

SAMPLE 4-YEAR PLAN: PHYSICS B.S.

Northern Kentucky University

MAJOR: Physics

This is **one way** a student can complete this program in four years if the student requires no remedial courses.

FIRST YEAR	Fall Semester		Spring Semester	
	Get to know your faculty. Talk with them about research opportunities.	MAT 129 Calculus I	4	MAT 229 Calculus II
Attend Career Services workshops to learn how to build your resume.	PHY 220 University Physics with Laboratory I	4	PHY 224 University Physics with Laboratory III ¹	4
	Gen Ed: Communication; Written I; ENG 101 College Writing ²	3	Gen Ed: Communication; Oral; CMST 101 Public Speaking ²	3
Join the Physics club.	Gen Ed	3	Gen Ed	3
	TOTAL	14	TOTAL	15
SECOND YEAR	Fall Semester		Spring Semester	
Do a preliminary audit at the end of the year to be sure you are on track to graduate.	MAT 329 Calculus III	4	MAT 325 Differential Equations	3
	PHY 222 University Physics with Laboratory II ¹	4	PHY 360 Thermodynamics/PHY 310 Dynamics	3
	PHY 361 Modern Physics I	3	Gen Ed: Communication; Written II; ENG 291 Advanced College Writing ²	3
	PHY 300 Intermediate Physics Laboratory	2	PHY 301 Advanced Physics Laboratory	2
	Gen Ed	3	PHY 320 Physical Optics/PHY 315 Introduction to Astrophysics ⁴	3
	TOTAL	16	TOTAL	14
THIRD YEAR	Fall Semester		Spring Semester	
Take a leadership role in the physics club.	MAT 330 Classical Applied Physics/PHY 330 Mathematical Physics ⁵	3	PHY 360 Thermodynamics/PHY 310 Dynamics	3
	Elective 300 level or above ³	3	PHY 410 Electromagnetic Theory/PHY 420 Modern Physics II/PHY 460 Quantum Mechanics	3
Consider being a physics tutor with the NKU learning assistance programs.	CHE 120 General Chemistry I	3	CHE 121 General Chemistry II	3
	CHE 120L General Chemistry I Laboratory	1	CHE 121L General Chemistry II Laboratory	1
Engage in research with faculty by taking PHY 492 as an elective.	MAT 234 Linear Algebra or CSC 270 Mathematics Software Programming ⁵	3	Gen Ed	3
	Gen Ed	3	Elective ³	3
	TOTAL	16	TOTAL	16
FOURTH YEAR	Fall Semester		Spring Semester	
If you're considering graduate school, prepare for the admission tests (e.g., GRE). Take the test.	PHY 410 Electromagnetic Theory/PHY 420 Modern Physics II/PHY 460 Quantum Mechanics	3	PHY 410 Electromagnetic Theory/PHY 420 Modern Physics II/PHY 460 Quantum Mechanics	4
	Gen Ed	3	PHY 494 Physics Seminar	1
Develop your resume.	Elective 300 level or above ³	3	Elective 300 level or above ³	3
	Elective	3	Elective	3
Begin your job search.	Elective	3	Elective	3
	TOTAL	15	TOTAL	14
GRAND TOTAL OF CREDITS				120

Notes: This plan is ONE way in which you can complete your degree program in four 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.

¹PHY 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.

²Regarding 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, mathematics, and chemistry courses for the major. How you sequence the remainder of the general education program is up to you.

³Be sure that you complete at least 45 credits at the 300 level or above. This means you must take at least eight additional credit hours from *any* 300-level course (beyond what's required for the physics major). 300-level or above physics and mathematics courses are recommended.

⁴The physics B.S. requires nine elective hours at the 300 level or above. Note: the offering of the following courses is once every three semesters: PHY 315 (Astrophysics), PHY 320 (Optics), PHY 410 (Electromagnetic Theory), 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 four years at NKU. See the up-to-date offering schedule on the website (physics.nku.edu). Those who are planning to pursue graduate studies are recommended to include PHY 330 Mathematical Physics and PHY 420 Modern Physics II among their electives.

⁵Assumes a minor in mathematical sciences (for students majoring in physical sciences). Only two courses are needed beyond those required by the physics program to obtain a minor in mathematical sciences. MAT 330/PHY 330 gives credit towards both the mathematics minor and physics major.