

# COLLEGE of AGRICULTURE and HOME ECONOMICS

Dean and Chief Administrative Officer • *Jerry G. Schickedanz*

Associate Dean and Director of Academic Programs • *Wesley Holley*

Associate Dean and Director of the Cooperative Extension Service • *Paul Gutierrez*

Associate Dean and Director of the Agricultural Experiment Station • *LeRoy A. Daugherty*

Scholarship Coordinator • *Edward Rodriguez*

**Bachelor of Science in Agriculture**—Majors in Agricultural Biology, Agricultural Economics and Agricultural Business, Agricultural and Extension Education, Agronomy, Soil Science, Animal Science, Rangeland Resources, Wildlife Science, General Agriculture, and Horticulture. Programs in Preventive Medicine and Preforestry

**Bachelor of Science in Family and Consumer Sciences**—Majors in Clothing, Textiles, and Fashion Merchandising; Family and Consumer Science Education; Family and Child Science; and Human Nutrition and Food Science

**Bachelor of Science in Hotel, Restaurant, and Tourism Management**

**Bachelor of Science in Environmental Science**

## Requirements for Bachelors of Science in Agriculture; Family and Consumer Sciences; and Hotel, Restaurant, and Tourism Management

1. Constants or courses required of all qualifying for this degree.
2. General education requirements.
3. Courses to be taken in the particular field of your major interest.
4. A minimum of 35 semester credits from the College of Agriculture and

Home Economics and enrollment in a major of the college while taking the last 30 credits used to meet degree requirements

5. Free electives sufficient to bring the total number of credits to a minimum of 128 semester credits. Of this total at least 54 semester credits must be in upper-division courses (numbered 300 or above).
6. A grade-point average of not less than 2.0.

## Requirements for Bachelor of Science in Environmental Science, Major Environmental Science

The requirements for the degree are the same as the above except for #4. Instead, the degree requires a minimum of 35 semester credits from courses with E S designation.

## Typical Curricula in Agriculture

The following suggested curricula are presented for your guidance. With the consent of the head of the department in which you are majoring, you may select electives and changes in a curriculum except in the case of constants.

### DEGREE: Bachelor of Science in Agriculture

#### MAJOR: General Agriculture

The curriculum in General Agriculture is administered by the Department of Entomology, Plant Pathology, and Weed Science for the Technical Agricultural Science option, and the Department of Agricultural and Extension Education for the Behavioral Agricultural Science option.

#### Technical Agricultural Science Option

##### Freshman year

Freshman year	
ENGL 111G, Rhetoric and Composition.....	4
BIOL 111G, Principles of Biology, or BIOL 211G, Cellular and Organismal Biology .....	3
HORT 100G, Introductory Plant Science.....	4
Mathematics elective .....	3
Agriculture, lower division .....	12
Elective.....	6

##### Sophomore year

CHEM 111, 112, General Chemistry I, II.....	8
AXED 201G, Effective Leadership and Communication in Agricultural Organizations, or COMM 253G, Public Speaking, or COMM 265G, Principles of Human Communication .....	3
ECON 201G, Introduction to Economics, or ECON 251G, Principles of Macroeconomics, or ECON 252G, Principles of Microeconomics .....	3
SOIL 252, Soils.....	3
SOIL 252L, Soils Laboratory.....	1
Agriculture electives.....	7
Elective.....	4
General education requirement.....	3

##### Junior year

AGRO 305, Principles of Genetics .....	3
ENGL 311G, Advanced Composition, or ENGL 318G, Advanced Technical and Professional Communication.....	3
EPWS 303, Economic Entomology .....	4
E ST 311G, Statistical Applications .....	3
Agriculture economics elective.....	3
Animal science, upper-division.....	3
Chemistry or physics.....	4
Part III, General Education Requirements .....	3
Plant science, upper-division .....	3
Elective.....	3

##### Senior year

ANSC 304, Feeds and Feeding .....	3
EPWS 310, Plant Pathology.....	4
Agricultural economics electives.....	3
Animal science, upper-division.....	3
Part III, General Education requirements .....	3
Elective.....	13
Plant science, upper-division .....	3

#### Behavioral Agricultural Science Option

##### Freshman year

AG E 100, Introductory Agricultural Economics and Business.....	3
AG E 250G, Life with Microcomputers .....	3
AXED 100, Introduction to Agricultural Extension Education .....	3
AXED 105, Techniques in Agricultural Mechanization .....	3
BIOL 111/111L, Natural History of Life/Lab.....	4
ENGL 111G, Rhetoric and Composition .....	4
MATH (Basic Skills).....	3-4
General education requirement (fine arts) .....	3
Agriculture, lower division .....	6-7

##### Sophomore year

AG E 305, Marketing and Pricing Agricultural Products.....	3
AXED 201G, Effective Leadership and Communication in Agricultural Organizations .....	3
AXED 303, Small Engine Technology .....	3
CHEM 110G, Principles and Applications of Chemistry .....	4
ECON 337G or 384G, Natural or Water Resource Economics (VWW).....	3
GEOL 111G, Survey of Geology .....	4
HIST 201G or 202G, Early or Recent American History.....	3

Agriculture, lower and upper division.....6  
 General education requirement (English).....3  
 MATH (General Education) .....3

**Junior year**

AXED 415 or 430, Youth Program Development and Management,  
 or Teaching Adults in Nonformal Settings .....3  
 PHYS 110G, The Great Ideas of Physics.....4  
 General education requirement (Human Thought and Behavior).....3  
 General education requirement (Social Analysis).....3  
 General education requirement (second VWW course).....3  
 Agricultural economics electives.....3  
 Agriculture, lower and upper division .....9-10  
 Electives .....6

**Senior year**

AXED 421 or 444, Curriculum and Instruction: The Problem-Solving Approach  
 in Vocational/Technical Education,  
 or Planning and Methods in Nonformal Education.....3  
 Agricultural mechanics, upper division.....3  
 Agricultural economics electives.....6  
 Agriculture, upper division .....12  
 Electives sufficient to bring total credits to 128

**Veterinary Medicine**

**(Preprofessional Training Only, Nondegree)**

The Doctor of Veterinary Medicine (D.V.M.) degree is a professional degree that is not offered by any college or university in New Mexico; however, you may complete at New Mexico State University the preparatory program required for admittance to the professional colleges of veterinary medicine.

The D.V.M. degree normally requires four years of training in a professional college subsequent to completion of a preveterinary program that requires at least three years of college-level instruction. In most instances a baccalaureate degree is a distinct advantage to the applicant.

Curriculum requirements are determined by the particular school or college of veterinary medicine. The Department of Animal and Range Sciences maintains current requirements for Colorado State University, Washington State, Oregon State, Texas A&M. You should check with an adviser for specific course requirements. As a student from New Mexico, you may be eligible for financial assistance under the program of the Western Interstate Commission for Higher Education (WICHE). See the section on WICHE in the "General Information" chapter under "Student Services" for more information.

**AGRICULTURAL  
 and EXTENSION EDUCATION**

**Professor Thomas J. Dormody, department head**

**Professors** Gleason, Hamilton, Holley, Seevers, VanLeeuwen;  
**Associate Professor** Rosencrans; **Assistant Professors** Castillo,  
 Chamberlin, Hodnett  
 (505) 646-4511

**DEGREE: Bachelor of Science in Agriculture**

**MAJOR: Agricultural and Extension Education**

**OPTION: Agricultural Education Teaching**

**OPTION: Extension and Nonformal Education**

**OPTION: Agricultural Communications**

**OPTION: Advanced Technology Education**

**MINOR: Agricultural and Extension Education**

The department offers a broad-based curriculum in agricultural, technology, and extension education with options for students interested in preparing for the many careers as professional educators in agriculture, technology, and related disciplines. A flexible curriculum allows you to develop individualized programs if you wish to prepare for a career as an agricultural or technology instructor, extension professional, media specialist, and agency and industry educational professional in domestic and/or international settings.

The department offers a minor in agricultural and extension education, which may be earned by completion of 18 credits in the department. The minor must include 9 credits of upper-division courses with a minimum of two courses at the 400 level.

**GENERAL REQUIREMENTS**

You must meet the general education and college requirements for the Bachelor of Science degree. You must establish a cumulative grade-point average of not less than 2.5 before you are admitted into the student teaching, extension field experience, or internship program. If you wish to teach in a public school, you must take/pass the New Mexico Assessment of Teacher Basic Skills before student teaching (AXED 447). And should take/pass the New Mexico Assessment of Secondary Level of the Teacher Competency before graduation. You need a minimum of 48 hours in technical agriculture for the secondary teaching certificate program in agriculture and are required to take 54 credit hours of upper-division courses (300+). In addition to the general education and technical subject matter requirements, you must complete all of the professional education courses in the option selected.

You may select technical courses required for completion of the major from the following areas: animal and range sciences; agricultural mechanics; agricultural economics; agronomy and soil sciences, horticultural science, entomology, plant pathology, and weed science; fishery and wildlife sciences; and engineering. Selected courses for the major's four options are:

**OPTION: Agricultural Education Teaching**

AXED 100, Introduction to Agricultural, Extension, and Technology Education .....3  
 AXED 201G, Effective Leadership and Communication in Agricultural Organizations.....3  
 AXED 230, Early Field-Based Experience.....1  
 AXED 440, Methods in Career and Technical Laboratory Instruction.....2  
 AXED 445, Planning and Methods in Career and Technical Education.....3  
 AXED 446, Methods of Teaching Agricultural and Technology Education .....6  
 AXED 447, Directed Teaching in Agricultural and Technology Education .6-10  
 RDG 414, Content Area Literacy .....3  
 SPED 350, Survey of Programs for Exceptional Learners .....3

**OPTION: Extension and Nonformal Education**

AXED 100, Introduction to Agricultural, Extension, and Technology Education .....3  
 AXED 201G, Effective Leadership and Communication in Agricultural Organizations.....3  
 AXED 230, Early Field-Based Experience.....1  
 AXED 360, Agricultural Communications .....3  
 AXED 415, Youth Program Development and Management.....3  
 AXED 444, Planning and Methods in Nonformal Education .....3  
 AXED 446, Methods of Teaching Agricultural and Technology Education .....6  
 AXED 448, Directed Teaching in Extension Education .....4-10

**OPTION: Agricultural Communications**

AXED 100, Introduction to Agricultural, Extension, and Technology Education .....3  
 AXED 201G, Effective Leadership and Communication in Agricultural Organizations.....3  
 AXED 230, Early Field-Based Experience.....1  
 AXED 360, Agricultural Communications .....3  
 AXED 444, Planning and Methods in Nonformal Education .....3  
 AXED 449, Internship in Agricultural or Technology Education .....4-10  
 AXED 490, Independent Study in Agricultural Communications .....3  
 JOUR 105G, Introduction to Mass Communications.....3  
 JOUR 110, Writing for the Mass Media .....3  
 JOUR 210, Writing for the Print Media.....3  
 JOUR 313, Radio Reporting .....3  
 JOUR 319, Photojournalism I .....3  
 JOUR 374, Principles of Public Relations .....3

**OPTION: Advanced Technology Education**

AXED 100, Introduction to Agricultural, Extension, and Technology Education .....3  
 AXED 201G, Effective Leadership and Communication in Agricultural Organizations.....3  
 AXED 440, Methods in Career and Technical Laboratory Instruction.....2

AXED 445, Planning and Methods in Career and Technical Education.....	3
AXED 446, Methods of Teaching Agricultural and Technology Education.....	6
AXED 447, Directed Teaching in Agricultural or Technology Education.....	6-10
EDUC 315, Multicultural Education.....	3
E T 317, Manufacturing Technology.....	3
E T 320, Applications Software for Engineering Technologists.....	3
E T 340/341, AC and DC Circuits and Lab.....	5
E T 342, Digital Electronics I.....	3
E T 357, Introduction to Security Technology.....	3
E T 365, Building Utilities.....	3
E T 479, Developing and Managing Educational Networks.....	3
E T 480, Design and Problem Solving in Engineering and Technology.....	3
RDG 414, Content Area Literacy.....	3
SPED 350, Survey of Programs for Exceptional Learners.....	3

**MINOR: Agricultural and Extension Education**

The department offers a minor in agricultural and extension education, which may be earned by completion of 18 credits in the department. The minor must include 9 credits of upper-division courses with a minimum of two courses at the 400 level.

**Accreditation**

The Department of Agricultural and Extension Education is accredited by the National Council for the Accreditation of Teacher Education.

