

DEPARTMENT OF NATURAL SCIENCES

Department Chair: Ladner

Professors: Dowse, Jennings, Ladner, Miller, Shook

Assistant Professors: Cooper, Camacho, Norris

Lab Director: Fisher, Mutchnick

Majors: Biology, Botany, Cell and Molecular Biology, Chemistry, Forest/Wildlife, Forest Wildlife Law Enforcement, General Science, Medical Technology, Science Education, Zoology

Minors: Biology, Botany, Chemistry, Geology, Zoology

The Department of Natural Sciences offers Bachelor of Arts and Science degrees in a variety of subjects as preparation for a large number of professional careers. Pre-professional programs are offered for students interested in careers in dentistry, engineering, forestry, medicine, or pharmacy. Additionally, the Department provides appealing courses which not only fulfill undergraduate science requirements, but also prepare the student for the scientific realities of life.

The faculty is committed to scholarship and research. Research equipment, instruments, and library materials are available for student use.

General Education Requirements: The following Department of Natural Sciences courses, **including their associated laboratories**, are approved for fulfilling the General Education requirements for laboratory science. Some of these are restricted (for General Education credit) to students who have declared majors in specific fields. **All courses, including designated General Education courses, required for a major or minor in the Department of Natural Sciences must be passed with a grade of C or better.**

BIOL 101/103 and 102/104 primarily for non-science majors

BIOL 202/203, 204/205, 206/207 primarily for science majors

BIOL 254/256 and 255/257

CHEM 121/123, 151/153, 152/154

GEOL 101/103, 102/104, 201/203

PHSC 101/103, 102/104, 115/116, 131/133, 171/173, 172/174

PHYS 151/153, 152/154, 171/173, 172/174

Advisors: Each student has the option of choosing his or her advisor. Each major for the department however, has a suggested advisor listed at the beginning of the degree plan. These professors are the best qualified to advise a student in each of these areas.

BACHELOR OF ARTS or BACHELOR OF SCIENCE IN CHEMISTRY

Advisor: Cooper

General Education & Other Requirements By This Major

CMPS 111	Computer Literacy - PC	3
MATH 131	College Algebra	3
MATH 132	Trigonometry	3
MATH 171	Calculus I	5
MATH 172	Calculus II	4

General Education Lab science courses must be chosen from the Physics discipline:

PHYS 151/153	General Physics I & PHYS 152/154	General Physics II	
<u>or</u> PHYS 171/173	Princ of Physics I & PHYS 172/174	Princ of Physics II	8

Students must choose a minor or second major outside of the Chemistry discipline.

54 credits of upper division courses are required (6 credits outside of major & minor).
At least 12 credit hours must come from Writing Intensive courses.

B.A. Requirements

Complete any upper division Spanish course, or one of the following:

SPAN 202, SPAN 214, or SPAN 252

Students planning to enter graduate school should take additional Math.

B.S. Requirements (6 credit hours)

CMPS 260	Computer Applications	3
MATH 321	Statistics	3

Chemistry Core Requirements

CHEM 151/153	General Chemistry I & lab	4
CHEM 152/154	General Chemistry II & lab	4
CHEM 201/202	Analytical Chemistry & lab	4
CHEM 301	Instrumental Analysis	4
CHEM 351/353	Organic Chemistry I & lab	5
CHEM 352/354	Organic Chemistry II & lab	5
CHEM 360	Introduction to Biochemistry	3
CHEM 401/403	Physical Chemistry I & lab	4
CHEM 402/404	Physical Chemistry II & lab	4
CHEM 490	Chemistry Research Project	<u>3</u>
	Total core credit hours	40

BACHELOR OF ARTS or BACHELOR OF SCIENCE IN FOREST WILDLIFE

Advisors: Jennings, Shook

General Education & Other Requirements By This Major

General Ed. Lab Science courses must be outside the Biology discipline. CHEM 151 and 152 are required (and must be passed with a grade of C or higher) unless Chemistry is declared as a minor or second major. Students must choose a minor or second major outside of the Biology discipline.

