help Resources:** **Canvas Student Guide - https://community.canvaslms.com/docs/DOC-10701** For additional assistance, contact UNT Dallas Distance Learning: DAL1, Room 157 Email: distancelearning@untdallas.edu **If you are working with Canvas 24/7 Support to resolve a technical issue, please keep me updated on the troubleshooting progress.** **If you have a course-related issue (e.g., course content, assignment trouble, quiz difficulties), please contact me during office hours or by email.** --- **McGraw Hill Technical Support (for Connect): https://mh.my.site.com/CXG/s/ContactUs**

Course Overview

Course Goals/Overview:

This introductory astronomy course provides a brief history of astronomy and gives an overview of the techniques and principles important in astronomy, explores our solar system, and discusses the search for exoplanets and life in the universe.

Learning Objectives/Outcomes:

At the end of this course, the student will gain the following outcomes:

1. Critical thinking – analysis, evaluation, and synthesis of information.
2. Effective communication – development, interpretation, and expression of ideas through written, oral, and graphical means.
3. Quantitative skills – the ability to compute and manipulate quantitative data and to reach meaningful conclusions.
4. Teamwork – the ability to consider different points of view and to work effectively as a team.

Course Outline

This schedule is subject to change by the instructor. Any changes to this schedule will be communicated by the instructor on Canvas. Please check Canvas regularly for announcements.

	Dates	Topics	Assignments Due (Mondays 8:00 AM*)
MODULE 1	Week 1 Aug 25 – 31	Unit 1 Our Planetary Neighborhood Unit 2 Beyond the Solar System Unit 3 Astronomical Numbers Unit 4 Scientific Foundations of Astronomy	
	Week 2 Sep 1 – 7	Unit 5 The Night Sky Unit 6 The Year Unit 7 The Time of Day	Introduction to Connect Assignments * Reading Assignment 1 * Homework 1 *
	Week 3 Sep 8 – 14	Unit 8 Lunar Cycles Unit 9 Calendars Unit 10 Geometry of the Moon, Earth, and Sun	Reading Assignment 2 Homework 2 Introductions Stellarium Installation
MODULE 2	Week 4 Sep 15 – 21	Unit 11 Planets: The Wandering Stars Unit 12 The Beginnings of Modern Astronomy Unit 13 Observing the Sky	Reading Assignment 3 Homework 3 Exam 1 (Module 1) Discussion Topic 1 Lab 1 & 2 & 3
	Week 5 Sep 22 – 28	Unit 14 Astronomical Motion: Inertia, Mass, and Force Unit 15 Force, Acceleration, and Interaction Unit 16 The Universal Law of Gravity	Reading Assignment 4 Homework 4
	Week 6 Sep 29 – Oct 5	Unit 17 Measuring a Body's Mass Using Orbital Motion Unit 18 Orbital and Escape Velocities Unit 20 Conservation Laws	Reading Assignment 5 Homework 5
MODULE 3	Week 7 Oct 6 – 12	Unit 21 The Dual Nature of Light and Matter Unit 22 The Electromagnetic Spectrum Unit 23 Thermal Radiation Unit 24 Identifying Atoms by Their Spectra	Reading Assignment 6 Homework 6 Exam 2 (Module 2) Discussion Topic 2 Lab 4 & 5 & 6
	Week 8 Oct 13 – 19	Unit 25 The Doppler Shift Unit 28 Detecting Light – An Overview (Section 28.1-3) Unit 29 Collecting Light Unit 30 Focusing Light	Reading Assignment 7 Homework 7
	Week 9 Oct 20 – 26	Unit 32 Earth's Atmosphere and Space Observatories Unit 34 The Structure of the Solar System Unit 35 The Origin of the Solar System	Reading Assignment 8 Homework 8

	Dates	Topics	Assignments Due (Mondays 8:00 AM*)
MODULE 4	Week 10 Oct 27 – Nov 2	Unit 51 The Sun, Our Star Unit 52 The Sun's Source of Power Unit 53 Solar Activity	Reading Assignment 9 Homework 9 Exam 3 (Module 3) Discussion Topic 3 Lab 7 & 8 & 9
	Week 11 Nov 3 – 9	Unit 37 Earth as a Terrestrial Planet Unit 38 Earth's Atmosphere and Hydrosphere Unit 39 Our Moon	Reading Assignment 10 Homework 10
	Week 12 Nov 10 – 16	Unit 40 Mercury Unit 41 Venus Unit 42 Mars	Reading Assignment 11 Homework 11
MODULE 5	Week 13 Nov 17 – 23	Unit 43 Asteroids Unit 44 Comparative Planetology Unit 45 Jupiter and Saturn: Gas Giants	Reading Assignment 12 Homework 12 Exam 4 (Module 4) Discussion Topic 4 Lab 10 & 11 & 12
	Week 14 Nov 24 – 30	Unit 46 Uranus and Neptune: Ice Giants Unit 47 Satellite Systems and Rings Unit 48 Ice Worlds, Pluto, and Beyond	Reading Assignment 13 Homework 13
	Week 15 Dec 1 – 7	Unit 49 Comets Unit 50 Impacts on Earth Unit 36 Other Planetary Systems	Reading Assignment 14 Homework 14
	Week 16 Dec 8	Week of Final Exams	Reading Assignment 15 Homework 15 Exam 5 (Module 5) Discussion Topic 5 Lab 13 & 14 & 15 News Discussion Board Math Review & Practice

