

Pittsburg State University
Department of Physics
PHYS 175-01 Descriptive Astronomy
Spring 2019
MWF, 12:00-12:50, 102 YH

Instructor: Kyla Scarborough
Text: *Discovering the Universe*, Comins & Kaufmann, 10th edition
w/Launch Pad access card ISBN: 9781464197406
Launch Pad: <http://www.macmillanhighered.com/launchpad/dtu10e/9901949>
e-mail: kscarborough@pittstate.edu or k.scarborough@gmail.com

Office: 304 Yates Hall
Phone: 620-235-4292
Office Hours: See below

No Canvas messages

Course Description:

PHYS 175. Descriptive Astronomy. 3 hours. The solar system, stellar astronomy, the galaxy, cosmology.

Prerequisite(s):

Corequisite: PHYS 176 Astronomy Laboratory

This on campus face-to-face course will provide a survey of the major areas of modern astronomy including solar, planetary, stellar, and galactic astronomy as well as cosmology. No background beyond high school algebra and general science is necessary. The course lectures may be supplemented by trips to the planetarium and videos.

This course is also intended for partial fulfillment of the Pitt State Pathway Curriculum.

Pitt State Pathway Mission Statement: The *Pitt State Pathway* curriculum serves as the heart of the university education by fostering interdisciplinary competencies that typify the educated person. It is designed to facilitate the development of key proficiencies including communication and information literacy. The *Pitt State Pathway* curriculum provides a transformational experience that challenges students to think creatively and critically, and to immerse themselves in the productive examination of humans in their global setting. By encouraging the development of skills that promote life-long learning, the *Pitt State Pathway* fosters a sense of personal responsibility, an appreciation of diversity, and an understanding of interconnectedness in our truly global society.

Essential Study to be covered in this course: Natural World within a Global Context

Biological, physical, and chemical systems form the context for life. Students need to understand how these systems work, how these change naturally, and how these can change as a result of human activities. The implications of these changes are essential for long-term decision-making. In this course we will:

Analyze physical and chemical systems;

Evaluate the implications of changes that result from interactions between natural and human systems.

Companion Element to be covered in this course: Scientific Inquiry

The scientific method is the systematic approach to understanding the world around us. Through experimentation and hypothesis testing, students will apply analytical skills and appropriate methods of scientific inquiry (i.e. qualitative and quantitative) to solve a variety of research questions. In this course we will:

Compose appropriate research questions and hypothesis, drawing from experts, reliable sources, or previously collected data.

Collect, synthesize, and analyze data from multiple sources;

Draw logical conclusions, assessing for gaps and weaknesses, and addressing potential consequences and implications

Communicate results using appropriate delivery methods or formats.

Course Objectives and learning outcomes:

Natural World within the Global Context: Student *Explains* biological, physical and/or chemical processes and human activities that alter them. (Milestone I)

Scientific Inquiry: Student *Applies* the scientific methods to a problem. (Milestone I)

This course uses the Kansa Board of Regents Core Outcomes (available at

https://www.kansasregents.org/resources/PDF/Academic_Affairs/TAAC/FY_2015/Descriptive_Astronomy_Lecture_08-2018.pdf) for Descriptive Astronomy.

Students should be able to:

- 1.Explain the scientific method
- 2.Interpret astronomical observations, demonstrate critical thinking and basic problem solving
- 3.Explain astronomical phenomena in terms of appropriate scientific models
- 4.Explain and critique science as presented in the media

Method(s) of Assessment:

To assess the chosen level of student learning for Natural World within a Global Context (Milestone I), students will complete homework, quizzes, and exams to describe and explain biological, physical, and/or chemical processes and how human activities alter them. To assess the chosen level of student learning for Scientific Inquiry (Milestone I), students will complete homework, quizzes, and exams to identify problems by using scientific methods and apply scientific methods to those problems. The final exam will be comprehensive.

Grades will be calculated from the scores of 3 unit tests, the final exam, online quizzes, and homework assignments. Some material over which you will be tested might not be discussed in class, but will be based upon material in the textbook, from the videos that we will watch, from homework assignments, and from the planetarium sessions.

