

**Department of Physics, Geology and Engineering Technology  
Northern Kentucky University**

**MAJOR: Physics, Bachelor of Science(4 year plan for students with a catalog in Fall 2016 or after)**

<b>FIRST YEAR</b>	Fall Semester		Spring Semester	
<p>Get to know your faculty. Talk with them about research opportunities.</p> <p>Attend Career Development Center workshops to learn how to build your resume.</p> <p>Join the Physics Club.</p>	MAT 129 Calculus I	4	MAT 229 Calculus II	5
	PHY 220 University Physics with Lab I	4	PHY 224 University Physics with Lab III <sup>1</sup>	4
	Gen Ed Written Communication I: ENG 101 College Writing <sup>2</sup>	3	Gen Ed Oral Communication: CMST 101 Public Speaking <sup>2</sup>	3
	General Education Course	3	General Education Course	3
	<b>TOTAL</b>	<b>14</b>	<b>TOTAL</b>	<b>15</b>
<b>SECOND YEAR</b>	Fall Semester		Spring Semester	
<p>Do a preliminary audit at the end of the year to be sure you are on track to graduate.</p>	MAT 329 Calculus III	4	MAT 325 Differential Equations	3
	PHY 222 University Physics with Lab II <sup>1</sup>	4	PHY 360/310 Thermodynamics/Dynamics	3
	PHY 361 Modern Physics I	3	Gen Ed Written Communication II: ENG 291 Advanced College Writing <sup>2</sup>	3
	PHY 300 Intermediate Physics Laboratory	2	PHY 301 Advanced Physics Laboratory	2
	General Education Course	3	PHY 320/315/AST 310 Optics/Astrophysics/AST Techniques <sup>4</sup>	3
	<b>TOTAL</b>	<b>16</b>	<b>TOTAL</b>	<b>14</b>
<b>THIRD YEAR</b>	Fall Semester		Spring Semester	
<p>Take a leadership role in the Physics Club.</p> <p>Consider being a physics tutor with the NKU Learning Assistance Programs.</p> <p>Engage in research with faculty by taking PHY 492 as an elective.</p>	MAT 330/PHY 330 Mathematical Physics <sup>5</sup>	3	PHY 310/360 Dynamics/Thermodynamics	3
	PHY 320/315/AST 310 Optics/Astrophysics/AST Techniques <sup>4</sup>	3	PHY 410/420/460 Electromagnetic Thy/ Modern Phy II/Quantum	3
	CHE 120 General Chemistry I	3	CHE 121 General Chemistry II	3
	CHE 120L General Chemistry Lab I	1	CHE 121L General Chemistry Lab II	1
	MAT 234 Linear Algebra or CSC 270 Mathematical Software Programming <sup>5</sup>	3	General Education Course	3
	General Education Course	3	PHY 320/315/AST 310 Optics/Astrophysics/AST Techniques <sup>4</sup>	3

	<b>TOTAL</b>	<b>16</b>	<b>TOTAL</b>	<b>16</b>
<b>FOURTH YEAR</b>	<b>Fall Semester</b>		<b>Spring Semester</b>	
If you're considering graduate school, prepare for the admission tests (e.g., GRE). Take the test.  Develop your resume.  Begin your job search.	PHY 410/420/460 Electromagnetic Thy/ Modern Phy II/Quantum	3	PHY 410/420/460 Electromagnetic Thy/ Modern Phy II/Quantum	4
	General Education Course	3	PHY 494 Physics Seminar	1
	PHY 405 Classical Mechanics	3	Elective (300 or 400 level) <sup>3</sup>	3
	Elective	3	Elective	3
	Elective	3	Elective	3
	<b>TOTAL</b>	<b>15</b>	<b>TOTAL</b>	<b>14</b>
	<b>GRAND TOTAL OF CREDITS</b>			<b>120</b>
<p>Notes: This plan is ONE way in which you can complete your degree program in 4 years; it is not the only way. It assumes that you do not have to take any developmental courses (courses numbered below 100), that you start with MAT 129, that you are not a transfer student, and you are beginning in the fall semester.</p> <p><sup>1</sup>PHY 222 and PHY 224 may be taken in any order after completion of PHY 220 with a grade of C- or better. PHY 222 is taught only fall semesters; PHY 224 is taught only spring semesters.</p> <p><sup>2</sup>Regarding General Education, as shown on this plan, the Physics program highly recommends that you complete one oral and one written communication class during your first year and the second written communication class in your second year. The Natural Sciences and the mathematics/statistics requirements will be satisfied by the required physics, math, and chemistry courses for the major. How you sequence the remainder of the General Education program is up to you.</p> <p><sup>3</sup>The Physics BS requires 6 elective hours at the 300 level or above. Note: the offering of the following courses is once every 3 semesters: PHY 320 (Optics), PHY 410 (Electromagnetic Theory), PHY 405 (Classical Mechanics), PHY 420 (Modern Physics II); PHY 460 (Quantum Mechanics). This regular rotation of courses is fixed so that physics majors can plan in advance their schedules and graduate after completing 4 years at NKU. See the up-to-date offering schedule on the web site (<a href="http://physics.nku.edu">physics.nku.edu</a>).</p> <p><sup>4</sup>Assumes a minor in Mathematical Sciences (for students majoring in physical sciences). Only one course is needed beyond those required by the Physics program to obtain a minor in Mathematical Sciences. MAT 330/PHY 330 gives credit towards both the math minor and physics major.</p>				