54 credits of upper division courses are required (6 credits outside of major & minor). At least 12 credit hours must come from Writing Intensive courses.

B.A. Requirements

Complete any upper division Spanish course, or one of the following:
SPAN 202, SPAN 214, or SPAN 252

B.S. Requirements (6 credit hours)

MATH 321 Statistics (unless taken as General Education) 3
Complete an additional three credit hours in Computer Science, beyond the General Education requirements.

Life Science Core Requirements

BIOL 202/203	Majors: Plant Form, Function and Diversity & lab	4
BIOL 204/205	Majors: Animal Form, Function and Diversity & lab	4
BIOL 206/207	Majors: Intro to Cell Biology & lab	4
BIOL 301/303	Ecology & lab	4
BIOL 366/368	Genetics & lab	4
	Total core credit hours	20

Forest Wildlife Major Requirements

BIOL 310/312	Invertebrate Zoology & lab	4
BIOL 311/313	Vertebrate Zoology & lab	4
BIOL 322/324	Dendrology & lab	4
BIOL 351/353	Plant Taxonomy & lab	4
BIOL 375/377	Principles of Wildlife Biology & lab	4
BIOL 425/427	Range Vegetation & lab	4
	Select two of the following three choices	
BIOL 442/443	Ornithology & lab	4
or BIOL 448/449	Herpetology & lab	4
or BIOL 451/453	Mammalogy & lab	4
BIOL 481	Practicum	3
	Total core credit hours	35
	Total credit hours	55

**BACHELOR OF APPLIED SCIENCE
FOREST WILDLIFE LAW ENFORCEMENT**
(no minor required)

Advisors: Jennings, Shook

This major is intended specifically for students wishing to pursue a career as a Game Warden or Wildlife Enforcement Officer at the state level (similar federal positions possess a different set of requirements). Students desiring employment in other forestry/wildlife positions within relevant state and federal agencies should choose the standard Forestry/Wildlife degree with an appropriate minor.

General Education & Other Requirements By This Major

General Ed. Lab Science courses must be outside the Biology discipline. CHEM 151/153 and PHSC 131/133 are required (and must be passed with a grade of C or higher). If Chemistry is declared as a second major, a course other than CHEM 151/153 must be used to fulfill General Ed. Lab Science requirement. 41 credits of upper division courses are required. As this is a B.A.S. degree, upper division hours outside the major are not required.

B.A.S. Requirements (6 credit hours)

MATH 321	Statistics	3
Complete an additional three credit hours in Computer Science, beyond the General Education requirements.		<u>3</u>
		6

Life Science Core Requirements

BIOL 202/203	Majors I: Plant Form, Function and Diversity & lab	4
BIOL 204/205	Majors II: Animal Form, Function and Diversity & lab	4
BIOL 206/207	Majors III: Intro to Cell Biology & lab	4
BIOL 301/303	Ecology & lab	4
BIOL 366/368	Genetics & lab	<u>4</u>
Total core credit hours		20

Forest Wildlife Law Enforcement Major Requirements

BIOL 310/312	Invertebrate Zoology & lab	4
BIOL 311/313	Vertebrate Zoology & lab	4
BIOL 322/324	Dendrology & lab	4
BIOL 351/353	Plant Taxonomy & lab	4
BIOL 375/377	Principles of Wildlife Biology & lab	4
BIOL 425/427	Range Vegetation & lab	4
Select two of the following three choices		
BIOL 442/443	Ornithology & lab	4
<u>or</u> BIOL 448/449	Herpetology & lab	4
<u>or</u> BIOL 451/453	Mammalogy & lab	4
BIOL 481	Practicum	<u>3</u>
Total core credit hours		<u>35</u>
Total credit hours		55

Law Enforcement Academy Requirements (should be taken during the Spring and Summer of students' senior year)

CJUS 101	Law Enforcement Training Academy I	14
CJUS 102	Law Enforcement Training Academy II	<u>10</u>
	Total Law Enforcement	24

BACHELOR OF ARTS or BACHELOR OF SCIENCE IN GENERAL SCIENCE

Advisor: Ladner

General Education & Other Requirements By This Major

Two of the Lab Science courses listed in the core requirements will count for General Education credits and must be passed with a grade of C or higher. Students must choose a minor from a separate discipline.