Homework: There will be homework to be turned at the beginning of some class periods. **Homework submitted later than ten minutes after class begins on the due date will be considered late and will not be accepted.** If you are ill on a due date, then please submit your homework assignment via e-mail by the due time. **Illegible homework will not be graded. Homework problems and exams must be completed in pencil. Numerical problems must include the equation(s) used to solve the problems, all steps/work toward obtaining solutions, proper units for all properties in the equations, and obvious solutions (circled or boxed in). Homework solutions must not be identical to those of another student or to the text.**

Quizzes submitted after the due time on the due date will be considered late and will not be accepted. There are no make-up quizzes.

The grading system for this course is as follows:

Component	Weight	Percentage	Grade
Tests (4)	80%	90 – 100 %	A
Online Quizzes & Homework	20%	78 – 89	B
		66 – 77	C
		54 – 65	D
		below 54	F

Attendance is mandatory and checks will be taken on a random basis. Three or more unexcused absences will result in your dismissal from the course.

Students who know that they are going to be out of town on unit exam dates should make arrangements to take unit exams **prior** to those dates. **Excused missed unit exams must be made up within six calendar days.**

Do not make travel plans that will cause you to miss the final exam. You must take the final exam on the day, and at the time, scheduled by the Registrar. As it states in the University Catalog, “Final examinations will be given according to the schedule of examinations distributed by the Registrar each semester.” The only exception is “for students who have three or more final exams **officially scheduled for a single day.”**

You will need a calculator for this class. No cell phone calculators will be allowed. No devices other than a calculator, a pencil, and an eraser will be allowed during exams. Calculators will not be allowed during some exams. I will provide the Scantrons for all exams.

Laptops, tablets, and cell phones may not be used during class.

Read your text!

Below is the relative order of topic discussions.

Astronomy Basics

Chapter 1	Constellations, Earthly motions, Lunar cycles, Eclipses
Chapter 2	History of Astronomy, Kepler's Laws, Newton's Laws, Gravitation.
Chapters 3 & 4	Visible Light, Telescopes, other Electromagnetic Radiation
Exam 1 (Chapters 1 - 4)	

The Solar System

Chapter 5	Formation of the Solar System
Chapter 6	Earth and Moon
Chapter 7	Terrestrial Planets
Chapter 8	Outer Planets
Chapter 9	Solar System Vagabonds: Comets, Asteroids, Meteors
Exam 2 (Chapters 5 - 9)	

The Stars

Chapter 10	Our Sun
Chapter 11	Characterizing Stars
Chapter 12	Stellar Evolution
Chapter 13	Deaths of Stars
Chapter 14	Black Holes
Exam 3 (Chapters 10 – 14)	

The Universe

Chapter 15	Milky Way Galaxy
Chapter 16	Galaxies
Chapter 17	Quasars, Active Galaxies, other Ultrahigh Energy Sources
Chapter 18	Cosmology
Chapter 19	Searching for Extraterrestrial Life
Friday May 10th, 12:00-1:50	Final Exam (Chapters 15-19), plus some comprehensive material.

Office Hours

Tentative Office Schedule~Kyla Scarborough Spring 2019

	Monday	Tuesday	Wednesday	Thursday	Friday
9:00-9:50	Lunch	Lunch	Lunch	Lunch	Lunch
10:00-10:50	Physical Science	Astro Lab Set-up	Physical Science	Office Hours	Physical Science
11:00-11:50	Office Hours	Office Hours	Office Hours	Office Hours	Office Hours
12:00-12:50	Descriptive Astronomy	PS Lab	Descriptive Astronomy	PS Lab	Descriptive Astronomy
1:00-1:50	Astro Lab Set-up	PS Lab		PS Lab	Faculty Meeting
2:00-2:50	Astro. Lab	Astro. Lab	Astro. Lab	Astro. Lab	PS Lab Set-up
3:00-3:50	Astro. Lab	Astro. Lab	Astro. Lab	Astro. Lab	PS Lab Set-up

