

**CURRICULUM GUIDE**  
**Physics, B.S. (Engineering Physics Concentration)**  
**2015-2016**

Website: [www.physics.eku.edu](http://www.physics.eku.edu)  
 Email Contact: [anthony.blose@eku.edu](mailto:anthony.blose@eku.edu)



Department of Physics & Astronomy  
 521 Lancaster Ave.  
 3140 New Science Bldg.  
 Richmond, KY 40475  
 859-622-1521

The schedule below is an **EXAMPLE** of how you can arrange your class schedule.  
 Please consult your advisor for specific changes that may need to be made.

	Fall Semester		Spring Semester	
<b>Freshman Year</b>	ASO 100P	1	MAT 244 <i>or</i> 244H	4
	<sup>6</sup> CHE 111 ( <i>fulfills Gen. Ed. 4</i> )	3	CHE 112	3
	CHE 111L	1	CHE 112L	1
	<sup>§</sup> <sup>6</sup> MAT 234 <i>or</i> 234H ( <i>fulfills Gen. Ed. 2</i> )	4	Gen. Ed. 1B ( <i>ENG 102</i> )	3
	Gen. Ed. 1A ( <i>ENG 101</i> )	3	Wellness	3
	Gen. Ed. 3A ( <i>Arts</i> )	3		
	<b>TOTAL</b>	<b>15</b>	<b>TOTAL</b>	<b>14</b>
<b>Sophomore Year</b>	MAT 254 <i>or</i> 254H	4	MAT 353	3
	PHY 201	5	PHY 202	5
	Gen. Ed. 1C ( <i>Oral Comm.</i> )	3	PHY 221	3
	Gen. Ed. 3B ( <i>Humanities</i> )	3	Free Elective ( <i>upper division</i> )	3
	<b>TOTAL</b>	<b>15</b>	<b>TOTAL</b>	<b>14</b>
<b>Junior Year</b>	PHY 302 ( <i>302W recommended</i> )	4	PHY 460	4
	PHY 310	3	PHY 315	4
	PHY 375	3	CSC 174	3
	PHY 406 ( <i>ACCT</i> )	3	Gen. Ed. 5B ( <i>Soc. &amp; Behav. Sci.</i> )	3
	Gen. Ed. 5A ( <i>History</i> )	3		
	<b>TOTAL</b>	<b>16</b>	<b>TOTAL</b>	<b>14</b>
<b>Senior Year</b>	EET 252	3	† Restricted Elective ( <i>upper division</i> )	3
	† Restricted Elective	3	Gen. Ed. 6 ( <i>Diversity</i> )	3
	Gen. Ed. 6 ( <i>Diversity</i> )	3	Gen. Ed. 4 ( <i>Nat. Sci.</i> )	3
	Free Elective ( <i>upper division</i> )	4	Free Elective ( <i>upper division</i> )	4
	Free Elective ( <i>upper division</i> )	3	Free Elective ( <i>upper division</i> )	3
	<b>TOTAL</b>	<b>16</b>	<b>TOTAL</b>	<b>16</b>
<b>TOTAL HOURS TO DEGREE COMPLETION</b>				<b>120</b>

\* **PREREQUISITES:** Consult with your advisor and/or the University catalog regarding prerequisites for upper division PHY courses. MAT 122, 234, and/or 244; CHE 111/111L; EET251, 252 and/or 257. See University catalog for details.  
<sup>§</sup> A preparatory course in mathematics (MAT 122) may be required before admission to MAT 234.

**Upper division courses:** All students are required to have a minimum of 42 hrs. upper division (300 level or above) courses distributed throughout major/Supporting/Gen Ed/Free Electives categories. If 300 level classes are taken for Gen. Ed., they can be used to fulfill the 42 hours instead of upper division free electives.

Refer to the University Catalog at <http://www.catalogs.eku.edu/> regarding University and General Education Requirements. All baccalaureate degree seeking students who enter the University are required to successfully complete one writing intensive course following completion of the ENG 102, ENG 105, or HON 102/103. Writing intensive courses are designated with the suffix "W" following the course prefix and number (e.g. HUM 300W).

**Applied Critical & Creative Thinking (ACCT) Requirement:** Physics majors will select one of the following: PHY 349, 349 A-N, 406, 410, 470, HON 420, a program-approved Leadership Experience, or a program-approved Study Abroad experience. (Credit hours are incorporated into program requirements.)

Course Number	Course Name
<b>GENERAL EDUCATION &amp; UNIVERSITY REQUIREMENTS (40)</b>	
ASO 100P	Student Success Seminar for Physics (1)
<b>CORE COURSE REQUIREMENTS (24)</b>	
PHY 201	University Physics I (5)
PHY 202	University Physics II (5)
PHY 302/302W	Modern Physics (4)
PHY 310	Theoretical Methods in Physics
PHY 406/406W	Advanced Physics Laboratory
PHY 460	Classical Mechanics (4)
<b>ENGINEERING PHYSICS REQUIREMENTS (19)</b>	
EET 252	Digital Electronics
PHY 221	Statics
PHY 315	Introductory to Electrical Circuits (4)
PHY 375	Thermodynamics
† PLUS SIX (6) HOURS selected from ( <i>restricted elective</i> ):	
* CSC 300	Introduction to Numerical Methods
* EET 253	Microprocessor Control Systems
* EET 257	Circuits and Electronic Devices
* EET 350	Industrial Electronics I
PHY 303	Introduction to Laser Physics
PHY 402	Physical Optics
PHY 410	Independent Study in Physics (1-6)
STA 270	Applied Statistics I
<b>SUPPORTING COURSE REQUIREMENTS (20)</b>	
[ <sup>6</sup> CHE 111	General Chemistry I
[* CHE 111L	General Chemistry Lab I (1)
[* CHE 112	General Chemistry II
[* CHE 112L	General Chemistry Lab II (1)
† CSC 174	Introduction to FORTRAN
<sup>6</sup> MAT 234 <i>or</i>	Calculus I (4)
<sup>6</sup> MAT 234H	Honors Calculus I (4)
MAT 244 <i>or</i>	Calculus II (4)
MAT 244H	Honors Calculus II (4)
MAT 254 <i>or</i>	Calculus III (4)
MAT 254H	Honors Calculus III (4)
MAT 353	Differential Equations
<i>Bracketed items must be taken concurrently</i>	
‡ or any approved programming language course.	
<b>FREE ELECTIVES (17)</b>	

All courses listed above are worth 3 credit hrs. unless otherwise noted.

<sup>6</sup> Denotes that 3 credit hours from this course are/can be applied to fulfill a Gen. Ed. requirement. Courses used to fulfill Gen. Ed. 4 must have different prefixes.