## PHYSICS COMPREHENSIVE - ENGINEERING EMPHASIS, BACHELOR OF SCIENCE

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

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### General Studies

**Foundational Core (Written, Math, Oral, Democracy)**

Foundational Core courses [link](http://catalog.unk.edu/undergraduate/general-studies/general-studies-courses)  
Including:

- MATH 115 Calculus I with Analytic Geometry

**Portal**

Select one course numbered 188 [link](http://catalog.unk.edu/undergraduate/general-studies/general-studies-courses/portal-course)

**Distribution**

- ENG 101 Introduction of Academic Writing 3

If ENG 101 is not taken as a prerequisite for ENG 102 then additional hours may be required to meet the 27 credit hour minimum in the Distribution Area of General Studies.

- Aesthetics [link](http://catalog.unk.edu/undergraduate/general-studies/general-studies-courses/aesthetics) 3
- Humanities [link](http://catalog.unk.edu/undergraduate/general-studies/general-studies-courses/humanities) 6
- Social Sciences [link](http://catalog.unk.edu/undergraduate/general-studies/general-studies-courses/social-sciences) 6
- Natural Sciences [link](http://catalog.unk.edu/undergraduate/general-studies/general-studies-courses/natural-sciences) 8

Including:

- PHYS 275 & 275L General Physics I (Calculus) and General Physics I (Calculus) Laboratory 5
- PHYS 346 Modern Physics I 4
- PHYS 410 Mathematical Techniques in Physics I 3

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### Major Option

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#### BS Science-related course requirements

- CHEM 160 & 160L General Chemistry and General Chemistry Laboratory 4
- CHEM 161 & 161L General Chemistry and General Chemistry Laboratory 4

### Major Option

Complete all required courses 62

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**Unrestricted electives**

Needed to reach 120 credit hour minimum 1

Total Credit Hours 120

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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

**Physics Comprehensive (Engineering Emphasis)**

**Requirements**

- PHYS 276 & 276L General Physics II (Calculus) and General Physics II (Calculus) Laboratory 5
- PHYS 346 Modern Physics I 4
- PHYS 410 Mathematical Techniques in Physics I 3

**Physics Comprehensive (Engineering Emphasis) Electives**

Select 6 credit hours of the following:

- PHYS 402 Analytic Mechanics
- PHYS 407 Electricity & Magnetism
- PHYS 419 Quantum Mechanics
- PHYS 420 Advanced Physics Laboratory
- PHYS 430 Optics
- PHYS 440 Thermodynamics and Statistical Mechanics

**Physics Comprehensive (Engineering Emphasis)**

**Math Requirements**

- MATH 202 Calculus II with Analytic Geometry 5
- MATH 260 Calculus III 5
- MATH 305 Differential Equations 3

**Physics Comprehensive (Engineering Emphasis)**

**Engineering Requirements**

- ENGR 101 Introduction to Engineering 3

Select 11 credit hours of the following:

- ENGR 130 Computer Aided Drafting for Mechanical Engineering
- ENGR 215 Engineering Circuits I
- ENGR 216 Engineering Circuits II
- ENGR 223 Engineering Statics
- ENGR 325 Mechanics of Materials
- ENGR 373 Engineering Dynamics

Students must take 17 credit hours of engineering classes at 300 level or above from an ABET (Accreditation Board of Engineering and Technology) accredited university.

Total Credit Hours 62