ACADEMIC INTEGRITY POLICY

Academic dishonesty by a student is defined as unethical activity associated with course work or grades. It includes, but is not limited to: (a) Giving or receiving unauthorized aid on examinations. (b) Giving or receiving unauthorized aid in the preparation of notebooks, themes, reports, papers or any other assignments. (c) Submitting the same work for more than one course without the instructor's permission, and, (d) Plagiarism. Plagiarism is defined as using ideas or writings of another and claiming them as one's own. Copying any material directly (be it the work of other students, professors, or colleagues) or copying information from print or electronic sources (including the internet) without explicitly acknowledging the true source of the material is plagiarism. Plagiarism also includes paraphrasing other individuals' ideas or concepts without acknowledging their work, or contribution. To avoid charges of plagiarism, students should follow the citation directions provided by the instructor and/or department in which the class is offered. The above guidelines do not preclude group study for exams, sharing of sources for research projects, or students discussing their ideas with other members of the class unless explicitly prohibited by the instructor. Since the violation of academic honesty strikes at the heart of the education process, it

is subject to the severest sanctions, up to and including receiving an “F” or “XF” (an “XF” indicates that “F” was the result of academic dishonest) for the entire class and dismissal from the university.

Learning Curve Quizzes: <http://www.macmillanhighered.com/launchpad/dtu10e/9901949>

▶ Chapter 1. Discovering the Night Sky	Jan 28 To Do
▶ Chapter 2. Gravitation and the Motion of the Planets	Feb 01 To Do
▶ Chapter 3. Light and Telescopes	Feb 06 To Do
▶ Chapter 4. Atomic Physics and Spectra	Feb 11 To Do
▶ Chapter 5. Formation of the Solar System and Other Planetary Systems	Feb 15 To Do
▶ Chapter 6. Earth and the Moon	Feb 20 To Do
▶ Chapter 7. The Other Terrestrial Planets	Feb 25 To Do
▶ Chapter 8. The Outer Planets	Mar 01 To Do
▶ Chapter 9. Vagabonds of the Solar System	Mar 06 To Do
▶ Chapter 10. The Sun: Our Extraordinary Ordinary Star	Mar 18 To Do
▶ Chapter 11. Characterizing Stars	Mar 22 To Do
▶ Chapter 12. The Lives of Stars from Birth Through Middle Age	Mar 25 To Do
▶ Chapter 13. The Deaths of Stars	Mar 29 To Do
▶ Chapter 14. Black Holes: Matters of Gravity	Apr 03 To Do
▶ Chapter 15. The Milky Way Galaxy	Apr 08 To Do
▶ Chapter 16. Galaxies	Apr 12 To Do
▶ Chapter 17. Quasars and Other Active Galaxies	Apr 17 To Do
▶ Chapter 18. Cosmology	Apr 22 To Do
▶ Chapter 19. Astrobiology	Apr 26 To Do

Pittsburg State University

Syllabus Supplement – Spring 2019

IMPORTANT DATES

1/14	Classes begin
1/21	Martin Luther King, Jr., Holiday
1/22	Tuition due
1/22	Last day for full tuition refund if withdrawing
1/22	Last day to add classes w/o permission of instructor
1/28	Final day to drop w/o transcript notation
2/19	Last day for half refund if withdrawing
3/11	Mid-term D and F grades available after 5:00 pm
3/11 to 3/15	Spring Break
4/5	Final day to drop a course unless withdrawing from all classes
4/25	Last day to withdraw from all classes
5/6 to 5/10	Finals week
5/10	Deadline to remove/extend IN grades for 2018 WF
5/13	Grades due from faculty

DROPPING A COURSE OR WITHDRAWING FOR THE SEMESTER

Beginning the 12th week through the 16th week of full-term courses, individual courses cannot be dropped.

A student who does not officially withdraw from a course or from the university will be assigned an "F" grade in the course or courses concerned. These "F" grades will be included in the computation of the GPA.

The dates for dropping courses that run fewer than sixteen weeks are proportionate to the length of the course (e.g. the last day to drop an eight week course would be the end of the sixth week). Consult your instructor or the Registrar's Office for questions about a specific course. For students who wish to withdraw from all classes after the 12th week of the term, the instructor must assign a grade of W or F.

To drop a course after the 5th day of class or for clarification on drop/add policies, contact the Registrar's Office, 103 Russ Hall, 620-235-4200 or registrar@pittstate.edu

IMPORTANT INFORMATION FOR STUDENTS RECEIVING FINANCIAL ASSISTANCE

Student aid is available each semester for students who qualify. Please contact the Office of Student Financial Assistance for any questions at 620-235-4240 or by email at finaid@pittstate.edu.