Note: Reading Assignment 1 includes Units covered in Week 1, etc.
Homework 1 includes Units covered in Week 1, etc.
Exam 1, Discussion Topic 1 correspond to Module 1, etc.

***** Assignments are due Mondays at 8:00 AM except for Labor Day (September 1). Assignments due at the beginning of the 2nd week will be due Tuesday (September 2) at 8:00 AM.

Course Evaluation Methods

This course will utilize the following instruments to determine student grades and proficiency of the learning outcomes for the course.

- **Reading Assignments** – Weekly Reading Assignments on Connect (linked to Canvas) using the SmartBook feature of the course eBook. These assignments are tailored to each student to increase their understanding and mastery of course content. Upon successfully completing each assignment students will receive full credit. Late assignments are not accepted. However, the assignments remain open (recharge mode) and can be completed after the due date, but progress will no longer be recorded. The two lowest grades will be dropped. Reading Assignments are accessible through the lecture Canvas shell (PHYS 1052.0071 - Solar System.)
- **Homework Assignments** – "*Connect Orientation*" and "*Connect Tolerance and Significant Digits Walk-through Assignment*", Weekly Homework assignments on Connect, and "*Math Review and Practice*" (all linked to Canvas). "*Connect Orientation*" and "*Connect Tolerance and Significant Digits Walk-through Assignment*" can be completed until you score 100%. The weekly homework can be attempted three times with a 3% penalty for each subsequent attempt. Hints can be accessed without penalty. Homework is accepted after the due date (except Homework 15 due on Dec. 8) and scores are reduced by 20% for each day late. The two lowest grades of the weekly homework assignments will be dropped. The two introductory Connect assignments will not be dropped. Homework is accessible through the lecture Canvas shell (PHYS 1052.0071 - Solar System.)
- **Laboratory Exercises** – Stellarium Installation and Configuration assignment, and three lab exercises per Module (can be worked on for the three-week duration of each Module) and a Group Exercise. Lab exercises use Stellarium, a free open-source planetarium software. Instructions for downloading Stellarium and the exercise files are accessible through Canvas as an assignment. You will complete the exercises on Connect (linked to Canvas). Lab exercises are accepted after the due date (except Lab 13, 14, 15 due on Dec. 8) and scores are reduced by 20% for each day late. The two lowest lab exercise grades will be dropped. The grade for Stellarium Installation and Configuration, and the Group Exercise will not be dropped. Laboratory information and exercises are posted on the laboratory Canvas shell (PHYS 1052.0371 - Solar System.)
- **Exams** – There are five online exams, one per Module, taken on Connect (linked to Canvas). Exams are available to take over a three-day period ending with the posted due dates in the course calendar. Exams are timed and proctored. Please see Canvas for more details regarding proctoring. No late exams or make-up exams are given. The lowest exam grade will be dropped. Exams are accessible through the lecture Canvas shell (PHYS 1052.0071 - Solar System.)
- **Discussions** – Five discussions, one per Module, are open for the three-week period of each Module. Additionally, there is an Introductions discussion board at the beginning of the semester, and a News Discussion Board due at the end of the semester. Requirements for each discussion are listed on the corresponding page on Canvas. The point of having these discussions is to have a place for interaction and collaboration between you and your classmates, and to have a place to ask questions and get feedback. Late discussion posts by a week are accepted without penalty, except for Discussion Topic 5 and News Discussion Board (both due on Dec. 8.) The lowest discussion grade - except for Introductions and News Discussion Board - will be dropped. Discussions are posted on the lecture Canvas shell (PHYS 1052.0071 - Solar System.)

Grading Matrix:

Instrument	Value (points or percentages)	Total
Reading Assignments	13 Reading Assignments (Each 1.15%)	15%
Homework Assignments	16 Homework Assignments (Each 1.25%)	20%
Laboratory Exercises	13 Exercises (Each 1%) and Group Exercise (7%)	20%
Exams	4 Exams (Each 7.5%)	30%
Discussions	5 Discussions (Each 3%)	15%
Total		100%

Grade Determination:

A = 90% or better
B = 80 – 89 %
C = 70 – 79 %
D = 60 – 69 %
F = less than 60%

Need tutoring services or just some help with a particular assignment? For tutoring that empowers students to achieve success, schedule an appointment with the Learning Commons today at https://www.untdallas.edu/learning/schedule-appointment/.