## AGRICULTURAL ECONOMICS and AGRICULTURAL BUSINESS

**Professor Octavio A. Ramirez, department head**

**Professors** Catlett, Clary, Diemer, Falk, Fowler, Gorman, Libbin, Skaggs, Torell, Ward; **Assistant Professors** Hadjigeorgalis, Hurd, Lillywhite; **College Associate Professor** Bullock, Crawford; **College Assistant Professor** Hawkes; **Adjunct Associate Professor** Dewitt; **Adjunct Assistant Professor** Alvarez (505) 646-3215

**DEGREE: Bachelor of Science in Agriculture****MAJOR: Agricultural Economics and Agricultural Business****AREAS OF CONCENTRATION:**

**Farm Business Management**  
**Ranch Business Management**  
**Marketing and Sales**  
**Business Management**  
**Finance**  
**Computer Applications and Data Management**  
**Agricultural Communications**  
**Natural Resources Management**  
**Agricultural Chemical Sales**  
**Agricultural Records and Financial Controls**  
**International Agricultural Business**  
**International Development**  
**Environmental Economics**  
**Pre-Law**  
**MS-Prep**

**COLLEGE REQUIREMENTS**

College required constants are listed under the heading "College of Agriculture and Home Economics." Specific courses meeting these and the university general education requirements are included below in departmental requirements. A total of 128 credits are required for graduation. At least 54 credits must be at the 300+ level. You will develop schedules for specific semesters with the help of your academic adviser.

**GENERAL AND DEPARTMENTAL REQUIREMENTS****Verbal and Written**

ENGL 111G, Rhetoric and Composition.....	4
ENGL 203G, 211G, 218G, 311G, or 318G.....	3

COMM 253G or 265G or AXED 201G.....	3
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**Quantitative**

MATH 115, Intermediate Algebra.....	3
MATH 142G, Calculus for the Biological and Management Sciences I.....	3
E ST 311G, Statistical Applications.....	3

**Computer**

AG E 250G, Life with Microcomputers.....	3
AG E 450G, Advanced Microcomputer Applications in Agriculture.....	3

**General Education**

General education courses are designated by a G suffix in the list of general education courses in the "General Information" chapter.

General education science with lab.....	4
Historical Perspectives.....	3
Human Thought/Behavior.....	3
Literature or Fine Arts.....	3
Viewing a Wider World.....	6

**General Business**

ACCT 251, Management Accounting.....	3
ACCT 252, Financial Accounting.....	3
MKTG 300+ course.....	3
MGT 309, Human Relations in Business or MGT 332, Human Resources Management.....	3
FIN 341, Financial Analysis and Markets.....	3
BLAW 317, Business Law I, or BLAW 316, Legal Environment of Business....	3

**Economic Theory**

ECON 251G, Principles of Macroeconomics.....	3
ECON 252G, Principles of Microeconomics.....	3
ECON 371, Intermediate Microeconomic Theory.....	3
ECON 372, Intermediate Macroeconomic Theory.....	3

**Applied Economics/Business**

AG E 100, Introductory Agricultural Economics and Business.....	3
AG E 236, Agribusiness Management Principles.....	3
AG E 305/MKTG 305, Marketing and Pricing Agricultural Products.....	3
AG E 337G/ECON 337G, Natural Resource Economics or AG E 384G/ECON 384G, Water Resource Economics.....	3
AG E 400, Seminar.....	1
AG E 425, Agribusiness Financial Management.....	3
AG E 445G, Agricultural Policy.....	3
AG E 385, Applied Production Economics.....	3
AG E 499, Senior Project or AG E 456, Agribusiness Management.....	3

In addition to the department and general requirements listed above, you may also select 15 hours from one of the fifteen available areas of concentration. The specific class requirements for each option are on file in the department and are available either through general advising and/or by request.

## AGRONOMY and HORTICULTURE

**Professor Paul W. Bosland, interim department head****Professor John G. Mexal, assistant department head**

**Professors** Bosland, Daugherty, Guldan, Harrington, Lindemann, Mexal, Monger, O'Connell, Sammis, Sengupta-Gopalan; **Associate Professors** Cramer, Flynn, Picchioni, Ray, St. Hilaire, Ulery; **Assistant Professors** Bottoms, Goss, O'Neill, Silva, Zhang (505) 646-3405; (505) 646-6041 (fax); (866) 884-7231 (toll free number)

**DEGREE: Bachelor of Science in Agriculture****MAJOR: Agronomy****OPTION: Crop Consulting****OPTION: Plant Genetics****OPTION: General Agronomy**

**OPTION: Agronomic Business**  
**OPTION: Agronomic Journalism**

**MAJOR: Horticulture**  
**OPTION: Ornamental Horticulture**  
**OPTION: Landscape Design**  
**OPTION: Horticulture Business**  
**OPTION: Crop Consulting**  
**OPTION: Plant Genetics**

**MAJOR: Soil Science**  
**OPTION: Soils**  
**OPTION: Environment and Resource Management**  
**OPTION: Soil and Water Science**

**DEGREE: Bachelor of Science in Environmental Science**

**MAJOR: Environmental Science**  
**OPTION: Soils**  
**OPTION: Water**  
**OPTION: Chemistry**  
**OPTION: Geology**  
**OPTION: Wildlife**  
**OPTION: Environmental Economics**  
**OPTION: Spacial Analysis**

The undergraduate program in agronomy and horticulture prepares you for a variety of careers in agriculture and related fields. Accordingly, a flexible curriculum has been designed that will allow specific programs to be developed in consultation with the your academic adviser. Programs may also be developed if you wish to prepare for advanced studies in graduate school. In addition to the courses listed for each major, 35 credits must be taken in the College of Agriculture and Home Economics, and the university general education requirements must be met.

**DEGREE: Bachelor of Science in Agriculture**

**MAJOR: Agronomy**

Agronomy is an understanding of the principles of plant and soil science and an application of these principles in the production of crops. Commercial sector careers include positions in agricultural consulting companies, agricultural seed or chemical companies, research and development with commercial companies, and farm and/or ranch management. Careers in county, state or federal agencies are in the areas of USDA, Cooperative Extension Service, Soil Conservation Service, Forest Service and Bureau of Land Management.

**Requirements of Agronomy Major**

At least 24 credits from agronomy and soil science courses with a grade of C or above, including the following:

AGRO 100G, Introduction to Plant Science .....	4
AGRO 305, Principles of Genetics .....	3
AGRO 365, Principles of Crop Production .....	4
AGRO 447, Seminar .....	1
AGRO 483, Sustainable Production of Agronomic Crops .....	3
SOIL 252, Soils.....	3
SOIL 252L, Soils Laboratory.....	1
SOIL 312, Soil Management and Fertility.....	3
SOIL 312L, Soil Management and Fertility Lab .....	1
Other required courses include:	
AG E 250G, Life with Microcomputers .....	3
BIOL 111G, Natural History of Life, or BIOL 211G, Cellular and Organismal Biology .....	3
CHEM 111, 112, General Chemistry I, II.....	8
CHEM 211, Organic Chemistry .....	4
EPWS 311, Weed Science; or EPWS 303, Economic Entomology; or EPWS 310, Plant Pathology.....	4
E ST 311G, Statistical Applications .....	3
MATH – to equal the proficiency level of MATH 142G or MATH 185 .....	3

Five options are available in the agronomy major. In addition to the completion of the requirements of the major listed above, you must elect an option and complete 25 credits from the requirements for that option. The

Agronomic Business and Agronomic Journalism options may be satisfied by obtaining a minor in business administration through the College of Business Administration and Economics or by obtaining a minor in journalism and mass communications through the College of Arts and Sciences, respectively. To deviate from the courses required within an option, you must file a formal petition, subject to approval by departmental committee. You should develop a specific program of study in consultation with a departmental agronomy adviser.

**OPTION: Crop Consulting**

*Required courses marked with an asterisk (\*).*

AGRO 365, Principles of Crop Production* .....	4
AGRO 462, Plant Breeding*.....	3
AGRO 492, Diagnosing Plant Disorders*.....	3
AG E 236, Agribusiness Management Principles .....	3
AG E 315G, World Agriculture and Food Problems .....	3
AG E 450, Advanced Microcomputer Applications in Agriculture.....	3
AGRO 311, Weed Science .....	4
B A 202, Small Business Enterprise.....	3
EPWS 314, Plant Physiology .....	3
EPWS 455, Advanced Insect Pest Management.....	3
EPWS 456, Biological Control.....	3
HORT 471, Plant Mineral Nutrition .....	3
HORT 485, Vegetable Crop Management.....	3
SOIL 312, Soil Management and Fertility.....	3
SOIL 312L, Soil Management and Fertility Lab .....	1
SOIL 456, Irrigation and Drainage .....	3
SPAN 111, Elementary Spanish I .....	4
SPAN 211, Intermediate Spanish I .....	3

**OPTION: Plant Genetics**

*Required courses marked with an asterisk (\*).*

AGRO 303G, Genetics and Society.....	3
AGRO 305L, Genetics Techniques.....	1
AGRO 340, Plant Tissue Culture Methods.....	3
AGRO 449, Special Problems (Independent Research) .....	1-3
AGRO 462, Plant Breeding.....	3
AGRO 486, Intermediate Genetics*.....	3
ANSC 423, Animal Breeding .....	3
BIOL 431, Genetic Aspects of Population Biology .....	3
BIOL 467, Evolution.....	3
BIOL 478, Molecular Biology of Microorganisms .....	3
CHEM 341, Survey of Biochemistry* .....	3
EPWS 314, Plant Physiology*.....	3
HORT 452, Independent Studies in Bioinformatics.....	1-3
MOLB 470, Genome Analysis and Bioinformatics .....	3

**OPTION: General Agronomy**

*Required courses marked with an asterisk (\*).*

AG E 236, Agribusiness Management Principles .....	3
AG E 305, Marketing and Pricing Agricultural Products.....	3
AG E 315G, World Agriculture and Food Problems .....	3
AGRO 357, Climatology .....	3
AGRO 391, Internship.....	1-3
AGRO 471, Plant Mineral Nutrition*.....	3
AGRO 492, Diagnosing Plant Disorders*.....	3
BIOL 312, Plant Taxonomy .....	4
BIOL 313, Structure and Function of Plants*.....	4
BLAW 316, Legal Environment of Business.....	3
EPWS 314, Plant Physiology .....	3
HORT 250, Plant Propagation.....	3
HORT 350, Arboriculture .....	3
HORT 485, Vegetable Crop Management.....	3
RGSC 294, Rangeland Resource Management.....	3
RGSC 325, Rangeland Restoration Ecology.....	3
RGSC 465, Public Lands Policy and Analysis.....	3
SOIL 456, Irrigation and Drainage .....	3
SUR 221, General Surveying .....	3

**OPTION: Agronomic Business**

ACCT 251, Management Accounting .....	3
ACCT 252, Financial Accounting.....	3
AG E 236, Agribusiness Management Principles .....	3

B A 202, Small Business Enterprise.....	3
ECON 251G, Principles of Macroeconomics.....	3
ECON 252G, Principles of Macroeconomics.....	3
MKTG 313, Retail Management.....	3
Four of the following courses:	
BLAW 316, Legal Environment of Business.....	3
FIN 306, Principles of Finance.....	3
MGT 315G, Human Relations in Organizations.....	3
MGT 344, Production and Operations Management.....	3
MKTG 303, Principles of Marketing.....	3

**OPTION: Agronomic Journalism**

BLAW 316, Legal Environment of Business.....	3
COMM 421, Interviewing.....	3
GOVT 343, Domestic Policy.....	3
JOUR 210, Writing for the Print Media.....	3
JOUR 290, Radio-Television Production I.....	3
JOUR 300, Introduction to Advertising.....	3
JOUR 310, Print Reporting I.....	3
JOUR 313, Radio Reporting.....	3
JOUR 319, Photojournalism I.....	3
JOUR 374, Introduction to Public Relations.....	3
MKTG 303, Principles of Marketing.....	3
MKTG 314, Advertising Strategy.....	3

**DEGREE: Bachelor of Science in Agriculture****MAJOR: Horticulture**

Horticulture includes a wide variety of topics that relate to fruit, vegetable, and ornamental crops, and their uses. Careers range from production management to processing and marketing, retail and wholesale management, greenhouse and nursery production, floriculture, landscaping, turf management, research and development, various service activities and positions with local, state, and federal agencies.

**Requirements of Horticulture Major**

Each of the following courses is required:

BIOL 111G, Natural History of Life, or BIOL 211G, Cellular and Organismal Biology.....	3
BIOL 314, Plant Physiology.....	3
CHEM 111, 112, General Chemistry I, II or CHEM 114 and CHEM 211.....	8
EPWS 303, Economic Entomology.....	4
EPWS 310, Plant Pathology.....	4
HORT 447, Seminar.....	1
MATH 142G, Applied Mathematics for the Biological and Social Sciences; or MATH 185, College Algebra.....	3
SOILS 252, Soils.....	3

At least 29 credits from horticulture courses with a grade of C or above.