The Office of Student Financial Assistance is required to recalculate financial aid eligibility for students who withdraw, stop attending or are dismissed prior to completing 60 percent of a semester. This calculation applies to students receiving the following Title IV funds including:

Federal Pell Grant	Federal Parent PLUS Loan
Federal Direct Loan	Federal TEACH Grant for education majors

Federal financial aid is returned to the federal government based on the percent of unearned aid disbursed toward institutional charges for tuition, fees, and on-campus room and board. Students may be required to repay a portion of the aid funds received.

When aid is returned, the student may owe a balance to the University and/or Department of Education Title IV Programs. Please contact Student Financial Aid if you are considering dropping hours during the semester, to see how you will be affected.

IMPORTANT INFORMATION FOR INTERNATIONAL STUDENTS

International students studying on F or J visas must be in proper immigration status and are required to always be in full time enrollment (minimum 12 hours undergraduate or 9 hours graduate). For additional information <https://www.pittstate.edu/international/immigration.html>

CLASS ATTENDANCE POLICY

Students at Pittsburg State University are expected to attend class regularly and participate fully in class activities. It is the responsibility of the course instructor to set the attendance policy for his or her courses and communicate that policy to students in the course syllabus. The syllabus should address whether and how attendance affects the course grade, the issue of excused absences, and whether students will be dropped for nonattendance or excessive absence.

Students who have not attended or who have been excessively absent from a class may be dropped from the course by the instructor. In such instances, this policy must be clearly stated in the syllabus and uniformly enforced.

Students may be dropped at anytime in the semester based on course policy. Instructor drops after the beginning of the 12th week of a full semester class will result in a grade of "F" for the course.

Regardless of the faculty prerogative to drop a student for nonattendance or excessive absence, the ultimate responsibility for monitoring and maintaining up-to-date course enrollment rests with the student.

SEVERE WEATHER INFORMATION

If forecasts or weather conditions suggest that travel in the area could become hazardous a policy is in place to determine if classes or other University activities will be cancelled. This policy and notification process can be found at <https://www.pittstate.edu/police/safety.htm#undefined5>. Notification methods typically include the PSU website, local news media, and text messaging for those who subscribe to this service.

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It includes, but is not limited to:

- Giving or receiving unauthorized aid on examinations.
- Giving or receiving unauthorized aid in the preparation of notebooks, themes, reports, papers or any other assignments.
- Submitting the same work for more than one course without the instructor's permission, and,
- Plagiarism. Plagiarism is defined as using ideas or writings of another and claiming them as one's own. Copying any material directly (be it the work of other students, professors, or colleagues) or copying information from print or electronic sources (including the internet) without explicitly acknowledging the true source of the material is plagiarism. Plagiarism also includes paraphrasing other individuals' ideas or concepts without acknowledging their work, or contribution. To avoid charges of plagiarism, students should follow the citation directions provided by the instructor and/or department in which the class is offered.

The above guidelines do not preclude group study for exams, sharing of sources for research projects, or students discussing their ideas with other members of the class unless explicitly prohibited by the instructor.

Since the violation of academic honesty strikes at the heart of the education process, it is subject to the severest sanctions, up to and including receiving an "F" or "XF" (an "XF" indicates that "F" was the result of academic dishonesty) for the entire class and dismissal from the university. For a full copy of this policy see: http://catalog.pittstate.edu/contentm/blueprints/blueprint_display.php?bp_list_id=162&blueprint_id=124&sid=1&menu_id=7980

MID-TERM GRADES

After the eighth week of the fall and spring semester, mid-semester "D" and "F" grades submitted by faculty are reported by the Office of the Registrar to the dean of the college in which you are majoring. All "D" and "F" grades submitted by faculty will be reported by the Registrar to you and your academic advisor through the on-line student information system (GUS). No mid-semester report of "D" and "F" grades are distributed for the summer session.

INCOMPLETE GRADES

Incomplete grade may be assigned in rare instances when a student is unable to complete a course due to circumstances beyond his/her control. You must have completed a majority of the coursework to be eligible for this consideration. Unless granted an extension by the instructor, students have only one semester to complete the work.

