

CLARION UNIVERSITY OF PENNSYLVANIA

College of Arts and Sciences

Name _____
 Student ID # _____
 Major _____
 Major Advisor _____
 Date of Entry in Minor _____

REQUIREMENTS FOR THE MINOR IN NANOTECHNOLOGY

(38 credits)

1. Required Courses-

(29 credits)

{	PH 251	General Physics 1	4	
	PH 252	General Physics 2	4	

OR

{	PH 258	Introductory Physics 1	1	3	
	PH 259	Introductory Physics 2	2	3	
	PH 268	Introductory Physics Laboratory 1		1	
	PH 269	Introductory Physics Laboratory 2		1	
	PH 254	Excursions in Nanotechnology		3	
	PH 270	PSU Nanofab. Capstone Semester		18	

2. Elective Courses-

(Choice of at least 3 upper level courses: 9+ credits)

PH 353	Modern Physics 1	2	3	
PH 355	Modern Physics 2	3	3	
PH 357	Condensed Matter Physics	3	3	
PH 371	Experimental Physics 1	A	3	
PH 400	Special Topics in Physics		3	
PH 455	Analog Electronics	2	3	
PH 498, 499	Undergraduate Research in Physics I, II	B	1-6	
BIOL 402	Biometry	C	3	
BIOL 483	Molecular Biology	D	3	
BIOL 485	Biotechnology	E	4	
BIOL 499	Undergraduate Research in Biology	B	1-4	
CHEM 453	Biochemistry	F	3	
CHEM 463	Biochemistry Lab	F	1	
CHEM 454	Biochemistry II	G	3	
CHEM 465, 466	Chemical Research	B	1-6	
MATH 360, 460	Numerical Methods in Mathematics I, II	2	3-6	
MATH 321	Intermediate Applied Statistics	2	3	
MATH 499	Independent Study	B	1-3	

Note: most upper level courses require a number of mathematics or physics courses as either pre- or co-requisites

- ¹ MATH 270 (Co- or Pre-) or MATH 260 for non-Physics Majors
- ² MATH 271 (Co- or Pre-)
- ³ MATH 272 (Co- or Pre-)
- ⁴ MATH 350 (Co- or Pre-)

- ^A Minimum of 2-300 level physics courses completed or in progress
- ^B Prior department notification as independent study
- ^C (Pre) Elementary statistics course or permission
- ^D (Pre) a course in cell biology, genetics, and four semesters of chemistry or permission
- ^E (Pre) BIOL 483 or permission of instructor
- ^F (Pre) CHEM 251 or 254
- ^G (Pre) CHEM 353

This course selection will be done by advisement,
 and will fulfill the General Education requirements of Section II-A.