



Pittsburg State University

College of Arts and Sciences Program Guide

Degree: Bachelor of Science
 Major: Physics
 Emphasis/Option: Engineering Technology
 Minor (if required):

As of Fall 2016

General Education Component (36-41 hours)

Basic Skills** (9 hours)

General Education Electives (27-32 hours)

Sciences** (4-5 hours)

Social Studies (3 hours)

Political Studies (3 hours)

Producing and Consuming** (2-3 hours)

Fine Arts and Aesthetic Studies (2-3 hours)

Cultural Studies (3 hours)

Health and Well-Being (4-6 hours)

Human Heritage (6 hours)

** MATH 150, CIS 230 or CIS 240, and PHYS 104/130 or PHYS 100/130 required in the major partially fulfill General Education requirements.

Core Physics Courses (39 hours)

(a) Physics

| | |
|--|---|
| PHYS 500: Mathematical Physics | 3 |
| PHYS 510: Analytical Mechanics I | 3 |
| PHYS 512: Electricity and Magnetism I | 3 |
| PHYS 516: Modern Physics I | 3 |
| PHYS 530: Intermediate Physics Laboratory (____) | 3 |
| PHYS 699: Senior Review and Assessment | 1 |

(b) Other

| | |
|---|---|
| CHEM 215: General Chemistry I | 3 |
| and CHEM 216: General Chemistry I Laboratory | 2 |
| CHEM 225: General Chemistry II | 3 |
| and CHEM 226: General Chemistry II Laboratory | 2 |
| MATH 150: Calculus I | 5 |
| MATH 155: Calculus II | 5 |
| CIS 230: Visual Basic Programming | 3 |
| or CIS 240: C ++ Programming | 3 |

Engineering Technology Emphasis (21-22 hours)

(a) Physics

| | |
|--|---|
| PHYS 104: Engineering Physics I | 4 |
| or PHYS 100: College Physics I | 4 |
| and PHYS 130: Elementary Physics Laboratory I | 1 |
| PHYS 105: Engineering Physics II | 4 |
| or PHYS 101: College Physics II | 4 |
| and PHYS 131: Elementary Physics Laboratory II | 1 |

(b) Physics Electives

Six hours of physics electives with course numbers greater than 500 subject to the approval of the Physics Department.

(c) Other (Choose two from the following)

| | |
|---|---|
| EET 349: Linear Integrated Circuits | 3 |
| EET 447: Communications Theory and Circuits | 3 |
| EET 449: Programmable Logic Devices | 3 |
| EET 546: Electronic Controls | 3 |
| MECET 420: Kinematics | 2 |
| MECET 423: Mechanics of Materials | 3 |
| MECET 524: Fluid Mechanics | 3 |
| MECET 682: Heat Transfer | 3 |

The BS IN Physics with an Emphasis in Engineering Technology is an ideal double major with a BSET in either Electronics Engineering Technology or Mechanical Engineering Technology.

GENERAL EDUCATION REQUIREMENTS

(36-41 hrs.)

Basic Skills **9 hours**

| | | | |
|---------|-----|---------------------------------------|---|
| COMM | 207 | Speech Communication..... | 3 |
| ENGL | 101 | English Composition..... | 3 |
| ENGL | 190 | Honors English Composition..... | 3 |
| OR ENGL | 299 | Introduction to Research Writing..... | 3 |

Sciences **4-5 hours**

Natural Sciences (*Select one*)

| | | | |
|------|---------|-------------------------------------|---|
| BIOL | 111/112 | General Biology and Laboratory..... | 5 |
| BIOL | 113 | Environmental Life Science..... | 4 |
| BIOL | 211 | Principles of Biology I..... | 4 |

Social Studies **3 hours**

| | | | |
|-----|-----|--------------------------------------|---|
| SOC | 100 | Introduction to Sociology..... | 3 |
| WGS | 200 | Introduction to Women's Studies..... | 3 |

Political Studies (*Select one*) **3 hours**

| | | | |
|------|-----|---|---|
| POLS | 101 | U.S. Politics..... | 3 |
| POLS | 103 | Comparative Political Institutions..... | 3 |

Producing and Consuming **2-3 hours**

(*Select one from two of the following three categories*)

Economy

| | | | |
|------|-----|--|---|
| ECON | 191 | Issues in Today's Economy..... | 3 |
| FCS | 230 | Consumer Ed. and Personal Finance..... | 3 |

Technology

| | | | |
|------|-----|--|---|
| EET | 247 | Computer Programming for Electronic Sys..... | 3 |
| GT | 190 | Introduction to Technological Systems..... | 2 |
| GT | 350 | Technology and Civilization..... | 3 |
| EDTH | 330 | Technology for the Classroom..... | 3 |
| TE | 551 | Integrated Technology for Educators..... | 3 |
| TM | 350 | Societal Influence of Technology..... | 3 |

