



**NORTHERN**  
Oklahoma College

# Astronomy

**DIVISION OF ENGINEERING, PHYSICAL SCIENCES AND PROCESS TECHNOLOGY | NOC ENID**

Astronomer ■ Astronomical Research ■ Data Analyst ■ Observatory  
Planetarium ■ Science Journalist ■ Science Museum ■ Teacher

The Associate in Science degree in Astronomy studies origin and characteristics of terrestrial planetary atmospheres; characteristics of gas giant planets and ice moons, asteroids and comets; discoveries and characteristics of extra-solar planetary systems; aspects of colonization; techniques of using telescopes and astronomical instruments; astronomical data collection and processing; concepts of optics and spectroscopy.

## **Astronomy Center**

One of the most comprehensive astronomy centers in the region, the Northern Oklahoma College Astronomy Center in Enid houses the Bert and Janice Mackie Planetarium, Observatory, David Harbor Solar Laboratory and the Astronomy Research Laboratory. The center serves the NOC student population, allowing students to participate in original research projects, as well as providing a community resource for weekly planetarium viewings.



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## Planetarium

Visitors at the Mackie Planetarium, one of the largest in Oklahoma, can view the sky as it appears during any hour of the night of any year from any location on the Earth. The building can seat 115 visitors under a 40-foot diameter dome, and the chairs are custom designed to optimize the viewing experience. The planetarium can also be used as a lecture room.

## Observatory

Constructed in 2002, the NOC Observatory houses a research-grade 14-inch telescope within a 16.5-foot diameter steel building and dome. In addition to the main telescope and instruments, which include a CCD imaging system and spectrograph, nine other telescopes are capable of being mounted on steel piers outside the building. Two of the telescopes are equipped with sun filters and are used during daylight hours for solar observations and sunspot monitoring.

Students can conduct original research projects with the 14-inch telescope. These research projects may contribute to international astronomy research by carrying out observations that large university observatories cannot undertake due to the demand for time on their telescopes.

## Solar Research Lab and Astronomy Lab

The David Harbor Solar Laboratory houses the only heliostat in the state. The heliostat tracks the sun from the roof of the astronomy building and projects the solar image into a room for viewing by groups. Sunspots are monitored and tracked from the observing room.

In the Astronomy Laboratory, students can use computers to process and analyze images taken at the observatory. Images and information may then be shared with the general public or with students in other communities through the NOC website: [www.noc.edu](http://www.noc.edu).

### FIRST SEMESTER 15

ENGL 1113	English Composition I.....	3
ORNT 1101	Freshman Orientation .....	1
MATH 1513	Algebra for STEM.....	3
MATH 1613	Plane Trigonometry.....	3
CHEM 1315	Chemistry 1 .....	5

### SECOND SEMESTER 15

ENGL 1213	English Composition II.....	3
MATH 2145	Calculus I.....	4
ENGR 1114	Engineering Physics I.....	4
Recommended Elective		
ESCI 1214	Earth Science.....	4

### THIRD SEMESTER 18

POLI 1113	American Government.....	3
BADM 1113	Digital/Finance Literacy.....	3
ENGR 2114	Engineering Physics II .....	4
Recommended Elective		
MATH 2154	Calculus II .....	4
ASTR 1014	Survey of Astronomy .....	4

### FOURTH SEMESTER 13

HIST 1483	American History to 1877 [or]	
HIST 1493	American History since 1877.....	3
MATH 2164	Calculus III.....	4
Humanities Elective .....		6
[2-3 Courses]		

*This is a suggested sequence timeline only. A student may require more than four semesters to complete an Associate in Science degree.*

### Contact Information

For more information on NOC Astronomy or other areas of study, please contact any NOC faculty/staff below:

#### Engineering, Physical Sciences and Process Technology Division Chair

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