If you feel like you qualify for an Incomplete grade, you should visit with your instructor and not assume an IN grade will be assigned automatically. Incomplete grades will affect your Financial Aid completion rate. Please check with the Student Financial Assistance office for details.

CREDIT FOR PRIOR LEARNING

Pittsburg State University accepts credit for AP, CLEP and IB exams. Learn more at <https://www.pittstate.edu/registrar/credit-for-prior-learning.html>. Additional information may also be found in the catalog under Academic Regulations.

FINAL GRADE REPORTS

Final grades are reported to the Registrar's Office at the conclusion of the course. You may access your grades in GUS immediately upon grade posting.

GRADE APPEALS

All course grades are to be awarded upon criteria communicated to the student at the beginning of the semester. Additional work after a final grade submitted cannot be used to change the grade.

If you believe that an error has been made in the assignment or recording of a grade, you should first confer with the instructor. If such a conference does not resolve the problem, a grade appeal form must be submitted to the chair of the academic department that offers the course in question. This form must be submitted no later than six weeks after the beginning of fall or spring semester immediately following the semester in which the grade being appealed was received.

A grade appeal form is available online on the Registrar's Office and Graduate School's webpage under forms.

DEAD WEEK POLICY

Tests or major assignments will be presented during the week prior to examination week, unless identified in the course syllabus presented at the start of the semester.

FINAL EXAM SCHEDULE

All examinations will be given according to the schedule of examinations listed at <https://registrar.pittstate.edu/final-exam-schedule.html>

FINAL EXAM OVERLOAD POLICY

If you have three or more final exams officially scheduled for a single day, you are entitled to arrange with the faculty member instructing the highest numbered course (the 3 digit number following the department code) a different day for the exam. If two courses have the same number, the course with the lower enrollment would be rescheduled.

Students requesting accommodation should submit their request on the form found at <https://registrar.pittstate.edu/forms.html> along with a copy of the class schedule, at least two weeks prior to the beginning of final exam week.

The faculty member has until the Monday of pre-finals week to agree to a mutually convenient time for administration of the final exam. If the request cannot be resolved between student and faculty member, you may request to see the Office of the Provost, 220 Russ Hall, no later than the Friday of dead week.

WEAPONS AND CONCEALED CARRY POLICY

Weapons Policy website
<http://www.pittstate.edu/police/policies.html#undefined1> and Concealed Weapons Policy
<http://www.pittstate.edu/police/policies.html#undefined2>

A handgun must be in the person's custody and control at all times with the mechanism engaged. Handguns must be carried securely in a reliable carrier (backpack, purse, handbag, or other personal carrier) designed and intended for the carrying of an individual's personal items. The reliable carrier must at all times remain within the exclusive and uninterrupted control of the individual. This includes wearing the carrier with more straps consistent with the carrier's design, carrying or holding the carrier, or setting the carrier next to or within the immediate reach of the individual.

UNIVERSITY SPONSORED STUDENT ACTIVITY POLICY

See University Sponsored Student Activity Policy at <http://www.pittstate.edu/faculty-staff/files/documents/faculty-policy/documents/university-sponsored-activity-policy.pdf>
Contact SGA Academic Affairs Director, Room 111 Overman Student Center, Telephone: 620.235.4810 E-mail: sga_aa@pittstate.edu

WHERE TO GO FOR ASSISTANCE

Pittsburg State administration, faculty, and staff are here to assist you in your academic success. If you have questions or concerns that affect your academic success, it is important that we hear from you.

Instructor

Faculty members usually include their office hours and contact information in the class syllabus. If not, set a time to meet with your instructor by speaking with him/her prior to or immediately following your session or check with the departmental office for instructor availability.

Writing Assistance

The Writing Center offers free writing consultations for students at any stage of the writing process for any writing project. Writing Center consultants are experienced writers who are committed to helping you achieve your writing goals.

