Physics, Engineering Physics Concentration, BS Requirements:

- Physics, Engineering Physics Concentration, BS degree requires 128 credit hours.
- 39 of 128 credit hours must be taken at 300 level or higher (39 credits includes courses taken at the 300+ level in major, minor (if chosen), Pre-professional area and electives).
- 12 credit hours of 300 level and above must be taken in the major or 6 credit hours in the major and 6 credit hours in the minor (if chosen).
- 12 of the last 18 credit hours must be taken at UAH, with an overall 25% of coursework taken at UAH.
- Unless otherwise noted a C- or better is required for all College of Science prerequisite courses.
- No more than 64 credit hours from a two-year college can be applied toward a UAH degree.
- For graduation application instructions, see here (http://catalog.uah.edu/undergrad/policies-procedures/application-graduation).

Degree Requirements

<table>
<thead>
<tr>
<th>Freshman Composition</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>EH 101 COLLEGE WRITING I</td>
<td></td>
</tr>
<tr>
<td>EH 102 COLLEGE WRITING II</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Humanities and Fine Arts</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fine Arts: Choose one</td>
<td></td>
</tr>
<tr>
<td>ARH 100 ARH SURV:ANCIENT-MEDIEVAL</td>
<td></td>
</tr>
<tr>
<td>ARH 101 ARH SURV:RENAISSANCE-MODERN</td>
<td></td>
</tr>
<tr>
<td>ARH 103 ARH SUR:NON-WESTERN TRADITIONS</td>
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</tr>
<tr>
<td>ARS 160 DRAWING: FOUNDATIONS</td>
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</tr>
<tr>
<td>TH 122 THEATRE APPRECIATION</td>
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</tr>
<tr>
<td>MU 100 INTRO TO MUSIC LITERATURE</td>
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<table>
<thead>
<tr>
<th>Literature: Choose one</th>
</tr>
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<tbody>
<tr>
<td>EH 207 READINGS LITERATURE/CULTURE I</td>
</tr>
<tr>
<td>or EH 242 MYTHOLOGY</td>
</tr>
<tr>
<td>EH 208 READINGS LITERATURE/CULTURE 2</td>
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<table>
<thead>
<tr>
<th>Speech</th>
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<tbody>
<tr>
<td>CM 113 Intro to Rhetorical Communication</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Humanities, 2nd Fine art or 2nd Literature: Choose one</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHL 101 INTRODUCTION TO PHILOSOPHY</td>
</tr>
<tr>
<td>PHL 102 INTRO TO ETHICS</td>
</tr>
<tr>
<td>PHL 150 TECH, SCIENCE &amp; HUMAN VALUES</td>
</tr>
<tr>
<td>PHL 201 INTRODUCTION TO LOGIC</td>
</tr>
<tr>
<td>Any WLC course 100 or 200 level</td>
</tr>
<tr>
<td>WGS 200 INTRO WOMEN'S &amp; GENDER STUDIES</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Mathematics and Science</th>
<th>12</th>
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</thead>
<tbody>
<tr>
<td>Mathematics</td>
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<tr>
<td>MA 171 CALCULUS A</td>
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</table>

<table>
<thead>
<tr>
<th>Natural Science sequence</th>
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<tbody>
<tr>
<td>CH 121 &amp; CH 125 GENERAL CHEMISTRY I and GENERAL CHEMISTRY LAB I</td>
</tr>
<tr>
<td>CH 123 &amp; CH 126 GENERAL CHEMISTRY II and GENERAL CHEMISTRY LAB II</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>History and Social Behavioral Sciences</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>History: Choose one</td>
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</tr>
<tr>
<td>HY 103 WORLD HISTORY TO 1500</td>
<td></td>
</tr>
<tr>
<td>HY 104 WORLD HISTORY SINCE 1500</td>
<td></td>
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</tbody>
</table>

^1^ Indicates courses chosen at the 200 level or above.
^2^ Students must take a minimum of 24 upper-level credits in mathematics.
^3^ One additional hour of speech is required for graduation.
^4^ Students must complete the Natural Science sequence before enrolling in Calculus.
## Physics, BS - Engineering Physics Concentration

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>HY 221</td>
<td>UNITED STATES TO 1877</td>
</tr>
<tr>
<td>HY 222</td>
<td>UNITED STATES SINCE 1877</td>
</tr>
</tbody>
</table>