Choose from the following courses:

HORT 100G, Introductory Plant Science.....	4
HORT 115, Introduction to Forestry.....	3
HORT 200, Special Topics.....	1-4
HORT 210, Ornamental Plants I.....	4
HORT 211, Ornamental Plants II.....	4
HORT 240, Floral Quality Evaluation and Design.....	2
HORT 241, Floriculture Field Practicum.....	1
HORT 250, Plant Propagation.....	3
HORT 300, Special Topics.....	1-4
HORT 301, Introduction to Landscape Horticulture.....	3
HORT 302G, Forestry and Society.....	3
HORT 305, Principles of Genetics.....	3
HORT 305L, Genetics Techniques.....	1
HORT 307, Landscape Design.....	3
HORT 308, Landscape Construction.....	3
HORT 310, Medicinal Herbs.....	3
HORT 310L, Medicinal Herbs Laboratory.....	1
HORT 330, Organic Fall Vegetable Production (f).....	3
HORT 331, Organic Spring Vegetable Production (s).....	3
HORT 340, Plant Tissue Culture Methods.....	3
HORT 350, Arboriculture.....	2
HORT 360, Biological Information Systems.....	3
HORT 365, Principles of Crop Production.....	4
HORT 391, Internship.....	1-3

HORT 401, Turf Management.....	4
HORT 420, Postharvest Biology and Technology.....	4
HORT 447, Seminar.....	1
HORT 449, Special Problems.....	1-3
HORT 450, Special Topics.....	1-4
HORT 452, Independent Studies in Bioinformatics.....	1-3
HORT 460, System Analysis & Automation in Biological Laboratories.....	3
HORT 462, Plant Breeding.....	3
HORT 465, Landscape Case Studies.....	3
HORT 471, Plant Mineral Nutrition.....	3
HORT 475, Woody Plant Physiology.....	3
HORT 484, Ornamental Plant Production and Management.....	4
HORT 485, Vegetable Crop Management.....	4
HORT 486, Intermediate Genetics.....	3
HORT 488, Greenhouse Management.....	4
HORT 492, Diagnosing Plant Disorders.....	3

Five options are available in the horticulture major. In addition to the completion of the requirements of the major listed above, you must elect an option and complete the requirements for that option. You should develop a specific program of study in consultation with a departmental horticulture adviser. If you want to apply for certification as a professional horticulturist, you should also complete HORT 305, Genetics, and either BCHE 341, Biochemistry, or CHEM 211, Organic Chemistry.

**OPTION: Ornamental Horticulture**

Select 4 courses from the following list:

HORT 210 or 211, Ornamental Plants I, II.....	4
HORT 250, Plant Propagation.....	3
HORT 301, Introduction to Landscape Horticulture.....	3
HORT 365, Principles of Crop Production.....	4
HORT 484, Ornamental Plant Production and Management.....	4
HORT 488, Greenhouse Management.....	4

Select 8 courses from the following list:

AG E 236, Agribusiness Management Principles.....	3
AG E 250G, Life with Microcomputers, or C S 110G, Computer Literacy.....	3
AG E 305, Marketing and Pricing Agricultural Products, or MKTG 303, Principles of Marketing.....	3
AG E 425, Agribusiness Financial Management.....	3
AGRO 311, Weed Science.....	4
BIOL 301, Principles of Ecology.....	3
BIOL 313, Structure and Function of Plants.....	3
BLAW 316, Legal Environment of Business.....	3
EPWS 452, Applied Pesticide Technology.....	3
EPWS 456, Biological Control.....	3
MGT 315G, Human Relations in Organizations.....	3
MKT 313, Retail Management.....	3
SOIL 312, Soil Management and Fertility.....	3

**OPTION: Landscape Design**

Required courses:

HORT 210, Ornamental Plants I.....	4
HORT 211, Ornamental Plants II.....	4
HORT 307, Landscape Design.....	3
HORT 308, Landscape Construction.....	3
HORT 465, Landscape: Case Studies.....	3

Select 8 courses from the following:

A EN 372, Landscape Irrigation Design or A EN 479, Irrigation Systems Design and Management.....	3
AG E 236, Agribusiness Management Principles.....	3
AG E 250G, Life with Microcomputers or C S 110G, Computer Literacy.....	3
AG E 437, Resource Economics for Engineers and Planners.....	3
ART 150, Drawing I or ART 151, Drawing II.....	3
AXED 331, Agricultural Structures.....	3
BLAW 316, Legal Aspects of Planning.....	3
BLAW 385G, Consumers and Law.....	3
E T 106, Technical Drawing.....	2
MGT 315G, Human Relations in Organizations.....	3
MKTG 303, Principles of Marketing.....	3
OEMN 150, Landscape Irrigation Systems.....	4

PLAN 201, Introduction to Planning and Community Development.....	3
PLAN 301, Legal Aspects of Planning.....	3
SOIL 350, Soils and Land Use.....	3
SPAN 111, Beginning Spanish.....	3

**OPTION: Horticulture Business****Select 8 courses from the following list:**

For this option to satisfy the minor in Business Administration, nine credits must be upper division and nine credits must have one of the following prefixes: ACCT, BUSA, ECON, FIN, MGT, MKTG.

ACCT 251, Management Accounting.....	3
ACCT 252, Financial Accounting.....	3
AG E 236, Agribusiness Management Principles.....	3
AG E 250G, Life with Microcomputers.....	3
AG E 425, Agribusiness Financial Management.....	3
AG E 450, Advanced Microcomputer Applications in Agriculture.....	3
BLAW 316, Legal Environment of Business.....	3
BUSA 111, Business in a Global Society.....	3
ECON 251G, Principles of Macroeconomics.....	3
ECON 252G, Principles of Microeconomics.....	3
E ST 311G, Statistical Applications.....	3
FIN 306, Principles of Finance.....	3
MGT 309, Human Behavior in Organizations.....	3
MGT 315G, Human Relations in Organizations.....	3
MGT 332, Human Resources Management.....	3
MKTG 303, Principles of Marketing.....	3
MKTG 305, Marketing and Pricing Agricultural Products.....	3
MKTG 313, Retail Management.....	3

**OPTION: Crop Consulting****Select 4 courses from the following list:**

HORT 365, Principles of Crop Production.....	4
HORT 420, Postharvest Biology and Technology.....	4
HORT 462, Plant Breeding.....	3
HORT 471, Plant Mineral Nutrition.....	3
HORT 485, Vegetable Crop Management.....	3
HORT 492, Diagnosing Plant Disorders.....	3

**Select 8 courses from the following:**

AG E 236, Agribusiness Management Principles.....	3
AG E 250G, Life with Microcomputers.....	3
AG E 315G, World Agriculture and Food Problems.....	3
AG E 450, Advanced Microcomputer Applications in Agriculture.....	3
AGRO 311, Weed Science.....	4
AGRO 483, Sustainable Production of Agronomic Crops.....	3
BIOL 301, Principles of Ecology.....	3
BIOL 313, Structure and Function of Plants.....	3
EPWS 372, Fungal Biology.....	3
EPWS 455, Advanced Insect Pest Management.....	3
EPWS 456, Biological Control.....	3
EPWS 481, Plant Nematology.....	3
HNFS 320, Food Microbiology.....	3
HNFS 421, Food Chemistry.....	3
SOIL 312, Soil Management and Fertility.....	3
SOIL 456, Irrigation and Drainage.....	3
SOIL 475, Soil Microbiology.....	3
SPAN 111, Elementary Spanish I.....	4
SPAN 211, Intermediate Spanish I.....	3

**OPTION: Plant Genetics****Required courses:**

CHEM 211, Organic Chemistry.....	4
BCHE 341, Survey of Biochemistry.....	3
BCHE 342, Introductory Biochemistry Laboratory.....	1
E ST 311G, Statistical Applications.....	3
HORT 305, Principles of Genetics.....	3

**Select at least 15 credits from the following courses:**

AGRO 303G, Genetics and Society.....	3
ANSC 423, Animal Breeding.....	3
BCHE 396, Biochemistry and Biotechnology.....	3

BCHE 397, Experimental Biochemistry Laboratory.....	3
BCHE 494, Techniques in Genetic Engineering.....	4
BIOL 440, Molecular Systematics.....	3
BIOL 467, Evolution.....	3
BIOL 478, Molecular Biology of Microorganisms.....	3
EPWS 301, Agricultural Biotechnology.....	3
E ST 456, Statistical Methods and Data Analysis.....	3
HORT 305L, Genetics Techniques.....	1
HORT 340, Plant Tissue Culture Methods.....	3
HORT 449, Special Problems.....	1-3
HORT 452, Independent Studies in Bioinformatics.....	1-3
HORT 462, Plant Breeding.....	3
HORT 486, Intermediate Genetics.....	3
MOLB 470, Genome Analysis and Bioinformatics.....	3

**DEGREE: Bachelor of Science in Agriculture****MAJOR: Soil Science**

Soil scientists are concerned with the physical, chemical, and biological characteristics and behaviors of soils, their description and classification, and their management for both agricultural and nonagricultural uses. Career opportunities include jobs with industry, environmental consulting firms, and federal, state, and local governments working on various environmental, agricultural, and ecological projects.

**Requirements of Soil Science Major**

In addition to the courses listed for each major, you must take 35 credits in the College of Agriculture and Home Economics, and you must meet university general education requirements. At least 24 credits of soil science related courses with a grade of C or above including:

SOIL 252, Soils.....	3
SOIL 252L, Soils Laboratory.....	1
SOIL 312, Soil Management and Fertility.....	3
SOIL 447, Seminar.....	1

**Four of the following courses:**

SOIL 424, Soil Chemistry.....	3
SOIL 456, Irrigation and Drainage.....	3
SOIL 472, Soil Morphology and Classification.....	4
SOIL 476, Soil Microbiology.....	3
SOIL 477, Soil Physics.....	3

**Other required courses include:**

Two courses (6 credits) from the following:

BIOL 111G, Natural History of Life.....	3
BIOL 211G, Cellular and Organismal Biology.....	3
BIOL 311, Microbiology.....	3
CHEM 111, 112, General Chemistry I, II.....	8
One additional CHEM course above CHEM 200, except CHEM 310G.....	3-4
GEOL 111G, Survey of Geology.....	4
MATH 142G, Applied Mathematics for the Biological and Social Sciences I or MATH 191, Calculus and Analytic Geometry 1.....	3
PHYS 211, General Physics I.....	4
A computer-oriented course above C S110G approved by the department.....	2-4

**Soil Science Options**

Three options are available in soil science. In each case, your academic adviser has a list of appropriate courses.

**OPTION: Soils**

Crop production and plant growth are emphasized in the general soils option. Soil management, soil conservation, and soil reclamation are related to plant growth for those students interested in both private industry and government employment opportunities as well as farm management. You must select one course from each of the four following subject matter areas and a total of at least ten courses (30 credits): soil, water or range management; crop production or protection; farm and ranch management and economics; math, statistical, or computer sciences.

**OPTION: Environment and Resource Management**

Soil science is integrated into the management of the environment and natural resources. Students interested in careers of conservation, environ-

mental management, urban planning, waste disposal, and related fields in government and industry may choose from a variety of course offerings. The economic and social implications as well as the technological aspects of resource management are included in the option courses. You must select one course from each of the four following subject matter areas and a total of at least ten courses (30 credits): soil, water, wildlife, or range conservation and economics; ecology, plant biology, or crop production; earth, mineral, or climactic resources; math, statistical, or computer sciences.

#### OPTION: Soil and Water Science

The soil and water science option is for students interested in careers in water management and water quality. Employment opportunities exist with irrigation districts, consulting firms, and government agencies dealing with water management and quality. The optimum use of water in semi-arid areas is emphasized through selection of courses in the technical and social sciences. You must select one course from each of the four following subject matter areas and a total of at least ten courses (30 credits): soil and water engineering; ecology; crop production and protection; math, statistical, or computer sciences.

#### DEGREE: Bachelor of Science in Environmental Science

##### MAJOR: Environmental Science

The environmental science major is a multidisciplinary program based on a strong general science curriculum and an environmental curriculum that focuses on environmental problems and solutions. Options permit an area of specialty. Although administered by the Department of Agronomy and Horticulture, a multidisciplinary advisory committee recommends curriculum and other changes to the program. The program is rigorous to make graduates competitive for environmentally oriented careers in industry and government. You must earn at least a grade of C in the Basic Background, Core Requirements, and Options courses.

