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

*Portal*

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

**Distribution**

- 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)*

Including:

- CSIT 112  Programming in C

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

Needed to reach 27 credit hour minimum in Distribution 1

**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 & 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

**Unrestricted electives**

Needed to reach 120 credit hour minimum 3

**Total Credit Hours**

120

**Major Option**

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**Physics Comprehensive (Engineering Emphasis) Requirements**

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| 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: 6

- 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**

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

**Physics Comprehensive (Engineering Emphasis) Engineering Requirements**

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| ENGR 101 | Introduction to Engineering                | 3

Select 11 credit hours of the following: 11

- 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**

62

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

- MATH 102
- MATH 103