ENGINEERING PHYSICS (ELECTRICAL ENGINEERING) - BACHELOR OF SCIENCE IN ENGINEERING PHYSICS

A strong grasp of underlying physical principles behind the development of new technologies is necessary to keep up with new developments in a high-tech world. The Bachelor of Science (B.S.) in Engineering Physics program is designed to provide quality education to students for immediate employment with technical jobs in private industries (especially high-tech industries), research laboratories and public sectors. The program trains students with a combination of engineering knowledge, physics principles, mathematical background, problem-solving strategies and effective communication skills. The B.S. in Engineering Physics also provides an excellent preparation for graduate studies in either physics or an engineering discipline.

The requirements for the Electrical concentration are listed below. Students must earn a C- or better in all required courses.

Students must complete all University degree requirements, which include: General Education requirements, Viewing a Wider World requirements, and elective credits to total at least 121-122 credits with 48 credits in courses numbered 300 or above. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

Prefix	Title	Credits
General Education		
Area I: Communications		
English Composition - Level 1		
ENGL 1110G	Composition I	4
English Composition - Level 2 [1]		*3*
Oral Communication [1]		*3*
Area II: Mathematics		
MATH 1511G	Calculus and Analytic Geometry I [2]	4
Area III/IV: Laboratory Sciences and Social/Behavioral Sciences		*11*
Select one sequence from the following for four credits:		
PHYS 1310G & PHYS 1310L	Calculus -Based Physics I and Calculus -Based Physics I Lab	
PHYS 2110 & 2110L	Mechanics and Experimental Mechanics [3]	
Select one sequence from the following for four credits:		
PHYS 1320G & PHYS 1320L	Calculus -Based Physics II and Calculus -Based Physics II Lab	
PHYS 2140 & 2140L	Electricity and Magnetism and Electricity & Magnetism Laboratory [3]	
Area IV: Social and Behavioral Sciences (3 credits) [1]		
Area V: Humanities [1]		*3*
Area VI: Creative and Fine Arts [1]		*3*
General Education Elective		
MATH 1521G	Calculus and Analytic Geometry II	4
or MATH 1521H	Calculus and Analytic Geometry II Honors	
Viewing A Wider World		
Viewing a Wider World Electives [4]		6
Departmental/College Requirements		
Program Specific Requirements		
Mathematics		
MATH 2530G	Calculus III	3
MATH 3160	Introduction to Ordinary Differential Equations	3
Natural Science		
CHEM 1215G	General Chemistry I Lecture and Laboratory for STEM Majors	4
Electives		
Technical Elective [5]		3
Select one of the following:		3-4
PHYS 462	Intermediate Electricity and Magnetism II	
E E 340	Fields and Waves	
Physics		
PHYS 2120 & 2120L	Heat, Light, and Sound and Heat, Light, and Sound Laboratory	4
PHYS 395	Intermediate Mathematical Methods of Physics	3
PHYS 451	Intermediate Mechanics I	3
PHYS 454	Intermediate Modern Physics I	3
PHYS 455	Intermediate Modern Physics II	3
PHYS 475	Advanced Laboratory Practices for Materials	3
or PHYS 471	Modern Experimental Optics	
or PHYS 493	Experimental Nuclear Physics	
Physics with Engineering Component		
PHYS 315	Modern Physics	3
PHYS 325	Intermediate Experimental Physics	3
PHYS 461	Intermediate Electricity and Magnetism I	3
PHYS 480	Thermodynamics	3
Engineering		
ENGR 120	DC Circuit Analysis	4
ENGR 130	Digital Logic	4
ENGR 140	Introduction to Programming and Embedded Systems	4
ENGR 230	AC Circuit Analysis	4
E E 200	Linear Algebra, Probability and Statistics Applications	4
E E 317	Semiconductor Devices and Electronics I	4
E E 320	Signals and Systems I	3
ENGR 401	Engineering Capstone I	3
ENGR 402	Engineering Capstone II	3
Second Language: (not required)		
Electives, to bring the total credits to 121-122		**0**
Total Credits		**121-122**

1. See the General Education (https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/) section of the catalog for a full list of courses.
2. MATH 1511G Calculus and Analytic Geometry I is required for the degree but students may need to take any prerequisites needed to enter MATH 1511G Calculus and Analytic Geometry I first.
3. PHYS 2110 Mechanics/PHYS 2110L Experimental Mechanics and PHYS 2140 Electricity and Magnetism/PHYS 2140L Electricity & Magnetism Laboratory will not automatically count towards the Area III: Laboratory Science requirement, an exception will be made if students elect to take these courses.
4. See the Viewing a Wider World (https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/#viewingawiderworldtext)

section of the catalog for a full list of courses. See Alternatives for meeting VWW requirements (nine-credit rule).

[5] Approved technical electives are decided by Engineering Physics Advisors.