Course-Specific Policies

Attendance and Participation Policy:

The University attendance policy is in effect for this course. Please refer to Policy 7.005 Student Attendance at https://untsystem.policytech.com/dotNet/documents/?docid=1347&public=true.

Regular participation in this course is required and monitored on Canvas.

Assignment Policy:

See Course Evaluation Methods section on Page 5 for details. Also, refer to assignment policies published for each assignment on Canvas and Connect.

Exam Policy:

Exams should be taken as scheduled. No makeup examinations will be allowed except for documented emergencies (See Policy 7.005 Student Attendance at https://www.untdallas.edu/hr/upol). In the event students have a documented excuse they should contact the instructor ahead of time or no later than ten days after the absence to schedule a makeup exam.

Details of exams are available on Canvas.

Other Course Specific Policies:

- PHYS 1052 is a fully online course and does not have any required on-campus requirements.
- Students are required to have access to the internet and a computer/laptop that has Stellarium software installed on it. If your internet connection is not reliable, you must complete work on campus using the Wi-Fi available to all students. If your personal computer has issues or fails, it is your responsibility to find a replacement. Loaner laptops are available to students from the University. Also, the University has general access computer labs that students can work in. Stellarium is available on the computers in the General Access Computer Lab on the 2nd floor of the Student Success Center (SC 2042). I have worked with IT to have Stellarium available on these campus computers, in case any of you have problems with your own computers or if you'd like to work in the computer labs on campus.
- Emails received during a business day are replied to the same or next day. Emails sent during the evening, on weekends, and on Holidays are responded to the next business day.
- Grades for Reading Assignments, Homework, and Laboratory exercises are available upon completion. Grades for exams are available an hour after the due date. Discussion grades are available within a week of the due date.

University Policies and Procedures

Students with Disabilities (ADA Compliance):

The University of North Texas at Dallas makes reasonable academic accommodations for students with disabilities. Students seeking accommodation must first register with the Disabilities Services Office (DSO) to verify their eligibility. If a disability is verified, the DSO will provide you with an accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request accommodation at any time; however, DSO notices of accommodation should be provided as early as possible in the semester to avoid any delays in implementation. Note that a student must obtain a new letter of accommodation for every semester and must meet/communicate with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information see the Disability Services Office website at http://www.untdallas.edu/disability. You may also contact them by phone at 972-338-1777; by email at UNTDdisability@untdallas.edu on the first floor of the Student Center.

Canvas Instructure Accessibility Statement:
University of North Texas at Dallas is committed to ensuring that online and hybrid courses are usable by all students and faculty including those with disabilities. If you encounter any difficulties with technologies, please contact our ITSS Department. To better assist them, you would want to have the operating system, web browser and information on any assistive technology being used. The Canvas Instructure Accessibility Statement is provided at https://www.canvaslms.com/accessibility.

NOTE: Additional instructional technology tools, such as Turnitin, Respondus, Panopto, and publisher cartridge content (i.e. MyLab, Pearson, etc.) may NOT be fully ADA compliant. Please contact our Disability Office should you require additional assistance utilizing any of these tools.

Academic Integrity:

Academic integrity is a hallmark of higher education. You are expected to abide by the University's code of Academic Integrity policy. Any person suspected of academic dishonesty (i.e., cheating or plagiarism) will be handled in accordance with the University's policies and procedures. Refer to the UNT Dallas Academic Integrity Policy in the appropriate Catalog at http://dallascatalog.unt.edu.

Academic dishonesty includes, but is not limited to, cheating, plagiarizing, fabrication of information or citations, facilitating acts of dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students.

AI Policy: UNT Dallas acknowledges the evolving capabilities of Artificial Intelligence (AI) technologies and their various effects on student writing and content creation. The Department of Natural Sciences takes a use-with-permission approach to AI. Students are only permitted to use AI technology in the creation of any course content if permitted by the course instructor. If the use of AI technology is detected, without specific instructor permission, the student will be deemed in violation of the plagiarism policy.

Web-based Plagiarism Detection: *Please* be aware in some courses, students may be required to submit written assignments to Turnitin, a web-based plagiarism detection service, or another method. If submitting to Turnitin, please remove your title page and other personal information.

Classroom Etiquette:

Students are encouraged to contribute their perspectives and insights to class discussions. However, offensive & inappropriate language (swearing) and remarks offensive to others of nationalities, ethnic groups, sexual preferences, religious groups, genders, or other ascribed statuses will not be tolerated. Disruptions which violate the Code of Student's Rights, Responsibilities, and Conduct will be referred to the Dean of Students as the instructor deems appropriate (UNTD Policy 7.001 found at

https://untsystem.policytech.com/dotNet/documents/?docid=1278&public=true).

