

PHIL 101G, The Art of Wondering, or PHIL 201G, Introduction to Philosophy.....	3
PHIL 220, Individual Conduct and Society, or PHIL 223G, Ethics, or PHIL 373, Ethical Theory.....	3
PHIL 211G, Informal Logic, or PHIL 312, Formal Logic.....	3
Nine additional Philosophy credits at the 300 or above level.....	9

PHYSICS

Professor Gary Kyle, department head

Professor Stephen Pate, undergraduate program head

Professor Matthias Burkardt, graduate program head

Professors Armstrong, Burkardt, Burleson (emeritus), Daw (emeritus), Gibbs, Goedecke (emeritus), Ingraham (emeritus), Kyle, Liefeld (emeritus), Miller (emeritus), Ni, Pate; **Associate Professors** Hearn, Kanim, Nakotte, Papavassiliou, Stromberg (emeritus); **Assistant Professors** Curran, Engelhardt, Kiefer, Lee, Urquidi, Vasiliev
(505) 646-3831

DEGREE: Bachelor of Arts
MAJOR: Physics

DEGREE: Bachelor of Science
MAJOR: Physics

EMPHASIS: Applied Physics
EMPHASIS: Applied Optics
EMPHASIS: Computational Physics
EMPHASIS: Geophysics

DEGREE: Bachelor of Science
MAJOR: Engineering Physics

DESIGNATED MINORS:

Physics/Classical Mechanics
Computational Physics
Physics/Electromagnetics
General Physics
Geophysics
Physics/Materials
Physics/Optics
Physics/Quantum Mechanics

A bachelor's degree in physics provides the basis for careers in industry, teaching, the military, government, or for study toward advanced degrees in physics or engineering. It should also provide the skills that recipients of physics degrees have listed as among the most important in obtaining their current positions, including problem solving ability, computer skills, mathematical skills, and laboratory skills, as well as knowledge of physics.

Further information about the department may be found on the web at www.physics.nmsu.edu.

DEGREE: Bachelor of Arts
MAJOR: Physics

The curriculum for the Bachelor of Arts degree is designed for students who would like to have a firm foundation in physics combined with study in another area and greater flexibility in choosing elective courses. The program requires a minor in a second field of study chosen by the student in consultation with an advisor.

Nondepartment Requirements (May not be taken S/U and must earn a grade of C or better.)

MATH 191, 192, 291, Calculus and Analytic Geometry I, II, III; and MATH 392, Differential Equations

Minor in a second field from another department (18 credits)

Department Requirements

PHYS 150, Elementary Computational Physics.....	3
PHYS 213/213L, Mechanics, and Experimental Mechanics.....	4

PHYS 214/214L, Electricity and Magnetism, and Experimental Electricity and Magnetism.....	4
PHYS 217/217L, Heat, Light, and Sound, and Experimental Heat, Light, and Sound.....	4
PHYS 315 Modern Physics.....	3
PHYS 315L, Experimental Modern Physics.....	3
PHYS 451, Intermediate Mechanics.....	3
PHYS 454, Intermediate Modern Physics I.....	3
PHYS 455, Intermediate Modern Physics II.....	3
PHYS 461, Intermediate Electricity and Magnetism I.....	3
PHYS 462, Intermediate Electricity and Magnetism II.....	3
PHYS 480, Thermodynamics.....	3
Electives: Sufficient to bring total number of credits to 128, including 54 upper-division.	

Suggested Minors for the Bachelor of Arts Physics Major

Basic Science Minor—A minor in a related scientific field broadens the overall knowledge of the student majoring in physics. Some departments which offer such minors are astronomy, chemistry, computer science, geology, and mathematics.

Prehealth Minor—Students wishing to attend a medical or dental post-graduate school are strongly encouraged to obtain a minor in a life science field such as biochemistry, biology, human biology, microbiology, and molecular biology.

Prelaw Minor—Students wishing to attend a post-graduate law school should obtain a minor in a law-related field, such as government, accounting, finance, international business, global political economy, or a Supplementary Major in Law and Society (24 credits).

DEGREE: Bachelor of Science
MAJOR: Physics

A Bachelor of Science degree in physics at NMSU prepares a student well for graduate study in physics or geophysics, or for a variety of careers in research and teaching. Specialization in one of the emphasis areas should increase employability at the B.S. level.