54 credits of upper division courses are required (6 credits outside of major & minor). At least 12 credit hours must come from Writing Intensive courses.

B.A. Requirements

Complete any upper division Spanish course, or one of the following:
SPAN 202, SPAN 214, or SPAN 252

B.S. Requirements (6 credit hours)

MATH 321	Statistics	3
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Complete an additional three credit hours in Computer Science, beyond the General Education requirements.

General Science Core Requirements (8 credits will count for Gen'l Ed Lab science)

BIOL 202/203	Majors I: Plant Form, Function and Diversity & lab	4
BIOL 204/205	Majors II: Animal Form, Function and Diversity & lab	4
CHEM 151/153	General Chemistry I & lab	4
CHEM 152/154	General Chemistry II & lab	<u>4</u>
	Total core & gen'l ed lab science credit hours	16

Guided Electives (select 15 credit hours minimum from the following courses plus another 24 credits in upper division courses as specified):

CMPS 140	Intro to Computer Science	3
GEOL 101/103	General Geology I & lab	4
GEOL 102/104	General Geology II & lab	4
GEOL 311/313	Natural Resources & lab	4
GEOL 315	Geology of New Mexico	3
PHYS 151/153	General Physics I & lab	4
PHYS 152/154	General Physics II & lab	4
PHYS 171/173	Principles of Physics I & lab	4
PHYS 172/174	Principles of Physics II & lab	4
PHSC 115/116	Descriptive Astronomy & lab	<u>4</u>
	Total credits from listed courses	15

Other upper division electives

Upper-division science electives in Biological Science	12
Upper-division science electives in Physical Science, (Chemistry, Physics, Geology)	<u>12</u>
Total upper division electives	<u>24</u>
Total core and elective credits for major (outside of General Education and BA/BS hours)	47

BACHELOR OF SCIENCE IN MEDICAL TECHNOLOGY

(in conjunction with UNM)

(no minor required)

Advisor: Ladner

Requirements in Other Fields

CMPS 140	Introduction to Computer Science	3
CMPS 110	Computer Literacy - MacIntosh	
or CMPS 111	Computer Literacy - PC	3
COMM 110	Public Speaking	3
MATH 131	College Algebra	3
MVSC 213	First Aid	2

Two of the Lab Science courses listed in the core requirements will count for General Education credits (and must be passed with a grade of C or higher). 54 credits of upper division courses are required (6 credits outside of major & minor). At least 12 credit hours must come from Writing Intensive courses.

B.S. Requirements (6 credit hours)

MATH 321	Statistics	3
CMPS 260	Computer Applications	3

Medical Technology Core Requirements

Biology courses (8 credits will count for Gen'l Ed lab science):

BIOL 204/205	Majors II: Animal Form, Function and Diversity & lab	4
BIOL 254/256	Anatomy & Physiology I & lab	4
BIOL 255/257	Anatomy & Physiology II & lab	4
BIOL 310/312	Invertebrate Zoology & lab	4
BIOL 360/362	Cell Biology & lab	4
BIOL 371/373	Microbiology & lab	4
BIOL 486	Senior Project (Immunology)	<u>2</u>
	Total Biology credit hours	26

Chemistry courses:

CHEM 151/153	General Chemistry I & lab	4
CHEM 152/154	General Chemistry II & lab	4
CHEM 201/202	Analytical Chemistry & lab	4
CHEM 301	Instrumental Analysis	4
CHEM 351/353	Organic Chemistry I & lab	<u>5</u>
	Total Chemistry credit hours	<u>21</u>
	Total core credits for major (outside of General Education and BS hours)	39

Clinical Study:

The student must submit a formal application for admission to UNM school of Medical Technology, be admitted, and complete clinical study. Upon the student's completion of the year of study in the school of medical technology, the director of the school will certify the student's credits to the WNMU Registrar, thus enabling the student to enter candidacy for the degree of Bachelor of Science in Medical Technology. At the same time the student is eligible to sit for National Certifying exams given by the Board of Registry (ASCP) or the National Certifying Agency for Clinical Laboratory Sciences (NCA).

Science Education Major

For licensure to teach secondary science students must complete both a Science Education major and a Secondary Education major. This double major program is completed in conjunction with the School of Education at WNMU and fulfills all requirements for licensure to teach secondary science.

Students may also choose to major in Secondary Education with an endorsement in Earth and Space Science or Elementary Education with an endorsement in General Science.

Students may also choose the route of obtaining an MAT if they have an undergraduate degree in science.

Degree plans for the double majors in Secondary Education and Science Education and endorsement degree plans can be found in the School of Education section of this catalog.

BACHELOR OF ARTS or BACHELOR OF SCIENCE IN SCIENCE EDUCATION - Biology Concentration

Advisor: Miller

General Education & Other Requirements By This Major

CMPS 110	Computer Literacy - MacIntosh	3
CHEM 151/153	General Chemistry I & lab (passed with a C or higher)	4
GEOL 101/103	General Geology I & lab	4
PHSC 101/103	Physical Science for General Education I & lab	4
PHSC 102/104	Physical Science for General Education II & lab	4

Students must choose a minor from a separate discipline.

54 credits of upper division courses are required (6 credits outside of major & minor). At least 12 credit hours must come from Writing Intensive courses.

B.A. Requirements

Complete any upper division Spanish course, or one of the following:
SPAN 202, SPAN 214, or SPAN 252

B.S. Requirements (6 credit hours)

MATH 321	Statistics (unless taken as General Education)	3
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Complete an additional three credit hours in Computer Science, beyond the General Education requirements.

Science Education - Biology Core Requirements

BIOL 202/203	Majors I: Plant Form, Function and Diversity & lab	4
BIOL 204/205	Majors II: Animal Form, Function and Diversity & lab	4
BIOL 254/256	Anatomy & Physiology I & lab	4
BIOL 301/303	Ecology & lab	4
BIOL 310/312	Invertebrate Zoology & lab	
or BIOL 311/313	Vertebrate Zoology & lab	4
BIOL 366/368	Genetics & lab	4
BIOL 442/443	Ornithology & lab	
or BIOL 448/449	Herpetology & lab	
or BIOL 451/453	Mammalogy & lab	4
BIOL 450	Methods of Teaching Secondary Science	3
	Total Biology core credit hours	31

**BACHELOR OF ARTS or BACHELOR OF SCIENCE
IN SCIENCE EDUCATION - Physical Science Concentration**

Advisor: Ladner

Note: This degree plan does not include the teacher licensure. See paragraph at the beginning of the Science Education section in this chapter.

General Education & Other Requirements By This Major

CMPS 110	Computer Literacy - MacIntosh	3
BIOL 202/203	Majors I: Plant Form, Function and Diversity & lab	4
BIOL 204/205	Majors II: Animal Form, Function and Diversity & lab	4
BIOL 254/256	Anatomy & Physiology I & lab	4
BIOL 301/303	Ecology & lab	4

Students must choose a minor from a separate discipline.

54 credits of upper division courses are required (6 credits outside of major & minor). At least 12 credit hours must come from Writing Intensive courses.