#### Basic Background Courses

BIOL 111G, Natural History of Life .....	3
BIOL 211G, Cellular and Organismal Biology .....	3
BIOL 311, Microbiology .....	3
C E 151, Introduction to Civil Engineering.....	3
CHEM 111, CHEM 112, General Chemistry I, II .....	8
CHEM 211, Organic Chemistry .....	4
E ST 311G, Statistical Applications .....	3
GEOG 111G, Geography of the Natural Environment.....	4
GEO 111G, Survey of Geology .....	4
MATH 191, MATH 192, Calculus and Analytic Geometry I, II.....	6
PHYS 215, Engineering Physics I.....	3
SOIL 252, Soils.....	3
SOIL 252L, Soils Laboratory.....	1

#### Core Requirements

E S 110G, Introduction to Environmental Science .....	4
E S 256, Environmental Science .....	3
E S 301, Principles of Ecology.....	3
E S 312, Emergency Response to Hazardous Material Incidents .....	2
E S 330, Environmental Management Seminar I.....	1
E S 361, Basic Toxicology .....	3
E S 370, Environmental Soil Science .....	3
E S 422, Environmental Chemistry .....	3
E S 430, Environmental Management Seminar II.....	1
E S 452, Geohydrology .....	3
E S 453, Regulatory Toxicology.....	2
E S 458, Ecology of Inland Waters.....	3
E S 462, Sampling and Analysis of Environmental Contaminants .....	3
E S 470, Environmental Impacts of Land Use.....	4

#### Options

One option (area of specialty) must be chosen by the student. Seven options are available (chemistry, geology, soils, wildlife, water, special analysis and environmental economics). Four upper-division courses (12 credits) from a short list are selected by the student. Advisers have lists of the appropriate sources for each option.

## ANIMAL and RANGE SCIENCES

**Professor Mark M. Wise, department head**

**Professor Tim T. Ross, assistant department head**

**Professors** Allred, Hallford, Hawkins, Holechek, McDaniel, Petersen, Ross, J. Thomas; **Associate Professors** Bailey, Burcham; M. Thomas; **Assistant Professors** Abbott, Cibils, Fernald, Soto, Ivey, Löest, Turner; **Co-operators (USDA)** Anderson, Barrow, Estell, Fredrickson, Gibbens, Havstad, Herrick, Peters, Sullivan (CES)  
**(505) 646-2514; ascience@nmsu.edu**

**DEGREE: Bachelor of Science in Agriculture**

**MAJOR: Animal Science**

**OPTION: Animal Industry**

**OPTION: Science**

**OPTION: Food Technology**

**MAJOR: Rangeland Resources**

**MINORS: Range Science**

**Livestock Production**

**Horse Management**

The Department of Animal and Range Sciences provides opportunities for you to follow a variety of interests in modern scientific agriculture. The animal science curriculum provides a background for many phases of the food animal industry, from farm animal production on rangelands to management positions in the food processing industry to highly technical careers in research. The range science curriculum provides you with knowledge necessary to deal with all aspects of the multiple uses of rangelands. These curricula allow you to acquire the background necessary to adjust easily to variations in specific job opportunities. If you are majoring in either animal science or range science, you must meet general education requirements, have a minimum of 54 credits of upper-division courses (numbered 300 and above), and complete a minimum of 35 credits in courses with Agriculture and Home Economics prefixes.

**DEGREE: Bachelor of Science in Agriculture**

**MAJOR: Animal Science**

The animal industry option includes courses that prepare you for work in many phases of the livestock industry, such as livestock production on farms and ranches, the meat industry, the feed industry, livestock breed associations, and livestock publications. The science option provides you with a strong background in technical science and prepares you for advanced studies leading to graduate or professional degrees. Food technology option prepares you for a career in food processing, which includes meat, dairy, and other food-related areas.

#### Animal Science Core of Requirements (Required of Industry and Science options)

ANSC 100, Introductory Animal Science .....	3
ANSC 303, Livestock, Meat, and Wool Evaluation, or both ANSC 265 and ANSC 355, Horse Judging.....	4
ANSC 304, Feeds and Feeding .....	3
ANSC 305, Principles of Genetics .....	3
ANSC 370, Anatomy and Physiology of Farm Animals.....	4
ANSC 402, Animal Science Seminar .....	1
ANSC 421, Physiology of Reproduction.....	3
ANSC 422, Animal Nutrition .....	3
ANSC 423, Animal Breeding .....	3
BIOL 111G/111L, Natural History of Life or BIOL 211G/211L, Cell and Organismal Biology .....	4
CHEM 111, General Chemistry .....	4
COMM 265G, Principles of Human Communication, or AXED 201G, Effective Leadership and Communication in Agricultural Organizations .....	3
ECON 201G, Introduction to Economics .....	3
ENGL 111G, Rhetoric and Composition.....	4

E ST 311G, Statistical Applications .....	3
MATH 142G, Calculus for the Biological and Management Sciences I, or MATH 185, College Algebra, or MATH 191, Calculus and Analytic Geometry I .....	3
RGSC 294, Rangeland Resource Management.....	3

**OPTION: Animal Industry**

ANSC 200, Introduction to Meat Animal Production .....	3
ANSC 220, Animal Science Career Development .....	1
ANSC 261, Introduction to Animal Metabolism.....	3
ANSC 325, Mastering Financial Agricultural Statements.....	3
Meat science electives (two courses): ANSC 262, ANSC 301, ANSC 306, or ANSC 363 .....	6
Production electives (three courses): any three production courses offered in the department.....	9
Plant science electives (one course): RGSC 307, RGSC 318, RGSC 325, RGSC 440, SOIL 252, AGRO 365 .....	3-4
Business electives (one course): ACCT 251, AG E 305, AGE 440, FIN 303G, MGT 315G, MGT 312 .....	3

**OPTION: Science**

BCHE 341, Biological Chemistry.....	4
CHEM 112, General Chemistry II.....	4
CHEM 211, Organic Chemistry, or CHEM 313, Organic Chemistry I.....	4
Meat science electives (one course): ANSC 262, ANSC 301, ANSC 306, ANSC 363 .....	3
Production electives (two courses): ANSC 314, ANSC 414, ANSC 415, ANSC 416, ANSC 417.....	6
Designated electives (one course): MATH 191, MATH 192, PHYS 211, 212, PHYS 211L, 212L .....	3-4
Designated electives (one course): ANSC 462, ANSC 480, ANSC 484, TOX 461 or TOX 361 .....	3
Credits sufficient to bring total to 128.	

**OPTION: Food Technology****Food Technology Core Requirements**

ANSC 100, Introductory Animal Science .....	3
HORT 100, Introductory Plant Science .....	3
HNFS 251, Human Nutrition .....	3
ANSC 262, Introduction to Meat Science .....	3
HNFS 263, Food Science I .....	3
ANSC 304, Feeds and Feeding .....	3
HNFS 320, Food Microbiology .....	3
HNFS 325, Food Analysis .....	3
ANSC 363, Meat Technology .....	3
ANSC 402, Animal Science Seminar .....	1
HNFS 421, Food Chemistry .....	3
ANSC 422, Animal Nutrition .....	3
HNFS 426, Dairy Products Manufacturing .....	3
HNFS 447, Experimental Foods .....	3
FCSC 400, Research Methods .....	3

**Other Designated Requirements**

CHEM 111, General Chemistry I .....	4
CHEM 112, General Chemistry II.....	4
CHEM 211, Organic Chemistry .....	4
BCHE 341, Survey of Biochemistry .....	4
PHYS 211 and 211 L, General Physics and Lab .....	4
E ST 311G, Statistical Applications .....	3
BIOL 211G and 211L, Cellular and Organismal Biology and Lab.....	4
ENGL 111G, Rhetoric and Composition .....	4
ENGL 318G, Technical and Scientific Communication (may substitute ENGL 203G, ENGL 211G, ENGL 218G, or ENGL 311G).....	3
MATH 142G, Calculus for Biological and Management Sciences (may substi- tute MATH 180 or MATH 185) .....	3
AXED 201, Effective Leadership and Communications in Agricultural Organi- zations (may substitute COMM 253 or COMM 265) .....	3
ECON 201, Introduction to Economics .....	3
AG E 250, Life with Microcomputers (may substitute C S 110G or BCS 110G) .....	3

**Designated ANSC Electives (Pick 9 credit hours)**

ANSC 301, Animal and Carcass Evaluation .....	3
ANSC 314, Swine Production .....	3
ANSC 261, Introduction to Animal Metabolism .....	3
ANSC 370, Animal and Physiology of Farm Animals .....	3
ANSC 390, Internship .....	3
ANSC 414, Sheep and Wool Production .....	3
ANSC 416, Beef Production .....	3
ANSC 417, Dairy Production.....	3
ANSC 461, Toxicology I .....	3

**MAJOR: Rangeland Resources**

The following course work prepares you for study and management of rangelands through an integrated ecological approach with special emphasis on rangeland plants, livestock, wildlife, soils, and watersheds. The course work is also well designed for those who want to continue study in graduate school. Any undergraduate student majoring in Range Science must earn a grade of C or higher in Range Science (RGSC prefix) courses to satisfy degree requirements. Students earning a D or F in a Range Science (RGSC prefix) course will be expected to repeat that course until the student earns a grade of C or higher. The following courses are required for a major in rangeland resources.

**Range Science Core Requirements**

AG E 250, Life with Microcomputers .....	3
ANSC 261, Principles of Animal Metabolism, or CHEM 211, Organic Chemis- try .....	3
BIOL 211G, Cell and Organismal Biology .....	3
BIOL 301, Ecology .....	3
CHEM 111, General Chemistry I .....	4
CHEM 112, General Chemistry II .....	4
COMM 265G, Principles of Human Communication, or AXED 201G, Effective Leadership and Communication in Agricultural Organizations .....	3
ECON 201G, Introduction to Economics; 251 G, Principles of Macroeconom- ics; or 252G, Principles of Microeconomics .....	3
EPWS 314, Plant Physiology .....	3
E ST 311 G, Statistical Applications .....	3
RGSC 150, Introduction to Range Science Major .....	1
RGSC 294, Rangeland Resource Management .....	3
RGSC 307, Rangeland Grasses .....	3
RGSC 316, Rangeland Plants .....	2
RGSC 317, Rangeland Communities .....	3
RGSC 318, Watershed Management .....	3
RGSC 325, Rangeland Restoration Ecology .....	3
RGSC 402, Seminar .....	1
RGSC 440, Rangeland Resource Ecology .....	4
RGSC 452, Rangeland Analysis .....	4
RGSC 460, Advanced Rangeland Management .....	4
SOIL 252, Soils .....	3
SOIL 252L, Soils Laboratory .....	1
SOIL 472, Soil Morphology and Classification .....	4
WLSC 255, Principles of Natural Resource Management .....	3

**MINOR: Horse Management**

A minor in Horse Management consists of at least 20 credits.

ANSC 103, Introductory Horse Science.....	3
ANSC 265, Horse Evaluation .....	2
ANSC 288, Horse Fitting and Selling.....	3
ANSC 289, Management of Equine Operations or ANSC 390, Internship ....	3
ANSC 304, Feeds and Feeding.....	3
ANSC 320, Applied Horsemanship or ANSC 321, Applied Horsemanship II.....	3
ANSC 383, Equine Reproductive Management or ANSC 415, Horse Production.....	3

**MINOR: Livestock Production**

A minor in Livestock Production consists of at least 19 credits

ANSC 100, Introductory Animal Science or ANSC 200, Introductions to Meat Animal Production.....	3
ANSC 262, Introduction to Meat Science.....	3
ANSC 303, Livestock, Meat, and Wool Evaluation.....	4
ANSC 304, Feeds and Feeding.....	3
Students must complete at least 2 courses from the following list: ANSC 314, Swine Production; ANSC 414, Sheep and Wool Production; ANSC 415, Horse Production; ANSC 416, Beef Production; ANSC 417, Dairy Production.....	6

**MINOR: Range Science**

A minor in Range Science consists of at least 18 credits.

RGSC 294, Rangeland Resource Management.....	3
RGSC 316, Rangeland Plants.....	2
RGSC 325, Rangeland Restoration Ecology.....	3
RGSC 452, Rangeland Analysis.....	4
Students must complete at least 2 courses from the following list:	
RGSC 302G, Forestry and Society.....	3
RGSC 307, Rangeland Grasses.....	3
RGSC 317, Rangeland Communities.....	3
RGSC 318, Watershed Management.....	3
RGSC 440, Rangeland Resource Ecology.....	4
RGSC 460, Advanced Rangeland Management.....	4

## ENTOMOLOGY, PLANT PATHOLOGY, and WEED SCIENCE

**Professor H. Grant Kinzer, department head**

**Professors** Byford, Ellington, Kemp, Lindsey, Schroeder, Sterling, Thomas; **Associate Professors** English, Pierce, Sanderson, Thompson; **Assistant Professors** Bundy, Creamer, Hanson, Sanogo; **Adjunct Professors** Banks, Berkson, Bleiweiss, Miller

(505) 646-3225

**DEGREE: Bachelor of Science in Agriculture**

**MAJOR: Agricultural Biology**

**OPTION: Agricultural Chemical Sales**

**Applied Biology**

**Entomology**

**Environmental Biology**

**Pest Management**

**MINORS: Pest Management**

**Entomology**

**Plant Pathology**

**Weed Science**

College requirements are 35 credits in the College of Agriculture and Home Economics. Specific courses that meet these and the university general education requirements and additional courses in biology, chemistry, mathematics, and seminar are included below in departmental requirements. A total of 128 credits are required for graduation. At least 55 credits must be 300-level courses and above. Schedules in specific semesters will be developed with the help of a student's academic adviser.

