

COLLEGE OF NATURAL AND SOCIAL SCIENCES

PHYSICS AND PHYSICAL SCIENCE

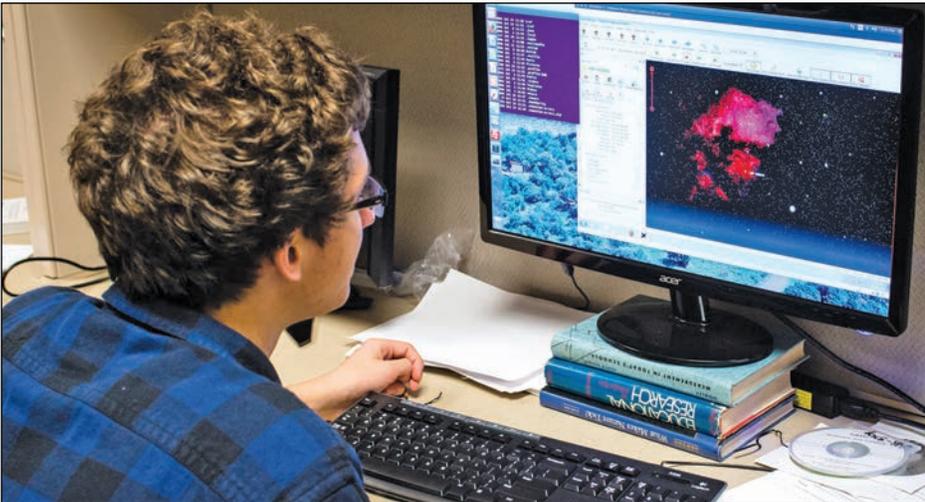


Photo by Lani Jensen Photography

ASTROPHYSICS COMPREHENSIVE

Questions frequently asked in astronomy are how does the universe work and where did it come from? Astronomy is a physical science – a study of objects and matter – outside the Earth’s atmosphere. Astronomers use observations to collect data and theory to make sense of it. They rely entirely on observation, unlike physicists and chemists who build laboratories and do experiments.

Recent new discoveries by astronomers have revealed a richer and more varied universe than anyone has dreamed. In the last few years, astronomers have discovered dark energy, mapped the shape of the universe, plotted out the world’s earliest years, sent rovers to Mars, and discovered planets around other stars. The universe is so vast and its mysteries so deep that future astronomers will be challenged to ask new and greater questions.

Personal traits needed for success in astrophysics

- “Eats, lives and breathes” science
- Asks questions
- Uses logical reasoning
- Pays close attention to details
- Perseveres
- Solves complex problems
- Communicates well
- Enjoys math
- Knows computer applications
- Understands teamwork
- Stays up-to-date on new developments

Did you know?

Student-faculty relationships are a hallmark of the UNK experience.

Faculty interact on a personal basis with students as teachers, advisers, mentors and friends both inside and outside the classroom, and from your freshman year to graduation and beyond.

Alumni profile

“For me, it only seemed natural to study physics at UNK. As a kid, I was often scolded by my mother for taking perfectly good things apart just to see what made them function,” said Joshua Beck, a 2011 UNK alumnus who double-majored in physics and mathematics and minored in computer science. “I’ve always loved learning new things, especially through a hands-on experience. Physics helps me pick apart the world around me and understand at a fundamental level what is actually happening.”



JOSHUA BECK

Beck received one-on-one time from a mentor doing undergraduate research. “I feel the professor I started working with did his best to reinforce what I learned in the classroom. The classes at UNK weren’t very large, so when I went to a professor during their office hours, they often knew me by name and were more than willing to help me understand the material.”

Beck says he is challenged by physics. “I had to work to gain an understanding of general physics concepts, and I continue to work to understand the research I do today.” Beck is now enrolled in the Physics Ph.D. program at the University of Nebraska-Lincoln.

Reasons to study astrophysics at UNK

- Students work hands-on in astronomy research projects with faculty members and other students.
- Majors take a variety of classes in astronomy, physics and mathematics in a small class environment.
- Graduates will be well-prepared for graduate school in physics or astronomy, or for a wide variety of careers that require technical reasoning, the ability to work with large datasets, and mathematical and computer skills.

ASTROPHYSICS COMPREHENSIVE Bachelor of Science

FOUR YEAR CLASS SCHEDULE

The schedule is a guideline for progress toward a degree. Consult with your academic adviser.

<p>Semester 1 (16 credits)</p> <p>PHYS 275/275L General Physics I MATH 115 Calculus I Portal 188 (your choice) General Studies Written Communication</p>	<p>Semester 2 (16 credits)</p> <p>PHYS 276/276L General Physics II MATH 202 General Studies Oral Communication General Studies Democracy</p>
<p>Semester 3 (16 credits)</p> <p>PHYS 210 Astronomy PHYS 346 Modern Physics MATH 260 Calculus 3 CHEM 160/160L General Chemistry I</p>	<p>Semester 4 (16 credits)</p> <p>PHYS 410 Math Phys I PHYS 440 Thermo/Stat Mech CSIS 112 Programing Math305 ODE CHEM 161/161L General Chemistry II</p>
<p>Semester 5 (16 credits)</p> <p>PHYS 407 E&M PHYS 430 Optics PHYS 350 Astrophysics I General Studies Dist Social Science General Studies Dist Aesthetics</p>	<p>Semester 6 (16 credits)</p> <p>PHYS 419 Quantum Mechanics PHYS 351 Astrophysics II Elective NS Distribution General Studies Dist Humanities General Studies Dist Humanities</p>
<p>Semester 7 (14 credits)</p> <p>PHYS 402 Mechanics PHYS 495 Research in Physics PHYS 360 Astronomy Methods I Program free elective General Studies Dist Social Science</p>	<p>Semester 8 (10 credits)</p> <p>PHYS 361 Astronomy Methods II PHYS 498 Senior Seminar General Studies free elective Capstone 388 (your choice)</p>



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Society of Physics Students

The Society of Physics Students is a professional association open to anyone interested in physics. Within SPS is the national physics honor society, Sigma Pi Sigma, for members who have demonstrated outstanding academic achievement.

- Biweekly meetings
- Community-building events
- Physics conferences
- SPS/Sigma Pi Sigma banquet
- School science fair judging
- High school senior recruiting days
- Movie nights in the UNK planetarium

SCHOLARSHIPS AVAILABLE

- Donald L. Liehs Scholarship Endowment
- Dr. Mary L. Morse Memorial Scholarship
- James W. Nielsen Memorial Scholarship
- Elmer H. and Marian L. Beckman Scholarship

F.Y.I – For your information

High school students thinking about studying physics in college should take as many advanced classes as possible in science and math. This will provide a foundation for college coursework.

UNK physics graduates find employment in industrial settings and government labs, or on college campuses, as well as in other science and technology fields. Unconventional settings include newspapers and magazines, and in government or business – any place where problem-solving and analytical skills are great assets.

**YOU CAN BE PART OF
THE UNK EXPERIENCE**

For more information, contact:

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