

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
General Studies		
<i>Foundational Requirements (LOPERs 1-4)</i>		14
LOPER 4: Mathematics, Statistics, and Quantitative Reasoning		
Including:		
MATH 115	Calculus I with Analytic Geometry ¹	
<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 https://catalog.unk.edu/undergraduate/general-studies/courses-satisfy-broad-knowledge-dispositional (https://catalog.unk.edu/undergraduate/general-studies/courses-satisfy-broad-knowledge-dispositional/). 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)</i> ²		6
<i>Wellness (LOPER 11) Optional</i>		0
BS Science-related course requirements		8
MATH 202	Calculus II with Analytic Geometry	
MATH 305	Differential Equations	
Program Specified Requirements		5
PHYS 276	General Physics II (Calculus)	
PHYS 276L	General Physics II (Calculus) Laboratory	
Major Option		
Complete all required courses		62
Unrestricted electives		
Needed to reach 120 credit hour minimum		14
Total Credit Hours		120

Major Option

Code	Title	Credit Hours
Astrophysics Comprehensive Requirements		
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
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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Students without sufficient preparation will also need to take the following courses, increasing the total credit hours needed:

- MATH 102
- MATH 103

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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.