Class Assignments (CA)

Notes:

1. The contents of this document is subject to change.
2. If the video is too fast, you can slow it down to your liking or you can play it as many times as you like.

CA	Instructions	What you need to turn in?
1.	Go to website https://www.oercommons.org/authoring/17181-distant-nature-astronomy-exercises/2/view Click 'Table of Contents" and "Using Stellarium with Distant Nature". Read the document. If you have a personal computer you can try installing Stellarium, its free. Otherwise computers in Science 207/208 can also be used, they have Stellarium already installed. You can search for it. There are many YouTube videos available on Stellarium here is one of them. https://www.youtube.com/watch?v=V7awF5xYtEQ	A snapshot of Stellarium showing sky view for 01/16/19 Stephenville.
2.	Go to website https://www.youtube.com/watch?v=1Toya19H12w&t=33s Watch the video Celestial Sphere". Go to website https://www.oercommons.org/authoring/17181-distant-nature-astronomy-exercises/2/view Click "Table of Contents" and "Celestial Coordinates" Read the document and try out the Exercise.	Draw a Celestial Sphere and label all the important markers on it.
3.	Go to website http://www.iop.org/resources/videos/education/classroom/astronomy/page_51897.html Watch the video "Models of the Solar System". Go to website https://www.oercommons.org/authoring/17181-distant-nature-astronomy-exercises/11/view Click "Table of Contents" and "Kepler's 3rd Law". Read the document and complete the exercise "Keplers3rdlaw_ExerciseForm.pdf"	Turn in a copy of the completed exercise form.
4.	Go to website https://cosmolearning.org/courses/astronomy-crash-course/ Watch video "Gravity of the Situation". Go to website https://www.youtube.com/watch?v=7gf6YpdvtE0 Watch the video "Newtonian Gravity". Go to website https://phet.colorado.edu/en/simulation/gravity-force-lab Run the simulation Gravity Force Lab. Complete the handout "Lab Newtons Universal Law PhET simulation.pdf"	Turn in a copy of the completed handout.

	This handout is on class web page under class assignment section	
5.	Go to websites https://cosmolearning.org/courses/astronomy-crash-course/ Watch the video “Light”. Go to websites http://www.iop.org/resources/videos/education/classroom/astronomy/page_51897.html Watch the video “The Electromagnetic Spectrum”. Go to website https://www.oercommons.org/authoring/17181-distant-nature-astronomy-exercises/9/view Click “Table of Contents” and “Blackbody Radiation”. Read the document and complete the exercise “Blackbody_Radiaiton_ExerciseForm.pdf”	Turn in a copy of the completed exercise form.
6.	Go to websites https://cosmolearning.org/courses/astronomy-crash-course/ Watch video “Telescopes”. Go to website https://astro.unl.edu/classaction/animations/telescopes/telescope10.html make sure flash plugin is enable in your browser. You can play with the simulation but note that the telescope is a Refractor.	Answer the question in your own handwriting, “Telescope A is a reflector of diameter 6 inch and Telescope B is a reflector of diameter 10 inch. Calculate the light gathering power. What is the resolving power of each telescope at optical wavelength? What is the magnification of each telescope if the eyepiece is 9mm?
7.	Go to website https://www.youtube.com/watch?v=mL-BYWkY6m0 Watch the video Go to website https://cosmolearning.org/video-lectures/radio-telescopes/ Go to website https://cosmolearning.org/video-lectures/radio-interferometers/	Answer the question in your own handwriting, “How does a radio telescope work and why are they used in interferometry”?
8.	Go to website https://www.youtube.com/watch?v=KWAsz59F8gA Go to website https://www.youtube.com/watch?v=FU6y1XIADdg&t=110s	Answer the question in you own handwriting, “Describe the proton-proton and carbon-nitrogen-oxygen chain reactions”.
9.	Go to websites https://cosmolearning.org/courses/astronomy-101-by-skynet-university/ Watch the video “Atomic Structure” and “Hydrogen Spectral Series”.	Answer the questions in your own handwriting, “How do atoms give off electromagnetic radiation?”.

	Go the website https://astro.unl.edu/naap/hydrogen/hydrogen.html Read and follow the instructions in Hydrogen Energy Level to complete it using the simulator.	
10.	Go to websites https://cosmolearning.org/courses/astronomy-crash-course/ Watch video "Distances". Go to websites https://cosmolearning.org/courses/astronomy-crash-course/ Watch video "Stars". Go to the website Click "Table of Contents" and "Stellar Proper Motion". Read the document and complete the exercise "StellarProperMotion_ExerciseForm.pdf"	Turn in a copy of the completed exercise form.
11.	Go to websites https://cosmolearning.org/courses/astronomy-crash-course/ Watch video "Binary and Multiple Stars".	Answer the questions in your own handwriting, "what are eclipsing binary stars and how can they be used to derive the masses of the stars?"
12.	Go to websites https://cosmolearning.org/courses/astronomy-crash-course/ Watch video "Brown Dwarfs". Go to website https://www.oercommons.org/authoring/17181-distant-nature-astronomy-exercises/14/view Go to website http://www.iop.org/resources/videos/education/classroom/astronomy/page_51897.html Watch the video "The Life of Stars".	Answer the question in your own handwriting, "Draw an H-R diagram of a low mass star from birth to main-sequence stage. Label on this diagram where, Bok globules would be and where TT Tauris stars will be located.
13.	Go to websites https://cosmolearning.org/courses/astronomy-crash-course/ Watch videos "Low Mass Stars" "High Mass Stars".	Answer the question in your own handwriting, "Compare the evolution of a one solar mass star with a 5 solar mass star by drawing an H-R diagram of each and label the important stages in the evolution of the stars.
14.	Go to websites https://cosmolearning.org/courses/astronomy-crash-course/ Watch videos "White Dwarfs and Planetary Nebulae" "Neutron Stars" "Black Holes".	Answer the question in your own handwriting," Describe what is Chandrashekar Limit and its use in Astrophysics.

15.	Go to websites https://cosmolearning.org/courses/astronomy-crash-course/ Watch video "The Milky Way" "Galaxies, part 1" "Galaxies, part 2" "Gamma-Ray Bursts" "Dark Matter". Go to website https://www.oercommons.org/authoring/17181-distant-nature-astronomy-exercises/15/view Click "Table of Contents" and "Our Galaxy, the Milky Way" Read and complete the exercise "The_Milky_ExerciseForm.pdf" Go to website https://www.oercommons.org/authoring/17181-distant-nature-astronomy-exercises/16/view Click "Table of Contents" and "Measuring Galactic Distances" Read and complete the exercise Measuring_Galactic_Distnaces_ExerciseForm.pdf"	Turn in both Exercise Form.
16.	Go to websites https://cosmolearning.org/courses/astronomy-crash-course/ Watch videos "The Big Bang, Cosmology part 1" "Dark Energy, Cosmology part 2" "A Brief History of the Universe" "Deep Time" Go to website	Answer the question in your handwriting, "Describe the essential features of the big bang model"