

# ASTRONOMY (ASTR)

## ASTR 10A • GENERAL ASTRONOMY: SOLAR SYSTEM

<b>Units:</b>	5
<b>Hours:</b>	5 lecture per week (60 total per quarter)
<b>Advisory:</b>	Concurrent enrollment in ASTR 10L.
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Area III: Natural Sciences
<b>Transferable:</b>	CSU/UC
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

Non-technical introduction to astronomy, with emphasis on the planets, dwarf planets, moons, and smaller bodies which make up our solar system, as well as the scientific search for life elsewhere in the universe. Topics include the nature of light, the atom, and telescopes; an examination of the planets and their moons and rings, dwarf planets, comets, asteroids, and meteors; catastrophic events (including the impact that may have killed the dinosaurs); the search for planets and life around other stars, the challenges of space travel, and modern views on extraterrestrial contact. No background in science or math is assumed.

## ASTR 10B • GENERAL ASTRONOMY: STARS, GALAXIES, COSMOLOGY

<b>Units:</b>	5
<b>Hours:</b>	5 lecture per week (60 total per quarter)
<b>Advisory:</b>	Concurrent enrollment in ASTR 10L; not open to students with credit in ASTR 10BH.
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Area III: Natural Sciences
<b>Transferable:</b>	CSU/UC
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

Non-technical introduction to astronomy, with emphasis on stars, galaxies, and the origin and evolution of the universe. Topics covered include the nature of light, atoms, and telescopes; the birth, evolution, and death of stars (including an introduction to black holes); the Milky Way Galaxy and its development over time; normal galaxies, active galaxies, and cannibal galaxies; and the Big Bang model (of the origin and ultimate fate of the cosmos). No background in science or math is assumed.

## ASTR 10BH • HONORS GENERAL ASTRONOMY: STARS, GALAXIES, COSMOLOGY

<b>Units:</b>	5
<b>Hours:</b>	5 lecture per week (60 total per quarter)
<b>Advisory:</b>	Concurrent enrollment in ASTR 10L; not open to students with credit in ASTR 10B.

**Degree and Credit Status:** Degree-Applicable Credit Course

<b>Foothill GE:</b>	Area III: Natural Sciences
<b>Transferable:</b>	CSU/UC
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

Non-technical introduction to astronomy, focusing on qualitative reasoning about stars, galaxies, and the origin and evolution of the universe. Topics include: the nature of light, matter, and telescopes; the basic physical processes of the universe; the formation and death of stars and their role in producing the elements necessary for life (including an introduction to black holes); the Milky Way and other galaxies, their structure, formation, and evolution; the history, evolution, and structure of the universe from the Big Bang to the heat death of the universe; the impact of astronomical events on life on Earth. The honors section offers a challenging intellectual environment which covers the same outline as the general course but in more depth.

## ASTR 10L • ASTRONOMY LABORATORY

<b>Units:</b>	1
<b>Hours:</b>	3 laboratory per week (36 total per quarter)
<b>Corequisite:</b>	Completion of or concurrent enrollment in ASTR 10A, 10B or 10BH.

**Degree and Credit Status:** Degree-Applicable Credit Course

<b>Foothill GE:</b>	Area III: Natural Sciences
<b>Transferable:</b>	CSU/UC
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

A hands-on approach to the scientific method, using astronomical data and equipment. Divided into small lab groups, students will do experiments and observing projects about a range of astronomical topics, including the phases of the Moon, the reasons for the seasons, the rotation, revolution, and sphericity of the Earth, and the scale and composition of astronomical objects. Students will carry out naked-eye observations of the sky, visit the Foothill observatory, and use a portable telescope to communicate about astronomy with other students and the public.

## **ASTR 54H • HONORS INSTITUTE SEMINAR IN ASTRONOMY**

<b>Units:</b>	1
<b>Hours:</b>	1 lecture per week (12 total per quarter)
<b>Corequisite:</b>	ASTR 10BH.
<b>Advisory:</b>	Not open to students with credit in ASTR 34 or 34H.
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	CSU
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

In this honors seminar, students build upon topics covered in Astronomy lecture courses by developing a presentation, piece of writing, video, or some other creative piece to teach others about an astronomical phenomenon. The course emphasizes learning how to carry out effective background research, process that information for understanding, and refine that understanding by preparing material to explain the phenomena to others (i.e., "To teach is to learn twice over").

## **ASTR 70R • INDEPENDENT STUDY IN ASTRONOMY**

<b>Units:</b>	1
<b>Hours:</b>	3 laboratory per week (36 total per quarter)
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	CSU
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

Provides an opportunity for the student to expand their studies in Astronomy beyond the classroom by completing a project or an assignment arranged by agreement between the student and instructor. The student is required to contract with the instructor to determine the scope of assignment and the unit value assigned for successful completion. Students may take a maximum of 6 units of Independent Study per department.

## **ASTR 71R • INDEPENDENT STUDY IN ASTRONOMY**

<b>Units:</b>	2
<b>Hours:</b>	6 laboratory per week (72 total per quarter)
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	CSU
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

Provides an opportunity for the student to expand their studies in Astronomy beyond the classroom by completing a project or an assignment arranged by agreement between the student and instructor. The student is required to contract with the instructor to determine the scope of assignment and the unit value assigned for successful completion. Students may take a maximum of 6 units of Independent Study per department.

## **ASTR 72R • INDEPENDENT STUDY IN ASTRONOMY**

<b>Units:</b>	3
<b>Hours:</b>	9 laboratory per week (108 total per quarter)
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	CSU
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

Provides an opportunity for the student to expand their studies in Astronomy beyond the classroom by completing a project or an assignment arranged by agreement between the student and instructor. The student is required to contract with the instructor to determine the scope of assignment and the unit value assigned for successful completion. Students may take a maximum of 6 units of Independent Study per department.

## **ASTR 73R • INDEPENDENT STUDY IN ASTRONOMY**

<b>Units:</b>	4
<b>Hours:</b>	12 laboratory per week (144 total per quarter)
<b>Degree and Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	CSU
<b>Grade Type:</b>	Letter Grade (Request for Pass/No Pass)
<b>Repeatability:</b>	Not Repeatable

Provides an opportunity for the student to expand their studies in Astronomy beyond the classroom by completing a project or an assignment arranged by agreement between the student and instructor. The student is required to contract with the instructor to determine the scope of assignment and the unit value assigned for successful completion. Students may take a maximum of 6 units of Independent Study per department.