**DEGREE: Bachelor of Science in Agriculture**

**MAJOR: Agricultural Biology**

The agricultural biology course work prepares you for a variety of careers in the biological sciences and agriculture. You will develop your curriculum with an academic adviser to attain your individual goals. Many

will pursue advanced degrees in the sciences or prepare for admittance to professional schools (medical, dental, etc.). A diverse program is offered with five separate options that allow you to tailor your program for careers in the commercial sector, such as agricultural consulting, chemical sales, and pest management or for careers with county, state, or federal agencies, such as research technicians, inspectors, and extension agents.

**Departmental Requirements**

Courses marked with an asterisk (\*) are required to fulfill general education requirements.

AG E 250G, Life with Microcomputers, or C S 110G, Computer Literacy.....	3
ANSC/BIOL 305, Genetics.....	3
BIOL 111G, Natural History of Life, and BIOL 211G, Cellular and Organismal Biology.....	6
BIOL 311, General Microbiology.....	3
BIOL 313, Structure and Function of Plants, or BIOL 322, Zoology.....	3
CHEM 111, 112, General Chemistry I, II*.....	8
COMM 265G, Principles of Human Communication, or COMM 253G, Public Speaking, or AXED 201G, Effective Leadership and Communication in Agricultural Organizations*.....	3
ECON 201G, ECON 251G, or ECON 252G*.....	3
ENGL 111G, Freshman Composition*.....	4
ENGL 311G, Advanced Composition, or ENGL 318G, Advanced Technical and Professional Communication*.....	3
EPWS 100, Introduction to Pest Management.....	3
EPWS 100L, Pest Management Laboratory.....	1
EPWS 303, Economic Entomology.....	4
EPWS 310, Plant Pathology.....	4
EPWS 311, Weed Science.....	4
EPWS 447, Seminar.....	1
E ST311G, Statistical Applications*.....	3
SOIL 252, Soils.....	3

**General education electives from the following categories:**

• Historical Perspectives.....	3
• Human Thought and Behavior.....	3
• Literature or Fine Arts.....	3
• Viewing a Wider World.....	6

**Agricultural Biology Options**

In addition to the departmental requirements listed above, you must also complete all of the courses in at least one of the options listed below. Courses with higher numbered prefixes may replace courses listed as departmental requirements in some cases. Courses marked with an asterisk (\*) are required to fulfill general education requirements.

**OPTION: Agricultural Chemical Sales**

Offered jointly with the Department of Agricultural Economics and Agricultural Business.

ACCT 251, Management Accounting.....	3
BLAW 316, Legal Environment of Business.....	3
EPWS 390, Internship.....	2-3
EPWS 481, Nematology, or EPWS 462, Parasitology.....	3
EPWS 492, Diagnosing Plant Disorders.....	3
MATH 115, Intermediate Algebra or above.....	3
MATH 142G, Calculus for Biological and Management Sciences I*.....	3
MKTG 312, Personal Selling.....	3
PHYS 110G, Introduction to Physics or above.....	4
Approved Electives in AG E.....	9

**OPTION: Applied Biology/Preprofessional**

The Applied Biology option prepares you for professional advancement including admittance to medical, dental, veterinary, and graduate schools. Students interested in the health professions must register with the Health Professional Advisory Committee no later than the sophomore year.

BCHE 341, Survey of Biochemistry.....	4
CHEM 313, 314, 315, Organic Chemistry I, II, and Lab.....	8
MATH 180, Matrices and Linear Programming.....	3
MATH 185, College Algebra.....	3
MATH 191, 192, Calculus and Analytical Geometry I, II.....	6
PHYS 211, 211L, General Physics I, General Physics I Laboratory.....	4
PHYS 212, General Physics II.....	3

Choose two of the following courses:

ANSC 370, Anatomy and Physiology of Farm Animals; BIOL 312, Plant Taxonomy; BIOL 330, Comparative Anatomy and Embryology; BIOL 354, Physiology of Humans; BIOL 377, Cell Biology; EPWS 314, Plant Physiology; EPWS 434, Insect Taxonomy; EPWS 472, Mycology.....	6-8
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**OPTION: Environmental Biology**

The Environmental Biology option prepares you for professional positions in environmental impact, regulation, compliance, and improvement.

AGHE 380G, Ecosystem Earth.....	3
CH E 330, CH E 430, Environmental Seminars I, II.....	2
CHEM 211, Organic Chemistry.....	3
EPWS 314, Plant Physiology.....	3
EPWS 390, Internship.....	2-3
EPWS 451, Special Topics, Environmental Biology.....	3
MATH 115, Intermediate Algebra.....	3
MATH 142G, Calculus for Biological and Management Sciences I*.....	3
PHYS 211, 211L, General Physics I.....	4
SOIL 257, Meteorology.....	3
TOX 361, Basic Toxicology.....	3

**Electives may be chosen from the areas of:**

- Basic Science—biology, botany, zoology
- Environment—meteorology, pollution, agricultural practices, biodiversity
- Toxicology—pesticides, worker safety, food safety
- Communication skills
- Math, statistics, modeling

**OPTION: Entomology**

The Entomology option prepares you for graduate degrees in entomology. Emphasis is placed on a broad background in field and laboratory aspects of insect biology and management.

AGRO 471, Plant Mineral Nutrition.....	3
CHEM 313, 314, 315, Organic Chemistry I, II, and Lab.....	8
BCHE 341, Survey of Biochemistry.....	3
EPWS 314, Plant Physiology.....	3
EPWS 434, Insect Taxonomy, or EPWS 451, Special Topics or Immature Insects.....	3
EPWS 462, Parasitology.....	3
EPWS 481, Nematology.....	3
EPWS 491, Insect Physiology.....	3
EPWS 492, Diagnosing Plant Disorders.....	3
MATH 115, Intermediate Algebra or above.....	3
MATH 142G, Calculus for Biological and Management Sciences I*.....	3
PHYS 110G, Introduction to Physics or above.....	4

**OPTION: Pest Management**

The Pest Management option prepares you for careers such as agricultural consulting, chemical sales, insect, weed and disease management, research technicians, inspectors, and extension agents. You can also go on to graduate programs in many applied biology/pest management programs.

AGRO 471, Plant Mineral Nutrition.....	3
CHEM 211, Organic Chemistry.....	4
EPWS 314, Plant Physiology.....	3
EPWS 434, Insect Taxonomy, or EPWS 451, Special Topics or Immature Insects.....	3
EPWS 452, Pesticide Toxicology.....	3
EPWS 455, Advanced Insect Pest Management, or EPWS 456, Biological Control.....	3
EPWS 481, Plant Nematology, or EPWS 462, Parasitology.....	3
EPWS 492, Diagnosing Plant Disorders.....	3
MATH 115, Intermediate Algebra or above.....	3
MATH 142G, Calculus for Biological and Management Sciences I*.....	3
PHYS 110G, Introduction to Physics or above.....	4
SOIL 312, Soil Management and Fertility.....	4

**MINORS**

Courses marked with † are required for the minor.

**MINOR: Pest Management (18 credits)**

EPWS 100, Introduction to Pest Management.....	3
EPWS 100L, Introduction to Pest Management Lab.....	1
†EPWS 303, Economic Entomology.....	4
†EPWS 310, Plant Pathology.....	4
†EPWS 311, Weed Science.....	4
EPWS 434, Insect Taxonomy.....	3
Upper-division EPWS course(s).....	3-6

**MINOR: Entomology (18 credits)**

EPWS 100, Introduction to Pest Management.....	3
EPWS 100L, Introduction to Pest Management Lab.....	1
†EPWS 303, Economic Entomology.....	4
EPWS 434, Insect Taxonomy.....	3
EPWS 451, Special Topics.....	3-9
EPWS 455, Advanced Insect Pest Management.....	3
EPWS 456, Biological Control.....	3
EPWS 462, Parasitology.....	3
EPWS 491, Insect Physiology.....	3

**MINOR: Plant Pathology (18 credits)**

BIOL 311, General Microbiology.....	3
BIOL 311L, General Microbiology Lab.....	1
EPWS 100, Introduction to Pest Management.....	3
EPWS 100L, Introduction to Pest Management Lab.....	1
†EPWS 310, Plant Pathology.....	4
EPWS 314, Plant Physiology.....	3
EPWS 449, Special Problems in Plant Pathology.....	1-3
†EPWS 472, Mycology.....	3
†EPWS 481, Plant Nematology.....	3
EPWS 492, Diagnosing Plant Disorders.....	3

**MINOR: Weed Science (18 credits)**

BIOL 312, Plant Taxonomy.....	4
BIOL 470, Plant Community Ecology.....	3
EPWS 100, Introduction to Pest Management.....	3
EPWS 100L, Introduction to Pest Management Lab.....	1
†EPWS 311, Weed Science.....	4
†EPWS 314, Plant Physiology.....	3
†EPWS 449, Special Problems in Weed Science.....	1-3
EPWS 452, Applied Pesticide Toxicology.....	3

## FAMILY and CONSUMER SCIENCES

Professor Ann Vail, department head

**Professors** Bock, Cummings, Del Campo, McKee, Vail; **Associate Professors** Devall, Eastman, Smitley; **Assistant Professors** Krishnan, Montanez

(505) 646-3936

**DEGREE: Bachelor of Science in Family and Consumer Sciences**

**MAJOR: Clothing, Textiles, and Fashion Merchandising**

**MAJOR: Family and Child Science**

**OPTION: Family Science**

**OPTION: Child Science**

**MAJOR: Family and Consumer Sciences Education**

**MAJOR: Human Nutrition and Food Science**

**OPTION: Dietetics**

**OPTION: Food Science and Technology**

**OPTION: Community Nutrition**

**OPTION: Nutrition and Fitness**

**OPTION: Prehealth with Emphasis in Nutrition**

Courses and curricula in the department are designed to educate you as an individual and as a citizen in a changing society. They also develop a scientific attitude and the ability to conduct research directed toward solutions of problems affecting the quality of life.

You must complete general education requirements, and a sequence of specialized course work is then identified for each major.

The following prefixes are used for courses: CTFM—Clothing, Textiles, and Fashion Merchandising; FCS—Family and Child Science; FCSE—Family and Consumer Sciences Education; FRMG—Family Resource Management; HNFS—Human Nutrition and Food Science.

### MAJOR: Clothing, Textiles, and Fashion Merchandising

This major prepares you for careers in the fashion industry. Courses are provided for you to study cultural, sociological, and psychological aspects of dress, business, textiles, fashion merchandising, and apparel production. You may also minor in related disciplines such as marketing, retail management, accounting, and other fields. You must have a GPA of 2.5 or better before enrolling in CTFM 402, Field Experience; FCSE 348, Teaching in Informal Family and Consumer Sciences Settings; and FCSC 400, Research Methods in Family and Consumer Sciences.

#### General Education Requirements

A list of specific general education requirements is available in the department. Please check with your adviser.

