## PHYSICS COMPREHENSIVE - ENGINEERING EMPHASIS, BACHELOR OF SCIENCE

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

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<th>Code</th>
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### General Studies

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

Foundational Core courses (http://catalog.unk.edu/undergraduate/general-studies/general-studies-courses) 14

**Including:**

- MATH 115 Calculus I with Analytic Geometry 1

**Portal**

Select one course numbered 188 (http://catalog.unk.edu/undergraduate/general-studies/general-studies-courses/portal-course) 3

**Distribution**

- ENG 101 Introduction of Academic Writing 3

**Aesthetics** (http://catalog.unk.edu/undergraduate/general-studies/general-studies-courses/aesthetics) 3

**Humanities** (http://catalog.unk.edu/undergraduate/general-studies/general-studies-courses/humanities) 6

**Social Sciences** (http://catalog.unk.edu/undergraduate/general-studies/general-studies-courses/social-sciences) 6

**Natural Sciences** (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

**Analytical and Quantitative Thought** (http://catalog.unk.edu/undergraduate/general-studies/general-studies-courses/analytical-quantitative-thought) 3

**Wellness** (http://catalog.unk.edu/undergraduate/general-studies/general-studies-courses/wellness) 0

**Capstone**

Select one course numbered 388 (http://catalog.unk.edu/undergraduate/general-studies/general-studies-courses/capstone-course) 3

### BS Science-related course requirements

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

### Major Option

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#### Physics Comprehensive (Engineering Emphasis) Requirements

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

#### 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. 17

### Total Credit Hours

120

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

- MATH 102
- MATH 103

Complete all required courses 62

Unrestricted electives Needed to reach 120 credit hour minimum 1

Total Credit Hours 120