Fine Arts and Aesthetic Studies (*Select one*)..... **2-3 hours**

| | | | |
|-------|-----|---|---|
| ART | 155 | Printmaking and Paper Arts..... | 3 |
| ART | 178 | Introduction to the Visual Arts..... | 3 |
| ART | 188 | The Designed World..... | 3 |
| ART | 217 | Crafts I..... | 3 |
| ART | 222 | Jewelry Design I..... | 3 |
| ART | 233 | Drawing I..... | 3 |
| ART | 244 | Ceramics I..... | 3 |
| ART | 266 | Sculpture I..... | 3 |
| ART | 277 | Painting I..... | 3 |
| ART | 288 | Introduction to Art History I..... | 3 |
| ART | 289 | Introduction to Art History II..... | 3 |
| ART | 311 | Art Education..... | 3 |
| ART | 351 | Printmaking, Papermaking, Bookarts and the Letterpress..... | 3 |
| ART | 430 | Automotive: Art and Design..... | 3 |
| COMM | 105 | Performance Appreciation..... | 3 |
| COMM | 205 | Performance Studies..... | 3 |
| COMM | 295 | Theatre History..... | 3 |
| ENGL | 250 | Introduction to Creative Writing..... | 3 |
| HHP | 151 | Dance Appreciation..... | 3 |
| MUSIC | 120 | Music Appreciation..... | 3 |
| MUSIC | 121 | Introduction to Music Literature..... | 2 |

Cultural Studies (*Select one*) **3 hours**

| | | | |
|------|-----|--|---|
| ANTH | 101 | Introduction to Cultural Anthropology..... | 3 |
| MLL | 114 | Chinese Language and Culture I..... | 3 |
| MLL | 124 | French Language and Culture I..... | 3 |
| MLL | 154 | Spanish Language and Culture I..... | 3 |
| MLL | 184 | Russian Language and Culture I..... | 3 |
| MLL | 194 | Korean Language and Culture I..... | 3 |
| GEOG | 106 | World Regional Geography..... | 3 |
| GEOG | 300 | Elements of Geography..... | 3 |
| GEOG | 304 | Human Geography..... | 3 |
| WGS | 399 | Global Women's Issues..... | 3 |

Health and Well Being **4-6 hours**

Psychological

| | | | |
|-------|-----|-------------------------|---|
| PSYCH | 155 | General Psychology..... | 3 |
|-------|-----|-------------------------|---|

Physical (*Select one*)

| | | | |
|------|-----|------------------------------------|---|
| FCS | 203 | Nutrition and Health..... | 3 |
| FCS | 301 | Nutrition..... | 3 |
| HHP | 150 | Lifetime Fitness Concepts..... | 1 |
| NURS | 303 | Introduction to Public Health..... | 3 |

Human Heritage **6 hours**

(*Select one from two of the following three categories*)

History

| | | | |
|------|-----|---------------------------------|---|
| HIST | 101 | World History to 1500..... | 3 |
| HIST | 102 | World History from 1500..... | 3 |
| HIST | 201 | American History to 1865..... | 3 |
| HIST | 202 | American History from 1865..... | 3 |

Literature

| | | | |
|------|-----|--------------------------------|---|
| ENGL | 113 | General Literature..... | 3 |
| ENGL | 114 | General Literature(Genre)..... | 3 |
| ENGL | 116 | General Literature(Theme)..... | 3 |
| ENGL | 120 | Literature and Film..... | 3 |
| ENGL | 315 | Mythology..... | 3 |
| ENGL | 320 | Literature and Film..... | 3 |

Philosophy

| | | | |
|------|-----|-------------------------------------|---|
| PHIL | 103 | Introduction to Philosophy..... | 3 |
| PHIL | 105 | Ethics..... | 3 |
| PHIL | 111 | Ethics: Applied Emphasis(____)..... | 3 |
| PHIL | 112 | Biomedical Ethics..... | 3 |
| PHIL | 113 | Business Ethics..... | 3 |
| PHIL | 114 | Environmental Ethics..... | 3 |
| PHIL | 207 | Critical Thinking..... | 3 |
| PHIL | 208 | Logic..... | 3 |
| PHIL | 231 | World Religions..... | 3 |

Notes

NOTE: The information contained herein is intended to be used for the planning of a student's academic program and does not constitute a contract. While this guide was prepared with the latest information, courses, graduation requirements, and curricula are subject to change.

When a student attains 85 semester hours of credit (including current enrollment) the student must apply for a degree check in the Office of the Registrar (Degree Checking Section), Room 102 Russ Hall.

MINIMUM GENERAL REQUIREMENTS: The minimum requirements for graduation include 124 semester hours of which 60 hours must be from a four year university. In addition, 45 semester hours must be upper division and 30 hours in residence at PSU (including 24 of the last 30). Minimum GPA for non-education degree is 2.0 overall [2.0 in major], secondary education degree is 2.5 overall [2.75 in major], and early/late childhood/unified degree is 2.80 overall [3.0 in major]. A minimum GPA of 2.0 in any minor and in residence coursework is required. General Education and all degree requirements are provided in the online catalog. Refer to individual departments for specific requirements.