

The University of New Mexico Core Curriculum (37 units)

Writing and Speaking: (3-9 units)

Mathematics: (3 units)

Physical and Natural Sciences: (7 units)

Social and Behavioral Sciences: (6 units)

Humanities: (6 units)

Second Language: (non-English language; 3 units)

Fine Arts: (3 units)

Arts and Sciences College Minimum Requirements

· Total credit hours = 120

· 300/400 level credit hours = 48*

· Minimum credit hours taught in A&S = 96

***Students who complete a second language through the fourth semester are exempt from 6 of the 48 required upper division credit hours.**

University Residence Requirements

a. Minimum hours = 30

b. Senior standing = 15 past 92

c. In major = One half

d. In minor = One quarter

Minimum graduation GPA = 2.00

Keep in mind that minimum grades on road map are for individual coursework only. Students must maintain a minimum of a 2.0 cumulative grade point average for admission to and graduation from the College of Arts and Sciences. Minimums listed for the individual courses do NOT meet the cumulative minimum.

For more information visit www.catalog.unm.edu

Notes:

The Departmental Honors Program requires 2 semesters of an Honors Section of Physics 456. The student and faculty mentor present a mutually-agreeable topic to the department for approval. Also, the University requires a GPA of at least a GPA of at least 3.25. See the Honors web page for more information at <http://panda.unm.edu/AcadAdv/honors.html>

*Physics 167, 168, 267, 331, 311, 313, 311, 415, 416, 496, and 497 are all One Credit Hour Recitation Sections associated with Physics 160, 161, 262, and 330, 301, 303, 304, 405, 406, 491, and 492, respectively. These recitation sessions are practice in solving problems from the associated lecture courses. They are very useful and strongly recommended for the major.

**Recommended and will complete Mathematics or Statistics Minor, it not taken another minor (or 2nd Major) must be completed.

Math 313 and Physics 466 are especially recommended as electives useful for Physics Majors.

Advisement Contact Information:

Major Advisor: Krista Navarrette

Email: krisnava@unm.edu

Website: LoboAchieve.unm.edu

Faculty Advisor:

Email:

Website: physics.unm.edu

Minor Advisor or
2nd Major Advisor:

Email:

Website:

Course Subject and Title	Credit Hrs.	Major	Minor or 2nd Major	Core	Upper Div.	Min. Grade	Notes
Semester One:							
Physics 160 & 160L	4	4		4		C	
Physics 167*						CR	
MATH 162	4			4		C	
CHEM 121 & 123L	4			4		C	
1st English Composition	3			3		C	
Total:	15	4	0	15	0		
<i>Advisement: How to use the Degree Audit (anytime after the 10th week)</i>							

Course Subject and Title	Credit Hrs.	Major	Minor or 2nd Major	Core	Upper Div.	Min. Grade	Notes
Semester Two:							
Physics 161 & 161L	4	4				C	
Physics 168*						CR	
MATH 163	4					C	
CHEM 122 & 124L	4					C	
2nd English Composition	3			3		C	
Total:	15	4	0	3	0		
<i>Advisement: Enhanced Degree Audit skills</i>							

Course Subject and Title	Credit Hrs.	Major	Minor or 2nd Major	Core	Upper Div.	Min. Grade	Notes
Semester Three:							
Physics 262 & 262L	4	4				C	
Physics 267*						CR	
Math 264	4		4			C	
C&J 130; PHI 156; ENGL 219 or 220	3			3		C	
Second Language	3			3		C	
Total	14	4	4	6	0		
<i>Transferred into the College of Arts & Sciences (once semester grades are in)</i>							

Course Subject and Title	Credit Hrs.	Major	Minor or 2nd Major	Core	Upper Div.	Min. Grade	Notes
Semester Four:							
Physics 290	3	3				C	
Physics 330	3	3			3	C	
Physics 331*						CR	
MATH 316	3		3		3	C	
Core Requirement	3			3		C	
Core Requirement	3			3		C	
Total	15	6	3	6	6		
<i>Advisement: Attend Departmental Orientation (within the 4th to 12th week)</i>							

Course Subject and Title	Credit Hrs.	Major	Minor or 2nd Major	Core	Upper Div.	Min. Grade	Notes
Semester Five:							
Physics 303	3	3			3	C	
Physics 313*						CR	
Physics 302	3	3			3	C	
Physics 366	4	4			4	C	
MATH 314	3		3		3	C	
Core Requirement	3			3		C	
Total	16	10	3	3	13		
<i>Visit Career Services</i>							

Course Subject and Title	Credit Hrs.	Major	Minor or 2nd Major	Core	Upper Div.	Min. Grade	Notes
Semester Six:							
Physics 304	3	3			3	C	
Physics 314*						CR	
Physics 405	3	3			3	C	
Physics 415*						CR	
Physics 307L	3	3			3	C	
Core Requirement	3			3		C	
Total	12	9	0	3	9		
<i>Complete Graduation Workshop & Apply for degree (after 4th week)</i>							
<i>Advisement: Departmental Check-In</i>							

Course Subject and Title	Credit Hrs.	Major	Minor or 2nd Major	Core	Upper Div.	Min. Grade	Notes
Semester Seven:							
Physics 406	3	3			3	C	
Physics 416*						CR	
Physics 301	3	3			3	C	
Physics 311*						CR	
Optics Elective I	3	3			3	C	
Science/Math/Engg Elective I	3	3				C	
Upper Division MATH/STAT**	3		3		3	C	
Total	15	12	3	0	12		
<i>Advisement: Departmental Check-In / Senior Visit</i>							