B.A. Requirements

Complete any upper division Spanish course, or one of the following:
SPAN 202, SPAN 214, or SPAN 252

B.S. Requirements (6 credit hours)

MATH 321	Statistics	3
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Complete an additional three credit hours in Computer Science, beyond the General Education requirements.

Science Education - Physical Science Core Requirements

CHEM 151/153	General Chemistry I & lab	4
CHEM 152/154	General Chemistry II & lab	4
GEOL 101/103	General Geology I & lab	4
GEOL 315	Geology of New Mexico	3
PHYS 151/153	General Physics I & lab	4
PHYS 152/154	General Physics II & lab	4
PHSC 115/116	Descriptive Astronomy & lab	4
BIOL 450	Methods of Teaching Secondary Science	<u>3</u>
	Total credit hours	30

**BACHELOR OF ARTS or BACHELOR OF SCIENCE
IN ZOOLOGY**

Advisors: Jennings, Shook

General Education & Other Requirements By This Major

General Ed. Lab Science courses must be outside the Biology discipline.

CHEM 151 and 152 are required (and must be passed with a grade of C or higher) unless Chemistry is declared as a minor or second major. Students must choose a minor or second major outside of the Biology discipline with the exception of Botany.

54 credits of upper division courses are required (6 credits outside of major & minor). At least 12 credit hours must come from Writing Intensive courses.

B.A. Requirements

Complete any upper division Spanish course, or one of the following:
SPAN 202, SPAN 214, or SPAN 252

B.S. Requirements (6 credit hours)

MATH 321 Statistics 3
Complete an additional three credit hours in Computer Science, beyond the General Education requirements.

Life Science Core Requirements

BIOL 202/203	Majors I: Plant Form, Function and Diversity & lab	4
BIOL 204/205	Majors II: Animal Form, Function and Diversity & lab	4
BIOL 206/207	Majors III: Intro to Cell Biology & lab	4
BIOL 301/303	Ecology & lab	4
BIOL 366/368	Genetics & lab	4
BIOL 422	Evolution	<u>3</u>
	Total core credit hours	23

Zoology Major Requirements

BIOL 310/312	Invertebrate Zoology & lab	4
BIOL 311/313	Vertebrate Zoology & lab	4
BIOL 342	Comparative Physiology	
<u>or</u> BIOL 320	Animal Behavioral Ecology	
<u>or</u> BIOL 432	Biogeography	3

BIOL 442/443	Ornithology & lab	
<u>or</u> BIOL 448/449	Herpetology & lab	
<u>or</u> BIOL 451/453	Mammalogy & lab	4
BIOL 462/464	Comparative Chordate Anatomy & lab	5
BIOL 486	Senior Project	2
BIOL ____	Upper-Division guided electives	<u>8</u>
		<u>30</u>
	Total credit hours	53

Minors

Biology Minor

Biology core requirements

BIOL 202/203	Majors I: Plant Form, Function and Diversity & lab	4
BIOL 204/205	Majors II: Animal Form, Function and Diversity & lab	4
BIOL 206/207	Majors III: Intro to Cell Biology & lab	4
BIOL 310/312	Invertebrate Zoology & lab	
<u>or</u> BIOL 311/313	Vertebrate Zoology & lab	4
BIOL 331/333	Biology of Algae and Fungi & lab	
<u>or</u> BIOL 332/334	Evolution and Diversity of Plants & lab	<u>4</u>
	Total core credit hours	20

Guided electives: (select 4 credit hours minimum)

BIOL 301/303	Ecology & lab	4
BIOL 342	Comparative Physiology	3
BIOL 351/353	Plant Taxonomy & lab	4
BIOL 360/362	Cell Biology & lab	4
BIOL 366/368	Genetics & lab	4
BIOL 422	Evolution	3
BIOL 432	Biogeography	3
BIOL 462/464	Comparative Chordate Anatomy & lab	<u>5</u>
	Total guided electives	<u>4</u>
	Total credit hours	24