**Social and Behavioral Sciences: Choose two**  
6

- ECN 142 PRINC OF MACROECONOMICS
- ECN 143 PRINC OF MICROECONOMICS
- PSC 101 INTRO TO AMERICAN GOVERNMENT
- PSC 102 INTRO TO COMPARATIVE POLITICS
- PSC 260 INTRODUCTION TO INTERNATIONAL RELATIONS
- GY 105 WORLD REGIONAL GEOGRAPHY
- GY 110 PRINCIPLES OF HUMAN GEOGRAPHY
- GS 200 GLOBAL SYSTEMS AND CULTURES
- SOC 100 INTRO TO SOCIOLOGY
- SOC 102 ANALYSIS OF SOCIAL PROBLEMS
- SOC 105 INTRO CULTURAL ANTHROPOLOGY
- SOC 150 SOCIOLOGICAL PERSP TECH & SCI
- PY 101 GENERAL PSYCHOLOGY I
- PY 201 LIFE-SPAN DEVELOPMENT

**2nd History or 3rd Social and Behavioral Science: Choose one**  
3

**Pre-Professional**  
23-24

**Computer Science**  
3
- CS 102 INTRO TO C PROGRAMMING

**Technical Writing**  
3
- EH 301 TECHNICAL WRITING

**Additional Science or Engineering course: Choose one**  
3-4

- AST 106 EXPLORING THE COSMOS I  
  & 106L ASTRONOMY LABORATORY
- BYS 119 PRINCIPLES OF BIOLOGY  
  & 119L LABORATORY
- CH 101 INTRO TO CHEMISTRY  
  & 105 INTRO CHEMISTRY LAB
- CS 121 COMPUTER SCIENCE I
- ESS 103 ENVIRONMENTAL EARTH SCIENCE  
  & 103L LABORATORY
- ESS 111 CLIMATE AND GLOBAL CHANGE  
  & 111L LABORATORY
- MA 112 PRECALCULUS ALGEBRA
- MA 113 PRECALCULUS TRIGONOMETRY
- MA 281 ELEMENTS OF STATISTICAL ANALYSIS

**Additional Required Mathematics**  
14
- MA 172 CALCULUS B
- MA 201 CALCULUS C
- MA 238 APPL DIFFERENTIAL EQUATIONS
- MA 244 INTRO TO LINEAR ALGEBRA

**Physics Core**  
28
- PH 110 FRONTIERS IN SCIENCE
- PH 111 GEN PHYSICS W/ CALCULUS I  
  & PH 114 GENERAL PHYSICS LAB I
- PH 112 GEN PHYSICS W/ CALC II  
  & PH 115 GENERAL PHYSICS LAB II
The University of Alabama in Huntsville

PH 113  GEN PHYSICS W/CALC III
& PH 116  and GENERAL PHYSICS LAB III
PH 251  SPECIAL RELATIVITY
PH 301  INTERMEDIATE MECHANICS
PH 305  MATH METHODS IN PHYSICS
PH 351  INTRODUCTION TO MODERN PHYSICS
PH 499  PHYSICS PRACTICUM

Physics Elective course
PH/OPT/AST Elective 300+ level or higher course

Engineering Physics Concentration Requirements
Engineering Courses 300+ level or higher

Elective Courses
Elective courses. 6 credits of the 16-17 elective credits must be taken at the 300+ level or higher.
Additional Elective courses 100+ level to reach 128 credit hours. Electives can be taken from any department and do not have to be taken in your major or minor. No more than 4 credit hours of 100 level HPE courses can count toward degree requirements.

Total Semester Hours
128

1 Students must take one literature and one history course. Students must also take either a second literature or history course to complete a sequence. (EH 207 + EH 208, EH 209 + EH 210, EH 242 + EH 208, EH 242 + EH 210, HY 103 + HY 104, or HY 221 + HY 222)
2 Based on Math placement, prerequisite MA 112 and/or MA 113 Mathematics courses may be required.
3 No more than 6 credit hours can be taken in a single discipline.
4 For choices see the World Languages and Cultures (http://catalog.uah.edu/undergrad/colleges-departments/arts-humanities-social-sciences/foreign-languages-literatures) department.

