

**Natural Sciences**  
**Institutional (ILO), Program (PLO), and Course (SLO) Alignment**

<b>Program : Astronomy</b>		<b>Number of Courses</b> 4		<b>Date Updated</b> 11.12.13		<b>Submitted by</b> T. James Noyes, ext. 3356							
<b>Institutional SLOs</b>	I. Content Knowledge	II. Critical, Creative, and Analytical Thinking	III. Communication and Comprehension	IV. Professional and Personal Growth	V. Community and Collaboration	VI. Information and Technology Literacy							
<b>Program Rating</b>	4	4	2	1	1	1							
<b>Program Level SLOS</b>						<b>ILOs to PLOs Alignment</b> (Rate 1-4)							
						I	II	III	IV	V	VI		
<b>PLO #1. Scientific Method</b> Students can explain how the Scientific Method is used to develop scientific theories.						3	4	2	1	1	2		
<b>PLO #2. Applications</b> Students will be able to identify and appreciate ways in which astronomy affects their daily lives.						3	3	2	3	1	1		
<b>PLO #3. Origins</b> Students will be able to describe the structure and contents of the Universe and major events in the history of the Universe that led to the formation of the Earth						4	3	2	2	1	1		
<b>PLO #4. Physical Laws</b> Students will explain how the application of the laws of physics reveals the properties of stars, planets, and galaxies.						4	3	1	2	1	1		
<b>Course Level SLOs</b>				<b>Course to Program SLO Alignment</b> Mark with an X				<b>ILOs to Course SLOs Alignment</b> (Rate 1-4)					
				P1	P2	P3	P4	I	II	III	IV	V	VI
<b>ASTR 12 Astronomy Laboratory: SLO #1. Scientific Method.</b> Students will be able to apply the Scientific Method to the solution of astronomical problems.				X				3	4	2	1	1	2
<b>ASTR 12 Astronomy Laboratory: SLO #2. Locating Celestial Objects.</b> Using a Cassegrain reflecting telescope, students will be able to align the telescope and point it at several objects, including the Moon, planets visible to the naked eye, planets invisible to the naked eye, bright stars, faint stars, and diffuse objects (clusters, nebulae, and galaxies).							X	3	4	2	1	1	2
<b>ASTR 13abc Astronomical Optics: SLO #1. Optical Surfaces.</b> Using a Cassegrain reflecting telescope, students will be able to align the telescope and point it at several objects, including the Moon, planets visible to the naked eye, planets invisible to the naked eye, bright stars, faint stars, and diffuse objects (clusters, nebulae, and galaxies).							X	4	3	1	2	1	1

Course Level SLOs	Course to Program SLO Alignment Mark with an X				ILOs to Course SLOs Alignment (Rate 1-4)					
	P1	P2	P3	P4	I	II	III	IV	V	VI
<b>ASTR 20 The Solar System: SLO #1. Scientific Method.</b> Students will be able to recognize the elements of the Scientific Method in the discussion of a scientific problem.	X				3	4	2	1	1	2
<b>ASTR 20 The Solar System: SLO #2. Seasons.</b> Students will be able to explain the causes of seasonal variations in the length of the day, direction of sunrise and sunset, and the amount of solar heating on the Earth.		X			3	3	2	3	1	1
<b>ASTR 20 The Solar System: SLO#3. Planet Origins.</b> Students will be able to describe the modern theory of the origin of the planets and discuss the evidence that supports the theory.			X		4	4	2	1	1	1
<b>ASTR 25 Stars and Galaxies: SLO#1. Scientific Method.</b> Students will be able to recognize the elements of the Scientific Method in the discussion of a scientific problem.	X				3	4	2	1	1	2
<b>ASTR 25 Stars and Galaxies: SLO#2. EM Radiation.</b> Students will explain how electromagnetic radiation and astronomical instruments are used to reveal the properties of stars and planets.				X	4	3	1	2	1	1
<b>ASTR 25 Stars and Galaxies: SLO#3. Universe Origin.</b> Students will be able to describe the modern theory of the origin of the Universe (the Big Bang Theory) and discuss the evidence that supports the theory.			X		4	3	2	2	1	1