

# ASTROPHYSICS COMPREHENSIVE, BACHELOR OF SCIENCE

Offered by Department of Physics and Astronomy (<http://catalog.unk.edu/undergraduate/departments-programs/physics-astronomy/>)

Code	Title	Credit Hours
<b>General Studies</b>		
<i>Foundational Requirements (LOPERs 1-4)</i>		14
LOPER 4: Mathematics, Statistics, and Quantitative Reasoning		
Including:		
MATH 115	Calculus I with Analytic Geometry <sup>1</sup>	
<i>Broad Knowledge Requirements (LOPERs 5-8)</i>		11
Including:		
Take any one course in LOPER 5, LOPER 6, or LOPER 7 that satisfies a Dispositional Requirement (LOPER 9 or LOPER 10) and a Broad Knowledge Requirement. The courses that meet these criteria are listed at <a href="https://catalog.unk.edu/undergraduate/general-studies/courses-satisfy-broad-knowledge-dispositional">https://catalog.unk.edu/undergraduate/general-studies/courses-satisfy-broad-knowledge-dispositional</a> ( <a href="https://catalog.unk.edu/undergraduate/general-studies/courses-satisfy-broad-knowledge-dispositional/">https://catalog.unk.edu/undergraduate/general-studies/courses-satisfy-broad-knowledge-dispositional/</a> ). See advisor for assistance.		
LOPER 8: Natural Science		
PHYS 275	General Physics I (Calculus)	
PHYS 275L	General Physics I (Calculus) Laboratory	
<i>Dispositional Requirements (LOPERs 9-10) <sup>2</sup></i>		6
<i>Wellness (LOPER 11) Optional</i>		0
<b>BS Science-related course requirements</b>		8
MATH 202	Calculus II with Analytic Geometry	
MATH 305	Differential Equations	
<b>Program Specified Requirements</b>		5
PHYS 276	General Physics II (Calculus)	
PHYS 276L	General Physics II (Calculus) Laboratory	
<b>Major Option</b>		
Complete all required courses		62
<b>Unrestricted electives</b>		
Needed to reach 120 credit hour minimum		14
Total Credit Hours		120

## Major Option

Code	Title	Credit Hours
<b>Astrophysics Comprehensive Requirements</b>		
PHYS 123	Freshman Physics Seminar	3
PHYS 210	Astronomy	3
PHYS 346	Modern Physics I	4
PHYS 350	Astrophysics I	3
PHYS 351	Astrophysics II	3

PHYS 360	Computational Methods in Physics and Astronomy	3
PHYS 361	Astronomy Methods II	3
PHYS 402	Analytic Mechanics	4
PHYS 407	Electricity & Magnetism	4
PHYS 410	Mathematical Techniques in Physics I	3
PHYS 419	Quantum Mechanics	4
PHYS 430	Optics	3
PHYS 440	Thermodynamics and Statistical Mechanics	3
PHYS 495	Research in Physics	3
PHYS 498	Senior Seminar in Physics	3

### Astrophysics Comprehensive Math Requirements

MATH 260	Calculus III	5
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### Astrophysics Comprehensive Chemistry Requirements

CHEM 160	General Chemistry	3
CHEM 160L	General Chemistry Laboratory	1
CHEM 161	General Chemistry	3
CHEM 161L	General Chemistry Laboratory	1

Total Credit Hours	62
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1

Students without sufficient preparation will also need to take the following courses, increasing the total credit hours needed:

- MATH 102
- MATH 103

2

Designated courses with the appropriate content may be approved to satisfy one of the Broad Knowledge requirements plus LOPER 9 or Broad Knowledge plus LOPER 10. Courses may be approved to satisfy LOPER 9 or LOPER 10 alone. (Courses satisfying LOPER 9 or LOPER 10 alone must be 3 credit hours.) Students applying this option will need to take additional hours in other categories to meet the required GS hours.