#### Departmental Requirements

CTFM 178, Fundamentals of Fashion .....	3
CTFM 255, Applied Clothing Design.....	3
CTFM 270, Fashion Illustration.....	3
CTFM 273, Concepts in Apparel Construction.....	3
CTFM 366, Historic Fashion.....	3
CTFM 371, Textile Science.....	3
CTFM 372, Fashion Merchandising.....	3
CTFM 402, Field Experience .....	3-6
CTFM 474, Fashion Promotion .....	3
CTFM 475, Fashion Buying.....	3
Two from the following: FCS 300+; FCSE 348, Teaching in Informal Family and Consumer Sciences Settings; FRMG 330, Personal and Family Finance; FRMG 333, Consumer Practices and Problems.....	6

#### Nondepartmental Requirements

ACCT 251, Management Accounting, or ACCT 252, Financial Accounting .....	3
ART 110G, Visual Concepts .....	3
CHEM 110G, Principles and Applications of Chemistry.....	4
COMM 265G, Principles of Human Communication; AXED 201G, Effective Leadership and Communication in Agricultural Organizations; or COMM 253G, Public Speaking .....	3
C S 110G, Computer Literacy, or AG E 250G, Life with Microcomputers .....	3
ECON 252G, Principles of Microeconomics.....	3
ENGL 111G, Rhetoric and Composition.....	4
ENGL 203G, Business and Professional Communication; ENGL 211G, Writing in the Humanities; ENGL 218G, Technical and Scientific Communication; ENGL 311G, Advanced Composition; or ENGL 318G, Advanced Technical and Professional Communication.....	3
E ST 311G, Statistical Applications, or STAT 251, Statistics for Business and the Behavioral Sciences.....	3
MATH 115, Intermediate Algebra .....	3
MATH 210G, Math Appreciation .....	3
MGT 309, Human Behavior in Organizations, or MGT 315G, Human Relations in Organizations.....	3
MKTG 303, Principles of Marketing .....	3
MKTG 313, Retail Management, or MKTG 324, Product and Price Management .....	3
PSY 201G, Introduction to Psychology.....	3
SOC 101G, Introductory Sociology .....	3
Historical Perspectives.....	3
Viewing a Wider World .....	6

#### Electives

Choose in consultation with CTFM adviser to round out curriculum of 128 credits. At least 54 credits must be courses labeled 300 or above. Choose from the following:

B A 301, Career Planning in Business.....	1
CTFM 384, Clothing for Special Needs .....	3
CTFM 470, Fashion Trend Analysis.....	3
CTFM 476, Apparel Design by Draping .....	3

CTFM 489, Fashion Markets.....	2-8
HON 323G, Cultural Perspectives on Dress.....	3
MGT 332, Human Resources Management.....	3
MGT 453, Leadership and Motivation .....	3
MKTG 317, International Marketing.....	3

(Check prerequisites before enrolling in courses.)

### MAJOR: Family and Child Science

This major stresses the interrelationship of individuals throughout the life span and the impact of social and economic factors on the family system. Graduates are prepared for professional work with social and community agencies and other activities serving families and consumers. You must work closely with an adviser. You must achieve a grade of C or higher in your required core and option courses, and must retake required courses with a grade lower than C. You must have a GPA of 2.5 or higher before enrolling in FCS 424, Field Experience; FCSC 400, Research Methods in Family and Consumer Sciences; and FCSE 348, Teaching in Informal Family and Consumer Sciences Settings.

#### General Education Requirements

A list of specific general education requirements is available in the department. Please check with your adviser.

#### Core Classes

FCS 181, Interpersonal Skills in Intimate Relationships .....	3
FCS 380, Family Dynamics .....	3
FCS 381, Middle Childhood Development in the Family .....	3
FCS 383, Parenting and Child Guidance.....	3
FCS 424, Field Experience .....	8
FCS 446, Adolescent Development and the Family.....	3
FCS 447, Childhood in the Family.....	3
FCS 448, The Aging Family.....	3
FCS 449G, Family Ethnicities and Subcultures.....	3
FCSC 400, Research Methods in Family and Consumer Sciences.....	3
FRMG 330, Personal and Family Finance.....	3
FRMG 333, Consumer Practices and Problems .....	3
HNFS 163, Nutrition for Health .....	3
FCSE 345, Management Concepts in FCSC Teaching, or FCSE 348, Teaching in Informal Settings.....	3

#### OPTION: Family Science

Select 4 courses, 12 credit hours.

C EP 300, Human Relations Training .....	3
FCS 462, Family Communication.....	3
HL S 468, Coping with Loss and Grief: A Cross-Cultural Perspective .....	3
HL S 487, Consumer Health.....	3
PSY 303, Community Psychology.....	3
PSY 317, Social Psychology.....	3
SOC 351, Sociological Theory .....	3
SOC 359, Sociology of the Family.....	3
SOC 374G, Comparative Family Systems .....	3
SOC 471, Advanced Race and Ethnic Relations.....	3
S WK 397, Special Topics.....	3
S WK 468, Interdisciplinary Social Practice: A Holistic Approach to Wellness .....	3

#### OPTION: Child Science

Select 4 courses, 12 credit hours.

C EP 320, Sex Roles in Education.....	3
ECED 360, Introduction to Early Childhood Education.....	3
ECED 451, Play in the Early Childhood Curriculum .....	3
FCS 462, Family Communication.....	3
HL S 355, Responding to Emergencies .....	3
PSY 321, Psychology of Personality.....	3
PSY 350, Developmental Psychology: Conception through Childhood .....	3
PSY 355, Developmental Research Methods .....	3
S WK 311, Human Behavior and the Social Environment I.....	3
S WK 497, Special Topics.....	3
Minor .....	18-24 (Optional)

**Nondepartmental Electives**

Choose in consultation with FCS adviser to round out curriculum of 128 credits. At least 54 credits must be courses labeled 300 or above. Choose from nondepartmental courses listed below.

COMM 377, Conflict Management.....	3
COMM 384, Interpersonal Communication .....	3
COMM 465, Nonverbal Communication .....	3
ECED 201, Learning Environment Design in Early Childhood .....	3
ECED 202, Communication and Creative Development in Early Childhood .....	3
ECED 203, Self Concept Development in Early Childhood .....	3
GERO 451, Aging and Public Policy.....	3
HL S 300, Drugs and Behavior.....	3
HL S 320, Human Stress Management.....	3
HL S 487, Consumer Health.....	3
PHIL 223G, Ethics .....	3
P E Activity Classes.....	1
PSY 302, Abnormal Psychology.....	3
PSY 324, Sexual Behavior.....	3
PSY 330, Psychology and the Law.....	3
S VK 362, Social Work with African-American Families .....	3
S VK 390, Family and Child Welfare Issues .....	3
SOC 273, Sex and Gender.....	3
SOC 372, Sociology of Health and Medicine.....	3
SOC 373, Aging and Society.....	3
SOC 473, Comparative Family Systems .....	3
SOC 485, Sociology of Law.....	3

*(Check prerequisites before enrolling in above courses.)*

**MAJOR: Family and Consumer Sciences Education**

This major prepares you for secondary school teaching as well as teaching in other educational settings such as the Cooperative Extension Service. Two options are available. The Teaching Option meets licensure requirements for New Mexico. The Extension Option prepares you to teach in the Cooperative Extension Service or other community agencies. In the spring semester of the senior year, principles of teaching are applied during student teaching in a selected school or a County Extension office. Requirements for admission to the Family and Consumer Sciences Education program are (1) an overall grade-point average of not less than 2.5 and a grade-point average of 2.5 or above in family and consumer sciences courses, (2) a C or better in all departmental courses and (3) recommendation of adviser. You must have a GPA of 2.5 or higher before enrolling in FCSC 400, Research Methods in Family and Consumer Sciences; FCSE 348, Teaching in Informal Family and Consumer Sciences Settings; FCSE 408, Field Experience in Extension; and FCSE 448, Supervised Teaching in Family and Consumer Sciences.

**General Education Requirements**

A list of specific general education requirements is available in the department. Please check with your adviser.

**Departmental Requirements**

CTFM 178, Fundamentals of Fashion, or CTFM 255, Principles of Clothing Selection .....	3
CTFM 273, Concepts in Apparel Construction.....	3
CTFM 371, Textile Science.....	3
FCS 181, Interpersonal Skills in Intimate Relationships.....	3
FCS 380, Family Dynamics.....	3
FCS 383, Parenting and Child Guidance.....	3
FCS 447, Infancy and Early Childhood in the Family .....	3
FCSE 245, Overview of Family and Consumer Sciences Teaching.....	3
FCSE 345, Management Concepts in Family and Consumer Sciences Teaching .....	3
FCSE 445, Vocational Programs for Youth and Adults.....	3
FCSE 446, Teaching Methods I .....	3
FCSE 447, Teaching Methods II.....	3
FRMG 330, Personal and Family Finance.....	3
FRMG 331, Management of Family Life and Resources .....	3
FRMG 333, Consumer Practices and Problems.....	3
FRMG 335, Housing and Interior Design .....	3
HNFS 163, Nutrition for Health, or HNFS 251, Human Nutrition.....	3
HNFS 263, Food Science I.....	3

HNFS food science elective (see adviser for selections).....	3
HNFS nutrition elective (see adviser for selections).....	3

**Nondepartmental Requirements**

BIOL 101G, Human Biology, or BIOL 111G, Natural History of Life.....	3
HRTM 201, The Tourism System and Travel Services, or HRTM 221, Introduction to Hospitality Management .....	3
SPED 350, Survey of Programs for Exceptional Learners .....	3

**Specific Teaching Option Requirements**

FCSE 448, Supervised Teaching in Family and Consumer Sciences.....	9
RDG 414, Content Area Literacy.....	3
Two electives from HIST, ECON, SOC and GOVT (One elective might meet Viewing a Wider World requirements) .....	6

**Specific Extension Option Requirements**

FCSE 408, Field Experience in Extension .....	9
Electives (AXED recommended).....	10

Upper-division hours must total 54. A second teaching field can also be arranged.

**MAJOR: Human Nutrition and Food Science****OPTION: Dietetics**

This option prepares you to be a dietitian in a variety of practice settings. A verification statement is issued upon completion of the didactic program. To get a verification statement, you must do the following (1) You must attain a C or higher (on campus or transfer) in the classes with CHEM, BCHE, BIOL, SP M & HNFS prefixes; (2) You will need to take a challenge exam related to each course if you desire to transfer in courses comparable to HNFS 446, HNFS 448, and HNFS 449. You must attain a C or higher on each exam before transfer credits will be allowed; (3) You must take at least 30 credits at New Mexico State University with 20 upper division (300 level or above) and 10 in HNFS (300 level or above). You must have a GPA of 2.5 or better before enrolling in FCSC 400, Research Methods in FCSC; FCSE 348, Teaching in Informal Family and Consumer Sciences Settings; or HNFS 401/407, Field Experience.

Following graduation, an experience in a hospital or institution approved by the Commission on Dietetic Education of the American Dietetic Association is required. Upon successful completion of the experience, you are eligible to take the registration exam required by The Commission on Dietetic Registration of the American Dietetic Association to be a Registered Dietitian. This option is part of a Didactic Program in Dietetics approved by The American Dietetic Association, 216 W. Jackson Blvd., Suite 800, Chicago, IL 60606-6995, (800) 877-1600. You must work closely with advisers to assure proper scheduling of necessary courses.

**General Education Requirements**

General education requirements are incorporated into the following list. Please check with your adviser.

**Departmental Requirements**

FCS 181, Interpersonal Skills in Intimate Relationships.....	3
FCSC 400, Research Methods in FCSC; AXED 456, Introduction to Research Methods; or HL S 451, Biometrics and Health Research .....	3
FCSE 348, Teaching in Informal Settings .....	3
HNFS 251, Human Nutrition .....	3
HNFS 263, Food Science I .....	3
HNFS 350, Nutrition throughout the Life Cycle .....	3
HNFS 363, Quantity Food Production and Service .....	4
HNFS 325, Food Analysis; HNFS 331, Food Preservation; HNFS 421, Food Chemistry; or HNFS 426, Dairy Products Manufacturing .....	3
HNFS 401/407, Field Experience-Hospital Dietetics/Community (4 total) (minimum of 1 credit in 401 and 1 credit in 407).....	4
HNFS 403, Community Nutrition.....	3
HNFS 430, Food Service Organization and Management .....	3
HNFS 446, Diet Therapy I.....	3
HNFS 447, Experimental Foods .....	3
HNFS 448, Advanced Nutrition.....	4
HNFS 449, Diet Therapy II.....	3
HNFS upper-division elective.....	3

**Nondepartmental Requirements**

AGE 250G, Life with Microcomputers*; BCS 110G, Introduction to Computerized Information Systems; or C S 110, Computer Literacy.....	3
ANTH 357G, Medical Anthropology; or ANTH 431, Nutritional Anthropology .....	3

BIOL 111/111L; or BIOL 211/211L; or BIOL 190 and 111L; or 211L, Biology and Laboratory.....	4
BIOL 253, Human Anatomy*; or BIOL/SP M 271 and 271L, Anatomy I.....	3-5
BIOL 254, Human Physiology.....	3
BCHE 341, Survey of Biochemistry.....	3
BCHE 342, Introductory Biochemistry Laboratory.....	1
CHEM 111, General Chemistry I.....	4
CHEM 112, General Chemistry II.....	4
CHEM 211, Organic Chemistry; or CHEM 313, Organic Chemistry I; and CHEM 314, Organic Chemistry II; and CHEM 315, Organic Chemistry Lab.....	4
COMM 253G, Public Speaking; or COMM 265G, Principles of Human Communication; or AXED 201G, Effective Leadership and Communication in Agricultural Organizations.....	3
ENGL 111G, Rhetoric and Composition.....	4
ENGL 203G, Business and Professional Communication; or ENGL 218G, Technical and Scientific Communication; or ENGL 318G, Advanced Technical and Professional Communication*.....	3
E ST 311G, Statistical Applications*, or STAT 251, Statistics for Business and Behavioral Sciences.....	3
GOVT 100G, American National Government*; or GOVT 110G, Introduction to Political Science; or GOVT 150G, American Political Issues.....	3
Historical Perspectives general education requirement.....	3
HNFS 320, Food Microbiology; or BIOL 219, Public Health Microbiology; and BIOL 311L, General Microbiology Lab; or BIOL 311/311L, General Microbiology.....	3-5
HRTM 202, Hospitality Financial Systems; or ACCT 251, Management Accounting; or ACCT 252, Financial Accounting.....	3
Literature and Fine Arts general education requirement.....	3
MATH 115, Intermediate Algebra.....	3
MATH 142G, Calculus for the Biological and Management Sciences I.....	3
MGT 332, Human Resource Management*; or MGT 309, Human Behavior in Organizations; or HRTM 303, Hospitality Human Resource Management.....	3
OEHO 120, Medical Terminology.....	3
PSY 201G, Introduction to Psychology.....	3
Viewing a Wider World:	
C EP 451G, Introduction to Counseling.....	3
GEOG 315G, World Agriculture and Food Problems.....	3
Electives, departmental and nondepartmental, sufficient to bring total credits to 128, including 54 upper-division.	
*Preferred	

#### OPTION: Food Science and Technology

You will follow a basic course plan providing a comprehensive background in the properties and preservation of foods. Graduates may be employed in areas such as food systems management, quality assurance, food safety, product development, or food processing. Job opportunities are available in private industry, educational institutions, and government. You must have a GPA of 2.5 or better before enrolling in FCSC 400, Research Methods in FCSC; FCSE 348, Teaching in Informal Family and Consumer Sciences Settings; or HNFS 427/428, Food Industry Problems I/II.