Shelissa Jorgenson Borchert, Director and Dr. Janet Zepemick, Assistant Director, Writing Center
Phone: 620-235-4694 http://www.pittstate.edu/office/writing_center/

Library

Library Services, whether in the Leonard H. Axe Library or the Kansas Technology Center Library, is committed to providing innovative and learner-centered environments that will help students be successful, support the research and information needs of our campus and community library users, and enhance the University experience. Library Services offers one-on-one research assistance, print collections, online reference services, remote access to our databases, e-books and e-journals, digital archives, research guides, scanning, printing, a computer lab, and instruction programs to support the curriculum. Axe Library is also home to the Student Success Center, the Writing Center, Honors College, the Women's and Gender Resource Center, and food and beverage services. More information is available at our website: <https://axe.pittstate.edu/index.html> or call 620-235-4879 or 620-235-4880.

Financial Assistance:

- Need some help with how to make the payments? See Student Financial Assistance. <https://www.pittstate.edu/financial-aid/index.html>
- Don't forget to check with us before you make changes to your schedule to avoid future semester ineligibility.

Student Financial Assistance at finaid@pittstate.edu or 620-235-4240.

Student Success Programs

Support is available to all students in Student Success Programs. Academic Success Workshops are provided throughout the semester to allow student to enhance their academic skills. Topics include note-taking strategies, test preparation, time management, among many other options. Tutoring for select general education courses is available. One-on-one academic success coaching can be scheduled to develop study plans and learn new strategies. Student-led study group support is also available when requested.

Heather Eckstein

Student Success Programs, 113 Axe

Telephone: 620-235-6578 Email: heckstein@pittstate.edu

<http://www.pittstate.edu/office/student-success-programs/>

Ashley Wadell

Student Success Programs, 113 Axe

Telephone: 620-235-4951 Email: awadell@pittstate.edu

<http://www.pittstate.edu/office/student-success-programs/>

Tutoring

Tutoring programs related to general education classes are available. Whether you are studying for a test, writing a paper or preparing a presentation, tutors can help you sharpen your skills and increase your knowledge. If you are struggling with a class, then a tutor can help you get back on track. Use tutoring to get better grades!

<https://www.pittstate.edu/office/student-success-programs/tutoring.html>

Computer/Technology Assistance

Gorilla Geeks Help Desk is responsible for assisting students with various technology needs. Services available include help with GUS and GUS Passwords, PSU email, assistance with campus system problems and support of the campus wireless network.

In addition, we help with technology needs that are essential for academic success. Services include assistance with educational software packages used on campus including Microsoft OS, Office applications, basic Canvas support and other campus applications; help with computer hardware or software problems; wireless connectivity; and configuring new computers.

Gorilla Geeks Help Desk

Telephone: 620-235-4600 E-mail: Geeks@pittstate.edu

<https://www.pittstate.edu/it/index.html>

Services for Students with Learning and Physical Disabilities

Kerri Hanson, Coordinator, Center for Student Accommodations
213 Russ Hall, Telephone: 620-235-6584

<https://www.pittstate.edu/office/center-for-student-accommodations/index.html>

Student Health Center

Telephone: 620-235-4452 <https://pittstate.edu/office/health-services/index.html>

University Counseling Services

Telephone: 620-235-4452 <https://www.pittstate.edu/office/university-counseling/index.html>

Career Services

Telephone: 620-235-4140 Email: car@pittstate.edu
<https://careers.pittstate.edu/>

Sexual Assault and Relationship Violence

Pittsburg State University prohibits all forms of sexual misconduct and relationship violence to include rape, acquaintance rape, domestic violence, dating violence, sexual assault and stalking.

Reporting Incidents of Sexual Misconduct or Relationship Violence:

<https://studentlife.pittstate.edu/get-help/sexual-misconduct.html#undefined2>

Resources for Victims of Sexual Misconduct or Relationship Violence:

<https://studentlife.pittstate.edu/get-help/sexual-misconduct.html#undefined3>

Title IX

<https://www.pittstate.edu/office/institutional-equity/title-ix.html>

Notice of Nondiscrimination

Pittsburg State University prohibits discrimination on the basis of race, color, religion, sex, national origin, sexual orientation, age, marital or parental status, ancestry, genetic information, gender identity, gender expression, military or veteran status, or disabilities. The following person has been designated to address inquiries regarding the nondiscrimination policies: Director of Institutional Equity/Title IX Coordinator, 218 Russ Hall, 1701 S. Broadway, Pittsburg, KS 66762-7528, 620-235-4189, equity@pittstate.edu.