Course Subject and Title	Credit Hrs.	Major	Minor or 2nd Major	Core	Upper Div.	Min. Grade	Notes
Semester Eight:							
Science/Math/Engg elective II	3	3			3	C	
Optics Elective II	3	3			3	C	
Upper Division MATH/STAT**	3		3		3	C	
Core Requirement	3			3		C	
Elective Any Level	3					D-	If Recitations not taken
Elective Any Level	3					D-	If Recitations not taken
Total	18	6	3	3	9		
<i>Advisement: Senior Visit</i>							
<i>Visit Graduation Fair</i>							

Degree Total	120	55	16	39	49		
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Notes:

The Departmental Honors Program requires 2 semesters of an Honors Section of Physics 456. The student and faculty mentor present a mutually-agreeable topic to the department for approval. Also, the University requires a GPA of at least a GPA of at least 3.25. See the Honors web page for more information at <http://panda.unm.edu/AcadAdv/honors.html>

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Optics Elective I - one of ECE 475, Phyc463, Phyc464, Astr 426

Optics Elective II - one of Phyc430, Phyc477L, Phyc493L, Phyc554

Either ECE475 or Phyc430 or both must be taken to ensure breadth in material physics

One of Science/Math/Engg electives must be at 200-500 level, all others at 300-500 level

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Arts and Sciences College Minimum Requirements

· Total credit hours = 120

· 300/400 level credit hours = 48 or 42 if 202 second language is completed

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Notes:

1. There is room for up to 6 bio electives, if the other electives in Sems 7 and 8 are used.
2. Phyc 366, to be taken in Sem 5, may be substituted for Math 311 and 312, but then two additional Math or Stat >300 classes would be needed to get the Math minor. They could be taken as the two upper-division electives in Sem 8.
3. It is possible to satisfy the pre-med requirements of the UNM Med School by an appropriate choice of the electives. The Premed Advisement document gives the required classes.
4. Students planning to go to grad school in physics or biophysics are strongly advised to take Phyc 491 and 492 (QM I and II) for their upper-division electives.

BIOPHYSICS ELECTIVES:

Biol 425 Molecular genetics

Biol 429 Molecular Cell Biology (additional pre-reqs - Chem 212 (or Chem 301 and 303L))

Biol 436L Phylogenetics

Biol 437 Evolutionary Genetics

Biol 444 Genomes and Genomic Analysis

Biol 470 Biology: Discovery and Innovation

Biol 492 Introductory Mathematical Biology

Biol 446 Laboratory Methods in Molecular Biology

Biol 547 Advanced Techniques in Light Microscopy

BME 517 Applied Biology for Biomedical Engineers

BME 544 Mechanics/Thermodynamics of Molecular Components in Cells

BME 570 Physical Bioanalytical Methods

Bioc. 423 Introductory Biochemistry (pre-req Chem 302)

NSMS/CHNE 522L Fundamentals of Nanofluids

NSMS/CHNE 530 Surface and Interfacial Phenomena

Phyc 302 Introduction to Photonics

Phyc 302L Optics Lab

Phyc 410 Chemistry and Physics at the Nanoscale

Phyc 480 Special topics in Biophysics

Chem 301 and 303L Organic Chem I with Lab

Chem 302 and 304L Organic Chem II with Lab

Chem 315 Introductory Physical Chemistry

Note: Phyc 301 may provide good preparation for these classes

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*****Concentration Gateway Electives: This concentration requires a minimum of 6 electives, including EPS 101/105L or ENVS 101/102L and PHYC 327 or EPS 436 as gateway classes. Four additional electives may be chosen from the following list (a student can mix classes across these subject areas, depending on interest, but should work closely with their advisor to determine the best set of classes). These electives are generally chosen because they require the PHYC 160 series as pre-reqs, but students are encouraged to contact the instructors of the classes to identify themselves as Physics majors with an EPS concentration.**

The "Solid Earth" Focus includes EPS 101/105L and PHYC 327 as the gateway classes

NOTE: EPS 101 and 105L are recommended, but a motivated student could opt to gain this background on their own by reading. This should be determined in advising. Such a student may add another EPS elective instead in an appropriate semester.

The "Climate" Focus includes ENVS 101/102L and EPS 436 as the gateway classes

NOTE: ENVS 101/102L or EPS 101/105L are recommended, but a motivated student could opt to gain this background on their own by reading. This should be determined in advising. Such a student may add another EPS elective instead.

Additional Electives:

Climate/Atmosphere: EPS 436 Climate Dynamics (3), EPS 437 Applied Meteorology (3), EPS 439 Paleoclimatology (3)

Solid Earth Geophysics: PHYS 327 Introduction to Solid Earth Geophysics (3); EPS 488 Scanning Electron Microscopy (3); PHYC 4XX/EPS 5XX - Geodynamics or geological fluid mechanics (taught by Professor Roy - course number TBD); EPS 457L Mathematical Modeling in the Geosciences (3); Introduction to Seismology, Applied Seismology, Signal Processing, Inverse Theory -- these course numbers TBD and to be taught by newly hired geophysics faculty; EPS 450 Volcanology (with permission of instructor) (3)

Hydrology: EPS 476 Physical Hydrology (3), EPS 462 Hydrogeology (3), or with permission of instructor, EPS 443 Aquifers and Reservoirs (3).

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