Nondepartmental Requirements (Must earn a grade of C or better)

MATH 191, MATH 192, MATH 291, Calculus and Analytic Geometry I, II, III; MATH 392, Differential Equations.
CHEM 115, CHEM 116, Principles of Chemistry I, II, or higher-level courses.

Departmental Requirements

PHYS 150, Elementary Computational Physics.....	3
PHYS 213/213L, Mechanics, and Experimental Mechanics.....	4
PHYS 214/214L, Electricity and Magnetism, and Experimental Electricity and Magnetism.....	4
PHYS 217/217L, Heat, Light, and Sound, and Experimental Heat, Light, and Sound.....	4
PHYS 315, Modern Physics.....	3
PHYS 315L, Experimental Modern Physics.....	3
PHYS 451, Intermediate Mechanics.....	3
PHYS 454, Intermediate Modern Physics I.....	3
PHYS 455, Intermediate Modern Physics II.....	3
PHYS 461, Intermediate Electricity and Magnetism I.....	3
PHYS 462, Intermediate Electricity and Magnetism II.....	3
PHYS 480, Thermodynamics.....	3
Advanced laboratory (PHYS 471 or 475).....	2
Six additional credits in physics or geophysics numbered 300 or above.....	6
Electives: Sufficient to bring total number of credits to at least 128, including 54 upper-division.	

Students who plan to pursue graduate study in physics or geophysics are strongly advised to take one or more senior-level courses in optics, nuclear physics, atmospheric physics, condensed matter physics, geophysics, or computational physics.

Students who plan to seek employment at the B.S. level are advised to take one of the following emphasis area curricula in addition to the general and departmental requirements. The program of study should be chosen by the student in consultation with an advisor. Some recommended courses are listed below.

EMPHASIS: Applied Physics

The program of study in applied physics is planned by the student and the physics advisor and includes classes in electrical and mechanical engineering along with classes in computer science.

EMPHASIS: Optics

PHYS 370, Optics I.....	3
PHYS 470, Optics II.....	3
PHYS 471, Modern Experimental Optics.....	2
PHYS 478, Optical Sources, Detectors, and Radiometry.....	4
PHYS 479, Lasers and Applications.....	4

EMPHASIS: Materials Science

CH E 361, Engineering Materials.....	3
CHEM 461, Polymers, their Composites and Mechanical Behavior.....	3
PHYS 475, Advanced Physics Laboratory.....	2
PHYS 488, Condensed Matter Physics.....	3
PHYS 489, Introduction to Modern Materials.....	3

EMPHASIS: Computational Physics

C S 157, FORTRAN Programming, or C S 167, C Programming.....	3
C S 171, Algorithmic Computations.....	4
MATH 279, Introduction to Finite Mathematics.....	3
PHYS 476, Computational Physics.....	4

EMPHASIS: Geophysics

GEOL 111G, Survey of Geology.....	4
GPHY 330, Introduction to Geophysics.....	3
GPHY 451, Principles of Geophysics.....	3
GPHY 452, Exploration Geophysics.....	3

Students desiring to prepare to be high school physics teachers will find the specific requirements listed under the College of Education chapter. Geophysics courses are offered by the Department of Physics and are listed under "Geophysics" in the course description chapter of this catalog.

DEGREE: Bachelor of Science in Engineering Physics**MAJOR: Physics**

The Bachelor of Science in Engineering Physics is a joint degree program of the Department of Physics and the College of Engineering. This degree is ideal preparation for technical careers in high-tech industries, research laboratories, and the public sector. It also provides an excellent preparation for graduate studies in physics or engineering. A full description of the program requirements can be found in the College of Engineering section of this catalog.

MINOR: Physics

A student cannot earn a B.A. or a B.S. in Physics and a minor in Physics.

PHYS 213, Mechanics, or PHYS 215, Engineering Physics I.....	3
PHYS 214, Electricity and Magnetism, or PHYS 216, Engineering Physics II.....	3
PHYS 217, Heat, Light and Sound.....	3
PHYS 315, Modern Physics.....	3
Six additional Physics credits, not including PHYS 350, Special Topics; PHYS 400, Undergraduate Research, PHYS 450, Selected Topics; or any Physics General Education courses.....	6

Designated Minors

In addition to the regular minor, the department offers several special designated minors, listed under "Academic Majors and Minors" in the "General Information" chapter. Any of these, together with an appropriate degree in another field, should give the student a background that is adequate to pursue graduate study in physics, along with the skills that physics bachelor's degree recipients have rated as among the most important in obtaining their current positions. Further information may be obtained from the department or its web page at www.physics.nmsu.edu.