Botany Minor

BIOL 202/203	Majors I: Plant Form, Function and Diversity & lab	4
BIOL 204/205	Majors II: Animals Form, Function and Diversity & lab	4
BIOL 206/207	Majors III: Intro to Cell Biology & lab	4
BIOL 331/333	Biology of Algae and Fungi & lab	
<u>or</u> BIOL 332/334	Evolution and Diversity of Plants & lab	4
BIOL 322/324	Dendrology & lab	
<u>or</u> BIOL 425/427	Range Vegetation & lab	<u>4</u>
	Total credit hours	20

Note: Zoology and General Science majors should **substitute any three** of the following courses (not already taken for core requirements) for BIOL 202/203, BIOL 204/205, and BIOL 206/207.

BIOL 322/324	Dendrology & lab	4
BIOL 331/333	Biology and Algae and Fungi & lab	4
BIOL 332/334	Evolution & Diversity of Plants & lab	4
BIOL 410/412	Plant Physiology & lab	4
BIOL 425/427	Range Vegetation & lab	4
BIOL 471/473	Majors Microbiology & lab	4

Chemistry Minor

Chemistry core requirements

CHEM 151/153	General Chemistry I & lab	4
CHEM 152/154	General Chemistry II & lab	<u>4</u>
	Total core credit hours	8

Guided electives - (select 16 credit hours minimum):

CHEM 201/202	Analytical Chemistry & lab	4
CHEM 301	Instrumental Analysis	4
CHEM 351/353	Organic Chemistry I & lab	5
CHEM 352/354	Organic Chemistry II & lab	5
CHEM 360	Introduction to Biochemistry	3
CHEM 401/403	Physical Chemistry I & lab	4
CHEM 402/404	Physical Chemistry II & lab	<u>4</u>
	Total guided electives	<u>16</u>
	Total credit hours	24

Geology Minor

GEOL 101/103	General Geology I & lab	4
GEOL 102/104	General Geology II & lab	4
GEOL 301/303	Rocks and Minerals & lab	4
GEOL 340/342	Field and Research Methods & lab	4
GEOL 331/333	Sedimentology & lab	4
GEOL 401/403	Hydrogeology & lab	<u>4</u>
	Total credit hours	24

Zoology Minor

BIOL 202/203	Majors I: Plant Form, Function and Diversity & lab	4
BIOL 204/205	Majors II: Animal Form, Function and Diversity & lab	4
BIOL 206/207	Majors III: Intro to Cell Biology	4
BIOL 310/312	Invertebrate Zoology & lab	4
BIOL 311/313	Vertebrate Zoology & lab	4
BIOL 462/464	Comparative Chordate Anatomy & lab	<u>5</u>
	Total credit hours	25

Note: Botany, Cell/Molecular Biology, and General Science majors **should substitute any three** of the following courses for BIOL 202/203, 204/205, and 206/207:

BIOL 320	Animal Behavioral Ecology	3
BIOL 432	Biogeography	3
BIOL 442/443	Ornithology & lab	4
BIOL 448/449	Herpetology & lab	4
BIOL 451/453	Mammalogy & lab	4
BIOL 472	Readings in Science	3

PRE-PROFESSIONAL PROGRAMS

Advisors: Ladner, Miller

Pre-Dentistry

Most dental schools require a minimum of three years undergraduate preparation for admission. Many dental schools strongly recommend a four-year, degree-producing program. Entrance requirements to dental schools include the following:

1. Completion of the Dental Aptitude Test which is given three times a year through the Council on Dental Education of the American Dental Association. See the Academic Support Center for information.
2. Completion of at least two full years of academic work in an accredited college of liberal arts and sciences including the following minimum credit hours:

Biological Science	8-12 credits
General Chemistry	8 credits
Organic Chemistry	4 credits
Physics	8 credits

Most dental schools have entrance requirements in addition to those listed above. The prospective dental student should become acquainted as early as possible with the entrance requirements of various dental schools. A course of study may be built around the requirements of a particular school.