Classroom Disruption:

Students are expected to always engage with the instructor and other students in this class in a respectful and civil manner to promote a classroom environment that is conducive to teaching and learning. Students who engage in disruptive behavior will be directed to leave the classroom. A student who is directed to leave class due to disruptive behavior is not permitted to return to class until the student meets with a representative from the Dean of Students Office. It is the student's responsibility to meet with the Dean of Students before class meets again and to provide the instructor confirmation of the meeting. A student who is directed to leave class will be assigned an unexcused absence for that class period and any other classes the student misses because of not meeting with the Dean of Students. The student is responsible for material missed during all absences, and the instructor is not responsible for providing missed material. In addition, the student will be assigned a failing grade for assignments, quizzes or examinations missed and will not be allowed to make up the work.

The Code of Student's Rights, Responsibilities, and Conduct (UNTD Policy 7.001 found at https://untsystem.policytech.com/dotNet/documents/?docid=1278&public=true) describes disruption as the obstructing or interfering with university functions or activity, including any behavior that interferes with students, faculty, or staff access to an appropriate educational environment. Examples of disruptive behavior that may result in a student being directed to leave the classroom include but are not limited to: failure to comply with reasonable directive of University officials, action or combination of actions that unreasonably interfere with, hinder, obstruct, or prevents the right of others to freely participate, threatening, assaulting, or causing harm to oneself or to another, uttering any words or performing any acts that cause physical injury, or threaten any individual, or interfere with any individual's rightful actions, and harassment. You are encouraged to read the Code of Student's Rights, Responsibilities, and Conduct for more information related to behaviors that could be considered disruptive.

Course Evaluations:

Student evaluations of teaching effectiveness are a requirement for all organized classes at UNT Dallas. This short survey will be made available to you at the end of the semester via your campus email, providing you a chance to comment on how this class is taught. I (as the instructor) will not have access to the results of the evaluations until after final grades have been posted. I am very interested in the feedback I get from students, as I work to continually improve my teaching. I consider students' evaluations to be an important part of your participation in this class.

Sexual Harassment, Sexual Misconduct, Intimate Partner Violence and Stalking
UNT Dallas is committed to creating a safe learning environment for all members of our community, free from gender and sex-based discrimination, including sexual harassment, domestic and dating violence, sexual assault, and stalking, in accordance with Title IX, Texas laws and University Policies. Please note that all employees are mandated reporters and must report all instances of sexual misconduct, dating violence, sexual assault, domestic violence and stalking to the Title IX Coordinator. If you or someone you know has experienced any form of sex or gender-based discrimination or violence and wish to speak to the Title IX Coordinator, you can email them at titleix@untdallas.edu or file a report here.

Pregnancy, Pregnancy Related Conditions and Parenting Modifications Under Title IX
UNT Dallas is committed to compliance with Title IX, and to supporting the academic success of pregnant and parenting students and students with pregnancy related conditions. If you are a pregnant, have pregnant related conditions or a parenting student (child under one-year needs documented medical care) who wishes to request reasonable related modifications from the University under Title IX, please email the Title IX Coordinator at titleix@untdallas.edu The Title IX Coordinator will work with your professors and academic unit to provide reasonable modifications needed to be supportive of your education while pregnant or as a parent under Title IX.

Bad Weather Policy:

Campus facilities will close, and operations will be suspended when adverse weather and/or safety hazards exist on the UNTD campus or if travel to the campus is deemed dangerous as the result of ice, sleet or snow. In the event of a campus closure, the Marketing and Communication Department will report closure information to all appropriate major media by 7 a.m. That department will also update the UNTD website, Facebook and Twitter with closing information as soon as it is possible. For more information, please refer to http://www.untdallas.edu/police/resources/notifications.

Inclement Weather and Online Classes:

Online classes may or may not be affected by campus closures due to inclement weather. Unless otherwise notified by your instructor via e-mail, online messaging, or online announcement, students should assume that assignments are due as scheduled.

Technology Assistance: To successfully access the materials in Canvas, UNT Dallas advises that your computer be equipped with the minimum system requirements listed on the first page of the syllabus.

If you have trouble accessing or using components of the course, try using Google Chrome browser. If you still experience technical difficulties, first, notify your instructor.

If the problem is still not resolved, call Distance Learning at the phone number listed on the first page of the syllabus. Also, no matter what browser you use, always enable pop-ups.

For more information see:

- UNT Dallas Canvas Technical Requirements: https://community.canvaslms.com/docs/DOC-10721
- Canvas Instructure Support & Unsupported Operating Systems: https://community.canvaslms.com/docs/DOC-10720