

## Parkland College

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Astronomy Courses

Natural Sciences Courses

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2015

# Astronomy 101-003 The Solar System Spring 2015

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**Instructor:** Erik Johnson**Email:** [ejohnson@parkland.edu](mailto:ejohnson@parkland.edu)**Phone:** 217-353-2096**Office:** L212**Observing hotline:** 217-373-3782 ext. 6407#**Observing texts:** 815-683-6111**Student contact hours:** to be determined, please take the survey!**Course websites:** [cobra.parkland.edu](http://cobra.parkland.edu) (assignments, announcements, quizzes, email)  
[natsci.parkland.edu/ast/101](http://natsci.parkland.edu/ast/101) (backup in case Cobra isn't working)  
[bcs.whfreeman.com/deu5e/](http://bcs.whfreeman.com/deu5e/) (book companion site; contains animations, flashcards, practice quizzes)**Textbook:** *Discovering the Essential Universe* by Neil Comins, Sixth Edition (Fifth Edition is also acceptable)  
The textbook is available for purchase or rental in the bookstore, and the ebook is available for a 180-day rental at the bookstore or at [ebooks.bfwpub.com/deu5e.php](http://ebooks.bfwpub.com/deu5e.php)**Clickers:** We will use iClickers every day, and 10% of your overall grade will be based on using them. They may be used for several courses at Parkland and at other institutions. You may use the iClicker GO app as well.**Lab packet:** We've printed all the lab procedures and you can buy them at the bookstore. They are the cheapest way to print the procedures. Check the lab schedule and bring the appropriate procedure for each lab.**Software:** You will frequently use the free Stellarium planetarium software during this course. You must complete the tutorial by the end of the first lab. Stellarium is available at [stellarium.org](http://stellarium.org).**Class room, days, and time:** L146; Mon, Wed, Fri; 2:00-2:50**Lab room, day, and time:** L146; Tue; 2:00-3:50**Final exam:** May 12 (Tue); 2:00-4:00**Disabilities:** If you believe you have a disability for which you may need an academic accommodation (e.g. an alternate testing environment, use of assistive technology or other classroom assistance), please contact: Cathy Robinson, Room U260, 217-353-2082, [crobinson@parkland.edu](mailto:crobinson@parkland.edu).**Courtesy:** Do not bring food or drinks to the planetarium, and don't turn on any lights when the dome is dark. Please set all cell phones to silent mode or off while you are in class. If you are concerned about possible emergencies, consider having people contact Public Safety (217-351-2369) on your behalf.**Census date rosters and midterm:** At the end of the second week of class, I am required to assess your attendance. If you have not attended to that point, you will be dropped with no refund of tuition and fees. After this census date, you should not plan on an instructor withdrawal if you want to withdraw from the course. You are ultimately responsible for your own withdrawal by the withdrawal date. Non-attendance after the census date will result in a failing grade if you don't withdraw yourself.**Veterans:** I welcome student veterans of military service to join Student Veterans at Parkland (SVAP), a student group that meets Wednesdays at 3:00 PM in U299. For further information about veterans' issues, please contact Kristina Taylor, Financial Aid Advisor/Veterans Certifying Official, 217-351-2228 or [ktaylor@parkland.edu](mailto:ktaylor@parkland.edu) or Lori Williams, Professor of English/Student Veterans at Parkland Faculty Advisor, 217-373-3792 or [lwilliams@parkland.edu](mailto:lwilliams@parkland.edu).**Addenda:** Please access Cobra to view the college-wide policies, which contain invaluable information to help you succeed at Parkland. Go to [cobra.parkland.edu/shared/shared%20content%20files/syllabus\\_addendum.html](http://cobra.parkland.edu/shared/shared%20content%20files/syllabus_addendum.html).**Study Groups:** You are encouraged to work with other students on assignments, but all submitted answers must be in your own words, and each student must submit his/her own assignment.**Email:** Email is probably the quickest way to contact your instructors. I will often email you through your Cobra account, but you can forward those emails to another account of your choice. All assignments, labs, etc. must be submitted into the specific submissions dropbox for each assignment on Cobra in order to get credit for the assignment.

<b>Grading:</b> 900-1000 points	A	Pre- and Post-Assessment and Syllabus Quiz:	15 points
800-899 points	B	Quizzes (40 points each, seven):	280 points
700-799 points	C	Clicker questions participation:	100 points
600-699 points	D	Lab Activities (20 points each, 13 of 14):	260 points
0-599 points	F	Sky Drills (five points each, two):	10 points
or < 60% (< 156 points) on labs		Sky Quizzes (20 points each, two):	40 points
		Observing session and report:	80 points
		Course Project:	80 points
		Final Exam:	135 points
		<b>Total:</b>	<b>1000 points</b>

**Pre- and post-course assessments:** You must complete a thirty-question, multiple-choice quiz on Cobra within the first couple days of class. It is ungraded, and you will receive five points upon completion of the assignment. You will also have a post-course assessment available with similar grading guidelines.

**Syllabus quiz:** To ensure you have read through the syllabus and the syllabus addendum, you must also pass the syllabus quiz to access certain portions of the course. You may take the quiz multiple times in the first week to ensure you know the material and earn all five points.

**Quizzes and final exam:** There will be seven quizzes throughout the semester and will be taken on Cobra. You are given two chances to take each of the seven unit quizzes. Your total grade will be the average of the two quizzes, but you may choose to take the quiz once. You must take each quiz before the deadline, or your grade will be a zero. The quizzes cover the recent class material, while the final exam is cumulative. The date for the final exam is on the first page.