#### General Education Requirements

A list of specific general education requirements is available in the department. Please check with your adviser.

#### Departmental Requirements

HNFS 163, Nutrition for Health, or HNFS 251, Human Nutrition.....	3
HNFS 263, Food Science I.....	3
HNFS 320, Food Microbiology.....	3
HNFS 325, Food Analysis.....	3
HNFS 331, Food Preservation.....	3
HNFS 421, Food Chemistry.....	3
HNFS 426, Dairy Products Manufacturing.....	3
HNFS 427/428, Food Industry Problems, or FCSC 400, Research Methods in Family and Consumer Sciences.....	3-6
HNFS 447, Experimental Foods.....	3
HNFS elective (300 or above).....	3
Any course (3 or more credits) from CTFM, FCS, FCSC, FCSE, or FRMG	

#### Nondepartmental Requirements

ANSC 100, Introductory Animal Science.....	3
ANSC 262, Introduction to Meat Science.....	3
BCHE 341, Survey of Biochemistry.....	3
BCHE 342, Introductory Biochemistry Laboratory.....	1
BIOL 311, General Microbiology.....	3
BIOL 311L, General Microbiology Laboratory.....	2
CHEM 111, General Chemistry I.....	4
CHEM 112, General Chemistry II.....	4
CHEM 211, Organic Chemistry.....	4
HORT 100G, Introductory Plant Science.....	4
PHYS 211, General Physics I.....	3
PHYS 211L, General Physics I Lab.....	1

#### Potential Electives

Electives, departmental and nondepartmental, sufficient to bring total credits to 128, including 54 upper-division.

AG E 305, Marketing and Pricing Agricultural Products.....	3
ANSC 306, Processed Meats.....	3
ANSC 363, Meat Technology.....	3
BIOL 451, Physiology of Microorganisms.....	3
BIOL 473, Ecology of Microorganisms.....	3
BIOL 477, Applied and Environmental Microbiology.....	4
CH E 395G, Brewing Science and Society.....	3
CHEM 371, Analytical Chemistry.....	3
CHEM 422, Environmental Chemistry.....	3
GEOG 315G, World Agriculture and Food Problems.....	3
HORT 420, Postharvest Biology and Technology.....	4

Students are encouraged to complete a minor in a related area such as chemistry, microbiology and business. Consult with an adviser for requirements.

#### OPTION: Community Nutrition

This option prepares you to function in a nutrition capacity in a community or public health setting such as the Department of Health (Women, Infant and Child Nutrition Program; Adult Health; Children's Medical Services), School Food Service, and the Area Agency on Aging. You must attain a C or higher (on campus or transfer) in all CHEM, BIOL, HL S, and HNFS course work. You must take at least 30 credits at NMSU and complete 54 credits at the upper-division (300+) level. A minimum of 128 credits is required for the degree. You must have a GPA of 2.5 or better before enrolling in FCSC 400, Research Methods in FCSC; FCSE 348, Teaching in Informal Family and Consumer Sciences Settings; or HNFS 407, Field Experience.

You should be aware that in some states there are licensure laws related to the practice of therapeutic nutrition. Such licensure often requires you to have a minimum of the didactic requirements that are noted by \* below. Didactic requirements that are NOT included in this program of study are detailed at the end of the degree requirements. In addition to meeting the didactic requirements, you must also complete a supervised practice program sanctioned by the American Dietetic Association (ADA) and take the national examination administered by the ADA. To broaden career possibilities, you are highly recommended to complete all requirements to become a registered dietitian.

#### Departmental Requirements

FCS 181, Interpersonal Skills in Intimate Relationships*.....	3
FCSE 348, Teaching in Informal Family and Consumer Sciences Settings, or FCSE 345, Management Concepts in Family and Consumer Sciences Teaching*.....	3
FCSC 400, Research Methods in Family and Consumer Sciences*.....	3
HNFS 251, Human Nutrition*.....	3
HNFS 263, Food Science I*.....	3
HNFS 320, Food Microbiology*.....	3
HNFS 350, Nutrition throughout the Life Cycle*.....	3
HNFS 403, Community Nutrition*.....	3
HNFS 407, Community Nutrition Field Experience*.....	4
HNFS nutrition electives (choose 12 hours from the following): HNFS 404, Maternal, Infant and Child Nutrition; HNFS 406, Geriatric Nutrition; HNFS 410, Sports Nutrition; HNFS 416, Nutrition and Culture; HNFS 492, Special Problems*.....	12

HNFS food science electives (choose 3 hours from the following): HNFS 325, Food Analysis; HNFS 331, Food Preservation; HNFS 447, Experimental Foods*	3
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### Nondepartmental Requirements

AG E 250G, Life with Microcomputers, or C S 110G, Computer Literacy	3
ANTH 431, Nutritional Anthropology, or ANTH 357G, Medical Anthropology	3
BIOL 111G/111L, Natural History of Life; or BIOL 211G/211L; Cellular and Organismal Biology; or BIOL 190/111L, Principles of Biology*	3
CHEM 110G, Principles and Applications of Chemistry; or CHEM 111/111L, General Chemistry I; and CHEM 112/112L, General Chemistry II and Lab	4 or 8
COMM 265G, Principles of Communication; or COMM 253G, Public Speaking; or AXED 201G, Effective Leadership; and Communication in Agricultural Organizations*	3
ENGL 111G, Rhetoric and Composition*	4
ENGL 203G, Business and Professional Communication; or ENGL 218G, Technical and Scientific Communication; or ENGL 318G, Advanced Technical and Professional Communication*	3
E ST 311G, Statistical Applications*, or STAT 251, Statistics for Business; and Behavioral Sciences	3
GOVT 100G, American National Government; or GOVT 110G, Introduction to Political Science; or GOVT 150G, American Political Issues	3
HL S 100, Introduction to Health Science	1
HL S 150, Personal Health and Wellness	3
HL S 275, Foundations of Health Education	3
HL S 286G, Wellness and Lifestyle Choices	3
HL S 395, Foundations of Public Health	3
HL S 476, Health Risk Reduction	3
HL S electives (Choose 15 hours from the following): HL S 461, Health Communications with Hispanic Clients; HL S 462, Hispanic Health Issues; HL S 464G, Cross-Cultural Aspects of Health; HL S 465, International Health Problems; HL S 467, Rural Health Issues; HL S 469, U.S.-Mexico Border Health Issues; HL S 487, Consumer Health; HL S 492, Health Care of the Aged; HL S 493, Adulthood and Aging; HL S 494, Aging in a Multicultural Society	15
MATH 115, Intermediate Algebra	3
MATH 142G, Calculus for the Biological and Management Sciences I	3
OEHO 120, Medical Terminology*	3
PHIL 223G, Ethics	3
PSY 201G, Introduction to Psychology	3
General Electives	4

### General Education Requirements

History General Education requirement	3
Literature/Fine Arts General Education requirement	3
Viewing a Wider World requirement	
C EP 451G, Introduction to Counseling*	3
GEOG 315G, World Agriculture and Food Problems	3
Additional course work needed to complete the American Dietetic Association Didactic Program in Dietetics requirements:	

### Departmental Requirements

HNFS 363, Quantity Food Production and Service	4
HNFS 401, Field Experience, Hospital Dietetics	1
HNFS 430, Food Service Organization and Management	3
HNFS 446, Diet Therapy I	3
HNFS 447, Experimental Foods	3
HNFS 448, Advanced Nutrition	4
HNFS 449, Diet Therapy II	3

### Nondepartmental Requirements

BCHE 341, Survey of Biochemistry	3
BCHE 342, Introductory Biochemistry Laboratory	1
BIOL 253, Human Anatomy, or BIOL/SP M 271/271L, Anatomy I	4
BIOL 254, Human Physiology	3
CHEM 111/111L, General Chemistry I	4
CHEM 112/112L, General Chemistry II	4
CHEM 211, Organic Chemistry	4
HRTM 202, Hospitality Financial Systems; or ACCT 251, Management Accounting; or ACCT 252, Financial Accounting	3

MGT 309, Human Behavior in Organizations; or MGT 332, Human Resources Management; or HRTM 303, Hospitality Human Resources Management	3
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### OPTION: Nutrition and Fitness

This option will give you a background in both nutrition and fitness that will prepare you to work in settings such as corporate and community wellness programs, gyms, and other areas related to nutrition and physical fitness. You must attain a C or higher (on campus or transfer) in all CHEM, BIOL, HL S, and HNFS course work. You must take at least 30 credits at NMSU and complete 54 credits at the upper division (300+) level. A minimum of 128 credits is required for the degree. You must have a GPA of 2.5 or better before enrolling in FCSC 400, Research Methods in FCSC, FCSE 348, Teaching in Informal Family and Consumer Sciences Settings, or HNFS 401/407, Field Experience.

You should be aware that in some states there are licensure laws related to the practice of therapeutic nutrition. Such licensure often requires you to meet didactic requirements. Didactic requirements that are NOT included in this program of study are detailed at the end of the degree requirements. In addition to meeting the didactic requirements, you must also complete a supervised practice program sanctioned by the American Dietetic Association (ADA) and take the national examination administered by the ADA. To broaden career possibilities, it is highly recommended you complete all requirements to become a registered dietitian.

### Departmental Requirements

FCS 181, Interpersonal Skills in Intimate Relationships	3
FCSE 348, Teaching in Informal Settings	3
HNFS 251, Human Nutrition	3
HNFS 350, Nutrition Throughout the Life Cycle	3
HNFS 403, Community Nutrition	3
HNFS 401/407, Field Experience - Hospital Dietetics/Community (4 total; minimum of 1 credit in 401 and 1 credit in 407)	4
HNFS 410, Sports Nutrition	3
HNFS 446, Diet Therapy I	3
HNFS 448, Advanced Nutrition	4
HNFS 449, Diet Therapy II	3

### Non-Departmental Requirements

AG E 250G*, Life with Microcomputers, C S 110G, Computer Literacy, or BCS 110G, Introduction to Computerized Information Systems	3
ANTH 431*, Nutritional Anthropology, or ANTH 357G, Medical Anthropology	3
BCHE 341, Survey of Biochemistry and BCHE 342, Intro to Biochemistry Lab	4
BIOL 211G/L* Cellular & Organismal Biology or BIOL 190 and BIOL 111L or BIOL 211L	4
BIOL 254, Human Physiology	3
CHEM 111, General Chemistry I and Lab	4
CHEM 112, General Chemistry II and Lab	4
CHEM 211, Organic Chemistry or CHEM 313 and CHEM 314 and CHEM 315	4 or 8
COMM 265G*, Principles of Communication, or COMM 253G, Public Speaking, or AXED 201G, Effective Leadership and Communication in Agricultural Organizations*	3
E ST 311G*, Statistical Applications, or STAT 251, Statistics for Business and Behavioral Sciences	3
ENGL 111G or ENGL 111H, Rhetoric and Composition	4
ENGL 218G or 318G*, Technical & Scientific Communication	3
GOVT 100G*, American National Government, or GOVT 110G, Introduction to Political Science, or GOVT 150G, American Political Issues	3
HL S 320, Human Stress Management	3
MATH 115, Intermediate Algebra	3
MATH 142G, Calculus for the Biological and Management Sciences I	3
OEHO 120, Medical Terminology	3
PE P 208, Fitness for Health & Sports	3
PSY 201G, Introduction to Psychology	3
SP M 250, Sport Safety	2
SP M 271/L, Anatomy I	4
SP M 305, Biomechanics	3
SP M 308, Exercise Physiology	3
SP M 309, Anatomical Kinesiology	3

SP M 330, Exercise Prescription .....	3
SP M 415, Therapeutic Modalities .....	3
SP M 451, Advanced Exercise Physiology .....	3
SP M 460, Principles of Strength & Conditioning.....	3

### General Education Requirements

History General Education requirement.....	3
Literature/Fine Arts Requirement.....	3

### Viewing a Wider World Requirements

C EP 451G, Introduction to Counseling.....	3
Additional Viewing a Wider World.....	3

### ADA Registration Commission on Dietetic Education of the American Dietetic Association

Additional course work required for application to a Supervised Practice program.

