

# Program Outcome Mapping

## Astronomy Associate of Science Degree

Department: Physics/Astronomy/Engineering

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Date Modified: 09/08/2020

**Purpose:** The purpose of this form is to map program outcomes. This benefits your program by allowing visualizations on how your program aligns with San Bernardino Valley College's outcomes. Part I maps your Program Learning Outcomes (PLOs) to Institutional Learning Outcomes (ILOs). Part II maps your PLOs to courses within your program. Once this is completed, we will continue the mapping by including Student Learning Outcomes (SLOs) to PLOs and ILOs.

### Institutional Learning Outcomes (ILOs)

ILO 1 Communication Skills	ILO 2 Quantitative Skills	ILO 3 Critical Thinking Skills	ILO 4 Discipline Specific Skills	ILO 5 Personal, Social, Professional Responsibility
<p><u>Literacy:</u> Reading, listening, observing, speaking, and writing</p> <p><u>Interpersonal Skills:</u> Working with individuals and groups, including conflict resolution, and giving/receiving constructive feedback</p>	<p><u>Mathematical Theory:</u> Understanding mathematical concepts and structures</p> <p><u>Applied Mathematics:</u> Applying mathematical skills and numerical data to analyze and solve real world problems</p> <p><u>Mathematical Visualization:</u> Using graphs, charts, and tables</p>	<p><u>Information Literacy:</u> Finding, interpreting, and evaluating information in print, electronic, and non-electronic media sources</p> <p><u>Logical Reasoning:</u> Constructing, supporting, analyzing, and evaluating arguments</p> <p><u>Problem Solving:</u> Using evidence-based reasoning to articulate a problem and propose hypotheses or solutions</p> <p><u>Creativity:</u> Using creative reasoning for problem solving and personal and social expression</p>	<p><u>Discipline Theory:</u> Understanding and employing discipline vocabulary, ideas, theories, standards, and ethics</p> <p><u>Discipline Technology:</u> Using tools, computers, instruments, and equipment relevant to discipline</p> <p><u>Discipline performance:</u> Working in labs, workshops, clinics, performances, and work experience relevant to discipline</p>	<p><u>Self-knowledge:</u> Understanding and evaluating personal strengths, weaknesses, biases, and values</p> <p><u>Goal setting:</u> Setting goals that are realistic and balance educational, professional, and personal life</p> <p><u>Cultural Awareness:</u> Understanding and respecting one's own culture, other cultures, and diversity</p> <p><u>Ethics:</u> Understanding and practicing ethics, intellectual honesty, fairness, and personal responsibility</p>

# Program Outcome Mapping

**Part I - Directions:** Use the chart above to align PLOs to ILOs. Use an "X" to indicate that a PLO is a major focus of the course or program. This means the PLO has a clear connection to the PLO or ILO. There should be one "X" per column. You may not use every column, but it may be because the SLO will eventually lead to an ILO.

PLO to ILO Map					
<b>Astronomy Associate of Science Degree</b>  <i>At the completion of the program, students will be able to:</i>	Use an "X" to indicate where a PLO aligns with an ILO:				
	1	2	3	4	5
1. Define physics and astronomical concepts, including the major structures, events, and components that make up the Universe and led to the formation of our current celestial systems	X	X	X	X	
2. Identify how the various principles of physics and astronomy describe the properties of stars, planets, galaxies, and their motion	X	X	X	X	X
3. Demonstrate standard laboratory techniques commonly acquired in lower-division coursework	X	X	X	X	X

**Part II - Directions:** Use the catalog link to align PLOs to each course listed in your program. Look through your course offerings and determine what course(s) align with each PLO below.

PLO to Course Map	
<b>Astronomy Associate of Science Degree</b>  Catalog Link: <a href="https://catalog.valleycollege.edu/degree-certificate-program-index/astronomy/astronomy-as-degree/">https://catalog.valleycollege.edu/degree-certificate-program-index/astronomy/astronomy-as-degree/</a>  <i>At the completion of the program, students will be able to:</i>	Type the course or courses in the program that align to each PLO below:
1. Define physics and astronomical concepts, including the major structures, events, and components that make up the Universe and led to the formation of our current celestial systems	ASTRON 120, ASTRON 125, PHYSIC 202
2. Identify how the various principles of physics and astronomy describe the properties of stars, planets, galaxies, and their motion	ASTRON 120, ASTRON 125, PHYSIC 202, MATH 250, MATH 251, MATH 252
3. Demonstrate standard laboratory techniques commonly acquired in lower-division coursework	ASTRON 125