A student cannot earn a B.A. or B.S. in Physics and any designated minor.

To earn a designated minor, students must pass:

PHYS 213, Mechanics, or PHYS 215, Engineering Physics I.....	3
PHYS 214, Electricity and Magnetism, or PHYS 216, Engineering Physics II.....	3
PHYS 217, Heat, Light and Sound.....	3
PHYS 315, Modern Physics.....	3
Six credits as listed below for each designated minor.....	6

Classical Mechanics: PHYS 451, Intermediate Mechanics I, and PHYS 480, Thermodynamics

Computational Physics: PHYS 476, Computational Physics, and PHYS 495, Mathematical Methods of Physics I

Electromagnetism: PHYS 461, Intermediate Electricity and Magnetism I, and PHYS 462, Intermediate Electricity and Magnetism II

Materials: PHYS 488, Condensed Matter Physics; and PHYS 489, Introduction to Modern Materials

Optics: PHYS 370, Optics I, and PHYS 470, Optics II

Quantum Mechanics: PHYS 454, Intermediate Modern Physics I, and PHYS 455, Intermediate Modern Physics II

PSYCHOLOGY

Professor Douglas J. Gillan, department head

Professors Gregory, Thompson, Trafimow; *Associate Professors* Foltz, Lee, Madson, McDonald; *Assistant Professors*, Guynn, Ketelaar, Kroger, Simon; *Adjunct Professors* Cooke, *Emeriti* Johnston, Paap, Stephan (505) 646-2502

DEGREE: Bachelor of Arts

MAJOR: Psychology

MINOR: Psychology

Students may take a major in psychology either as an area of emphasis in a liberal arts program or in preparation for further graduate education leading to professional careers in psychology. A major in psychology may be appropriate for the liberal arts student who wishes to pursue a career involving extensive social interaction and requiring solutions to people-related problems. Such careers include law, business, parenting, government, education, and management. Professional careers in psychology generally require some postbaccalaureate education. These careers include provision of clinical and counseling services, conducting research, applying research findings in industrial or government settings, and doing teaching and research in colleges and universities. Students planning to apply to graduate school are encouraged to take PSY 311, Advanced Research Seminar, no later than the Fall semester of their senior year.

The requirements listed below should provide an adequate exposure to psychology for the liberal arts student and a basic foundation for students seeking a career in psychology. While all majors should consult with the department's advising center and with a faculty advisor, students wishing to prepare for a professional career in psychology are especially encouraged to work closely with an advisor, as early as possible. The advising center maintains several model programs that help prepare majors to fulfill various career goals.

DEGREE: Bachelor of Arts

MAJOR: Psychology

General Requirements

Students must receive a C or better in courses used to satisfy the departmental and nondepartmental requirements of the psychology major.

Departmental Requirements

PSY 201G, Introduction to Psychology, or	
HON 203G, Understanding the Science of Human Behavior.....	3
Three credits from the following core: PSY 212, Abnormal Psychology; PSY 350, Developmental Psychology: Conception through Childhood; PSY 440, History and Systems.....	3
Eight credits in research methods: PSY 310, Experimental Methods I; and PSY 311, Experimental Methods II, or PSY 453, Developmental Research Methods.....	8
The following requirements are to be met after the student has completed PSY 310:	
At least 3 credits in Basic Mechanisms from the following:	
PSY 301, Introduction to Psycholinguistics; PSY 375, Introduction to Biopsychology; PSY 376, Evolutionary Psychology; PSY 380, Perception.....	3-4
At least 3 credits in Acquisition and Use of Knowledge from the following: PSY 320, Learning; PSY 340, Cognitive Psychology; PSY 383, Memory; PSY 442, Thinking.....	3-4
At least 3 credits in Understanding Behavior from the following:	
PSY 315, Emotion and Motivation; PSY 217, Social Psychology; PSY 321, Personality; PSY 358, Individual and Group Differences.....	3
Additional electives to bring total credits in psychology to at least 34, with at least 24 credits being upper division.	