**Participation:** Participation will be worth 100 points and is based on punctual attendance and using the iClicker. Your iClicker activity will be scored based on answering questions, not answering them correctly. If a student is late more than twice, it will be marked as an absence. If a student falls asleep or is repeatedly texting, they are not mentally present and may be counted as absent. *Three or more unexcused absences will result in a 20 point deduction.*

**Laboratory activities:** Lab activities occur only one day a week, and can't be made up. However, the lowest score of your labs will be dropped. The Lab Procedures have more information and will be covered in your first lab.

**Sky drills and sky quizzes:** You will be quizzed on constellations, asterisms, and other sky objects in the planetarium. A list of the objects you will need to know is given on the website. A drill session will be given during class to prepare you for each Sky Quiz. Attendance at each drill is worth five points. Dates for these drills and quizzes are given in the schedule and on the Sky Quizzes page. Optional extra or make-up practices will be held and are also listed on the Sky Quizzes page.

**Lunar Cycle Observing Project:** An observing research project will be completed during the semester. The project is worth 80 points. The project involves making observations of the moon over a six-week period. There will be extra credit lunar observing sessions to help with your observations. You will analyze the data you collect, and write a final report as well. Details of the project can be found on the website.

**Observing session:** Stellarium is a wonderful tool, but nothing can compare to the real night sky. You will receive 60 points for simply attending the observation, *but you will not receive any points until you submit a typed report about the session.* The report is worth 20 points, should contain at least 800 words, and must be turned in within one week of the observing session. The report should include a description of the observing conditions, a summary of what you did during the session, a description of each object observed, and a definition of each type of object observed (i.e. if you observe a planetary nebula, write a definition of a planetary nebula).

The observing session takes place at the CUAS Observatory, about 15 minutes' drive from Parkland. You will be required to sign up for the session you wish to attend. Dates and times for these observations will be provided in class and on Cobra. These are scheduled between the last quarter and new moon phases. See the Observing Schedule page for more information. All observing sessions are "weather permitting." Contact the hotline or me via text before coming to the session. Here are the driving directions: [goo.gl/maps/9Sifd](http://goo.gl/maps/9Sifd)

In addition, there will be observing sessions of the Moon offered for extra credit during the first week of the project. They will be held outside Staerkel Planetarium.

**Extra Credit:**

There is a 70 point limit on extra credit earned. Several opportunities are listed below and on the website.

**Extra credit opportunities this semester:**

Saturday Engineering for Everyone lecture every other Saturday at 10:15 AM, check the schedule for astronomy topics

World of Science lecture first Friday of the month at 7:00 PM, check the schedule for astronomy topics

Staerkel Planetarium shows Fridays and Saturdays at 8:00 PM all semester

Prairie Skies shows at Staerkel Planetarium Fridays at 7:00 PM all semester

Family Skywatch at CUAS Observatory on Saturdays around the first quarter Moon at 19:30

Feel free to ask me about other potentially eligible events.

**Tentative Schedule:**

Week	Sections	Topics	Special Notes	Lab (*laptops)
1/12	1-1 – 1-5; 1-14	Introducing the Night Sky	<b>Planetarium (F)</b>	Stellarium Tutorial*
1/19	1-6 – 1-13	Seasons; Lunar Phases; Eclipses	no class (M)	Scientific Method*
1/26	2-1 – 2-3	Ancient Astronomy; Geocentric and Heliocentric Models	Quiz 1; <b>Project Introduction (M)</b>	Seasons
2/2	2-4 – 2-8	Copernicus, Galileo, Kepler, Newton	Week 1 observations due (M); <b>Planetarium (F)</b>	Lunar Phases and Eclipses
2/9	3-1 – 3-4	Laws of Motion; Gravity; Light	Week 2 due (M); Quiz 2; <b>Sky Drill #1 (F)</b>	Retrograde Motion*
2/16	3-5 – 3-11	Telescopes; Spectra	Week 3 due (M); Quiz 3; <b>Sky Quiz #1 (F)</b>	Telescopes
2/23	3-12 – 3-18; 4-1 – 4-7	Spectroscopy; Solar System Formation	Week 4 due (M); <b>Sky Drill #2 (F)</b>	Spectra
3/2	4-8 – 4-10; 5-1 – 5-10	Solar System Composition	Week 5 due (M); <i>Midterm</i> (F); <b>Sky Quiz #2 (F)</b>	Hunt For Alien Worlds
3/9	6-1 – 6-10; 8-13	Earth and the Moon	Week 6 due (M); Quiz 4	<b>Project Analysis*</b>
3/16	6-11 – 6-17	Mercury and Venus		Meteors: Fire In The Sky*
3/23			Spring break	
3/30	6-18 – 6-25; 7-1 – 7-8	Mars and Jupiter	Quiz 5	Magnetic Storm*
4/6	7-9 – 7-17	Saturn, Uranus, and Neptune	<b>Project paper due (M)</b>	Future Tourist Traps*
4/13	ch. 7 8-1 – 8-2	Jovian Moons; Pluto and Other Dwarf Planets	Quiz 6	Finding Life Beyond Earth*
4/20	8-3 – 8-12	Asteroids, Comets, Meteors		Kuiper Belt Discovery
4/27	9-1 – 9-10	The Sun	Quiz 7	Solar Observing*
5/4	Review	Exobiology	no class (F)	no lab
5/11			<b>Final exam: 2:00 Tue (003)</b>	