Pre-Forestry

The following courses are suggested for students who plan to enter a professional school of forestry:

BIOL 202/203	Majors I: Plant Form, Function and Diversity & lab	4
BIOL 204/205	Majors II: Animal Form, Function and Diversity & lab	4
BIOL 322/324	Dendrology & lab	4
BIOL 351/353	Plant Taxonomy & lab	4
CHEM 151/153	General Chemistry I & lab	4
CHEM 152/154	General Chemistry II & lab	4
ECON 201	Principles of Macroeconomics	3
ECON 202	Principles of Microeconomics	3
ENGL 101	Composition and Rhetoric I	3
ENGL 102	Composition and Rhetoric II	3

MATH 131	College Algebra	3
MATH 132	Trigonometry	3
MVSC ____	2 courses in Movement Science	2
PHYS 151/153	General Physics I & lab	4
PHYS 152/154	General Physics II & lab	4
POL 201	American National Government	3
POL 202	American State Government	<u>3</u>
	Total credit hours	58

Pre-Medicine

Most medical schools recommend a rigorous four-year, degree-producing pre-professional program. In general, entrance requirements to medical schools include the following:

1. Evidence of superior intellectual ability and achievement.
2. Evidence of character, attitude, and interests suitable for a career in medicine.
3. Completion of the Medical College Admission Test of the Association of American Medical Colleges.
4. Completion of at least 90 credit hours of college courses in an approved college or university (a bachelor's degree is recommended) which must include the following credit hours: chemistry, 16-20 credits; biology, 8-16 credits; physics, 8 credits; college mathematics, one year (calculus is recommended).

Most medical schools have entrance requirements in addition to those listed above. Some require specific advanced courses in biology; some require integral calculus; some require physical chemistry with a prerequisite of integral calculus. It is recommended that the prospective medical student become acquainted as early as possible with the entrance requirements of various medical schools. A course of study may be built around the requirements of the schools. Pre-medical students are advised to take an undergraduate major in either chemistry, biology, or general science, with a strong minor in one of the other two fields.

Pre-Pharmacy

Most colleges of pharmacy require one year of college academic credit as a minimum for entrance. Normally a student would transfer to a college of pharmacy at the end of his/her freshman year. In order to obtain a Bachelor of Science degree in pharmacy in minimum time, the first-year program must correlate closely with the program recommended by colleges of pharmacy. The recommended first-year program is as follows:

BIOL 204/205	Majors II: Animal Form, Function and Diversity & lab	4
CHEM 151/153	General Chemistry I & lab	4
CHEM 152/154	General Chemistry II & lab	4
ENGL 101	Composition and Rhetoric I	3
ENGL 102	Composition and Rhetoric II	3
MATH 171	Calculus I	5
MATH 172	Calculus II	4

The University of New Mexico Pharmacological Board requires at least 6 credit hours of electives selected from the following areas: speech, literature, history, philosophy, anthropology, psychology, economics, geography, political science, sociology, foreign languages, history, and appreciation and criticism of art, music, theatre and dance.

The student must also complete the Pharmacy College Admission Test no later than the February test date of the year in which the student applies for admission.

Assistance is available, through pre-professional faculty advising, to provide the student with realistic curriculum guidance in the undergraduate programs. The name of the faculty advisor for each of the above pre-professional programs and information concerning the Medical College Admissions Test, the Dental Aptitude Test, and the Pharmacy College Admission Test can be obtained from the office of the department chair.

Bachelor of Science degree in Engineering (in conjunction with NMSU)

WNMU and New Mexico State University (NMSU) are developing articulation agreements for students interested in pursuing a Bachelor of Science degree in Engineering. Students can begin their academic work at WNMU, and then transfer to NMSU to complete an engineering degree. Interested students should consult with Mary Dowse, Department of Natural Sciences, for specific degree plans and requirements.