Sample Four-Year plan for Physics, Engineering Physics Concentration, BS degree:
Note: This is only an example and variations are possible.

Year 1

Fall
EH 101  COLLEGE WRITING I  3
MA 171  CALCULUS A  4
PH 110  FRONTIERS IN SCIENCE  3
CH 121  GENERAL CHEMISTRY I  4
& CH 125  and GENERAL CHEMISTRY LAB I
FYE 101  CHARGER SUCCESS  1
Elective  1

Semester Hours: 16

Electives can be taken from any department and do not have to be taken in your major or minor. No more than 4 credit hours of 100 level HPE courses can count toward degree requirements.

Spring
EH 102  COLLEGE WRITING II  3
MA 172  CALCULUS B  4
PH 111  GEN PHYSICS W/CALCULUS I  4
& PH 114  and GENERAL PHYSICS LAB I
CH 123  GENERAL CHEMISTRY II  4
& CH 126  and GENERAL CHEMISTRY LAB II
Elective  1

Semester Hours: 16

Electives can be taken from any department and do not have to be taken in your major or minor. No more than 4 credit hours of 100 level HPE courses can count toward degree requirements.

Year 2
### Year 1

#### Fall
- **PH 112** & **PH 115**: GEN PHYSICS W/CALC II and GENERAL PHYSICS LAB II  
- **MA 201**: CALCULUS C
- **CS 102**: INTRO TO C PROGRAMMING
- Fine art 3
  - See Requirements tab for approved list.
- Literature 3
  - See Requirements tab for approved list.

**Term Semester Hours:** 17

#### Spring
- **PH 113** & **PH 116**: GEN PHYSICS W/CALC III and GENERAL PHYSICS LAB III
- **PH 251**: SPECIAL RELATIVITY
- **PH 305**: MATH METHODS IN PHYSICS
- **MA 238**: APPL DIFFERENTIAL EQUATIONS
- Elective 3
- Elective 3

Electives can be taken from any department and do not have to be taken in your major or minor. No more than 4 credit hours of 100 level HPE courses can count toward degree requirements.

**Term Semester Hours:** 17

### Year 2

#### Fall
- **PH 351**: INTRODUCTION TO MODERN PHYSICS
- **MA 244**: INTRO TO LINEAR ALGEBRA
- Additional Science or Engineering course 3-4
  - See Requirements tab for approved list.
- Social and Behavioral science 3
  - See Requirements tab for approved list.
- Humanities, 2nd Fine art or 2nd Literature 3
  - See Requirements tab for approved list.

**Term Semester Hours:** 15-16

#### Spring
- **PH 301**: INTERMEDIATE MECHANICS
- **PH/OPT/AST 300+ level or higher course**: 3
- Social and Behavioral science 3
  - See Requirements tab for approved list.
- **CM 113**: Intro to Rhetorical Communication 3
- Engineering elective course 3
- Elective 1

Electives can be taken from any department and do not have to be taken in your major or minor. No more than 4 credit hours of 100 level HPE courses can count toward degree requirements.

**Term Semester Hours:** 16

### Year 3

#### Fall
- Engineering elective course 3
- Engineering elective course 3
- **EH 301**: TECHNICAL WRITING 3

**Term Semester Hours:** 16

### Year 4
Elective 300+ level or higher course 3
Elective 4

Electives can be taken from any department and do not have to be taken in your major or minor. No more than 4 credit hours of 100 level HPE courses can count toward degree requirements.

<table>
<thead>
<tr>
<th>Term</th>
<th>Semester Hours:</th>
</tr>
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<tbody>
<tr>
<td>Spring</td>
<td>16</td>
</tr>
<tr>
<td>PH 499</td>
<td>PHYSICS PRACTICUM 3</td>
</tr>
<tr>
<td>Engineering elective course</td>
<td>3</td>
</tr>
<tr>
<td>Engineering elective course</td>
<td>3</td>
</tr>
<tr>
<td>Elective 300+ level or higher course</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Electives can be taken from any department and do not have to be taken in your major or minor. No more than 4 credit hours of 100 level HPE courses can count toward degree requirements.

<table>
<thead>
<tr>
<th>Term Semester Hours:</th>
<th>15</th>
</tr>
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<tbody>
<tr>
<td>Total Semester Hours:</td>
<td>128-129</td>
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</table>