### Departmental Requirements

FCSC 400, Research Methods in FCSC; AXED 456, Research Methods; or PEP 411, Tests & Measurements .....	3
HNFS 263, Food Science I .....	3
HNFS 320, Food Microbiology .....	3
HNFS 363, Quantity Foods .....	4
HNFS 430, Food Service Organization & Mgt.....	3
HNFS 447, Experimental Foods .....	3
HNFS Food Science Elective .....	3

### Non-Departmental Requirements

GEOG 315G, World Ag & Food Problems .....	3
HRTM 202, Hospitality Financial Systems, or ACCT 251, Management Accounting, or ACCT 252, Financial Accounting .....	3
MGT 332, Human Resources Management, or MGT 309, Human Behavior in Organizations, or HRTM 303, Hospitality Human Resources Mgt.....	3

\* Preferred

### OPTION: Prehealth with Emphasis in Nutrition

Students planning to attend medical or dental schools may enroll in any discipline. This option is designed to meet the requirements for entry into most medical or dental schools as well as schools associated with other health professions such as physical therapy and pharmacy. Most professional schools require chemistry (16 credits), biology (8-16 credits), calculus (3 credits) and physics (8 credits). These requirements have been incorporated into this option. In addition to the requirements needed for the delineated health professions, this option will also provide an extensive background in nutrition, which is integral to these professions. Because there is a growing interest in having multiskilled professionals, you may want to also complete the additional course work outlined at the bottom of this program of study so that you will have met the academic requirements for becoming a registered dietitian. You must have a GPA of 2.5 or better before enrolling in FCSC 400, Research Methods in FCSC; FCSE 348, Teaching in Informal Family and Consumer Sciences Settings; or HNFS 401/407, Field Experience.

Selection to professional schools is typically based on four separate but interrelated criteria: (1) evaluation of academic transcripts, (2) evaluation of scores on admissions tests, (3) letters of recommendation, and (4) personal interviews. The Health Professions Advisory Committee works with all prospective applicants to professional school to provide advice and information on the admissions process and to ensure that all prehealth students have the best possible opportunity of gaining admission to the school of their choice. You are expected to register with the committee no later than the first semester of your sophomore year. Check with an adviser for information.

### Departmental Requirements

HNFS 163, Nutrition for Health, or HNFS 251, Human Nutrition .....	3
HNFS 350, Nutrition Throughout the Life Cycle .....	3
HNFS 403, Community Nutrition .....	3
HNFS 401, Field Experience—Hospital Dietetics, and HNFS 407, Field Experience—Community (minimum 1 credit in HNFS 401 and 1 credit in HNFS 407) .....	4
HNFS 446, Diet Therapy I .....	3
HNFS 448, Advanced Nutrition.....	4
HNFS 449, Diet Therapy II .....	3

### Nondepartmental Requirements

AG E 250G, Life with Microcomputers or C S 110G Computer Literacy .....	3
AXED 456, Research Methods, or FCSC 400, Research Methods in Family and Consumer Sciences, or HL S 451, Biometrics and Health Research .....	3
BCHE 395, Biochemistry .....	3
BIOL 211G/211L, Cellular and Organismal Biology .....	3/1
BIOL 253 or BIOL/SP M 271/271L, Human Anatomy Lecture/Lab .....	3-4
BIOL 254, Human Physiology .....	3
BIOL 311, 311L, General Microbiology.....	3/2
CHEM 111, General Chemistry I.....	4
CHEM 112, General Chemistry II.....	4
CHEM 313, Organic Chemistry I.....	3
CHEM 314, Organic Chemistry II.....	3
CHEM 315, Organic Chemistry Laboratory .....	2
COMM 253G or 265G, Communications, or AXED 201G, Effective Leadership and Communication in Agricultural Organizations .....	3
ENGL 111G, Rhetoric and Composition.....	4
ENGL 203G, Business and Professional Communication; or ENGL 218G, Technical and Scientific Communication; or ENGL 318G, Advanced Technical and Professional Communication .....	3
E ST 311G, Statistical Application.....	3
GOVT 100G, American National Government; or GOVT 110G, Introduction to Political Science; or GOVT 150G, American Political Issues.....	3
Historical Perspectives (general education).....	3
Literature and Fine Arts (general education).....	3
OEHO 120, Medical Terminology.....	3
PHYS 211, 211L, General Physics I.....	4
PHYS 212, 212L, General Physics II.....	4
PSY 201G, Introduction to Psychology.....	3
Two Viewing a Wider World	
C EP 451G, Introduction to Counseling .....	3
ANTH 357G, Medical Anthropology .....	3
Electives, departmental and nondepartmental, sufficient to bring total credits to at least 128, including 54 upper-division.	

### Students Preparing for Medical or Dental School:

MATH 115, Intermediate Algebra .....	3
MATH 180, Trigonometry .....	2
MATH 185, College Algebra.....	3
MATH 191, Calculus & Analytical Geometry I.....	3
Student Preparing for Most Other Prehealth Schools:	
MATH 115, Intermediate Algebra .....	3
MATH 142G, Calculus for Biological and Management Sciences.....	3

### To Meet Academic Requirements for Registered Dietitian

The course work delineated above for prehealth with an emphasis in nutrition coupled with the course work outlined below provides the academic requirements for you to obtain registration as a dietitian. A verification statement is issued upon completion of the didactic program. To get a verification statement (1) you must attain a C or higher (on campus or transfer) in the following classes: All courses with CHEM, BCHE, and BIOL/SP M prefixes and all classes with HNFS prefix; (2) you will need to take a challenge exam related to each course if you desire to transfer in courses comparable to HNFS 448 and HNFS 449; you must attain a C or higher on each exam before transfer credits will be allowed; (3) you must take at least 30 credits at New Mexico State University with 20 as upper-division (300 level or above) credits and 10 credits in HNFS (300 level or above).

Following graduation, a supervised practice experience in a hospital or institution approved by the American Dietetic Association is required. Note: This experience CANNOT be met by attending professional health school. Upon successful completion of the experience, you are eligible to take the registration exam required by the American Dietetic Association to be a Registered Dietitian. The academic requirements delineated above and below meet ADA requirements of an ADA-approved Didactic Program in Dietetics. You must work closely with advisers to assure proper scheduling of necessary courses.

### Departmental Requirements

FCS 181, Interpersonal Skills in Intimate Relationships .....	3
FCSE 348, Teaching in Informal Settings .....	3

HNFS 263, Food Science I.....	3
HNFS 363, Quantity Food Production & Service.....	4
HNFS 325, Food Analysis; HNFS 331, Food Preservation; HNFS 421, Food Chemistry; or HNFS 426, Dairy Products Manufacturing.....	3
HNFS 430, Food Service Organization & Management.....	3
HNFS 447, Experimental Foods.....	3
<b>Nondepartmental Requirements</b>	
HRTM 202, Hospitality Financial Systems; or ACCT 251, Management Accounting; or ACCT 252, Financial Accounting.....	3
MGT 332, Human Resources Management, or MGT 309, Human Behavior in Organizations, or HRTM 303, Hospitality Human Resource Management.....	3

## FISHERY and WILDLIFE SCIENCES

**Professor Donald F. Caccamise, department head**  
**Professors** Valdez; **Associate Professor** Andersen; Caldwell, Desmond; **Assistant Professors** Bender, Boeing, Cowley, Roemer  
 (505) 646-7051; natres@nmsu.edu

**DEGREE: Bachelor of Science in Agriculture**  
**MAJOR: Wildlife Science**  
**OPTION: Wildlife Management Practice**  
**OPTION: Preparation for Graduate Studies**  
**OPTION: Natural Resource Management**

**DEGREE: Bachelor of Science in Conservation Ecology**  
**MAJOR: Conservation Ecology**

**MINORS: Conservation Ecology**  
**Wildlife Science**

**DEGREE: Bachelor of Science in Conservation Ecology**  
 New Mexico State University offers a new interdisciplinary, undergraduate program in Conservation Ecology. Program details and degree requirements are listed under "Cross-College Degrees" (pages 104-105).

**DEGREE: Bachelor of Science in Agriculture**  
 The department prepares you for careers in a variety of natural resource fields related to management of wild animal populations and the natural systems they share.

Within the wildlife science major you are offered three options. The first is Wildlife Management Practice. Course work in this option provides training in the basic sciences but concentrates on applied skills in wildlife and fisheries management. If you complete this option, you will be ready for entry-level positions with government agencies and private enterprises specializing in natural resource management. The option in Natural Resource Management is broad in scope while providing a strong background in the fundamental sciences. It includes sound training in the theory and practice of traditional management as well as a solid grounding in supporting disciplines like economics, geography, and geology. It is intended for students with broader interests than traditional wildlife science. The third option, Preparation for Graduate Studies in Wildlife Science, offers a broad foundation in basic sciences. It is intended for students wishing to pursue advanced degrees in wildlife science or related disciplines in the natural sciences. This option prepares you for careers in higher education, research, and administration.

If you wish to become a certified fishery biologist, you should include the following courses in your curriculum: WLSC 458, WLSC 465, WLSC 482, and WLSC 432. Requirements for becoming a certified wildlife biologist are met by all options.

To graduate with a major in Wildlife Science, an overall grade point average of 2.00 is required in courses taken in the major field and in all courses taken at NMSU.

The department offers a minor in Wildlife Science for students majoring in other disciplines. The minor includes a minimum of 19 credits, with 13 credits in required courses and 6 in wildlife electives.

**Core Requirements (total credits: 89-97)**

BIOL 111G and 111L, Natural History of Life and Laboratory .....	4
BIOL 301, Principles of Ecology.....	3
BIOL 305, Principles of Genetics.....	3
BIOL 312, Identification and Classification of Western Plants, .....	3
or RGSC 307, Rangeland Grasses, and RGSC 316, Rangeland Plants.....	5
BIOL 313, Structure and Function of Plants.....	3
BIOL 322, Zoology.....	3
CHEM 111, General Chemistry I.....	4
CHEM 112, General Chemistry II.....	4
COMM 265G, Principles of Human Communication; or COMM 253G, Public Speaking; or AXED 201G, Effective Leadership and Communication in Agricultural Organizations.....	3
C S: Any level computer science course 100 or above including, C S 110G, Computer Literacy, or AG E 250G, Life with Microcomputers.....	3
ECON 251G, Principles of Macroeconomics, or ECON 252G, Principles of Microeconomics.....	3
ENGL 111G, Rhetoric and Composition.....	4
ENGL 311G, Advanced Composition.....	3
ENGL 318G, Advanced Technical and Professional Communication.....	3
E ST 311G, Statistical Applications.....	3
MATH 115, Intermediate Algebra, and 142G, Calculus for Biological and Management Sciences; or MATH 191, Calculus and Analytical Geometry I, and MATH 192, Calculus and Analytical Geometry II .....	6
PHYS: Any physiology course from among the following: ANSC 370, BIOL 311, BIOL 314, BIOL 377, BIOL 381, BIOL 442, BIOL 474, WLSC 432	
WLSC 110, Introduction to Natural Resources Management .....	3
WLSC 230, Natural History of the Vertebrates .....	4
WLSC 255, Principles of Natural Resource Management.....	3
WLSC 355, Techniques of Natural Resource Management.....	3
or WLSC 356, Field Techniques of Natural Resource Management, .....	2
or RGSC 452, Rangeland Analysis.....	4
WLSC 402, Seminar in Natural Resource Management.....	2
WLSC 409, Population Ecology.....	3
WLSC 447, Wildlife Law Administration and Policy.....	3
WLSC 445, Systems Ecology in Wildlife Management.....	3
Historical Perspectives: one general education course .....	3
Human Thought and Behavior: one general education course.....	3
Literature or Fine Arts: one general education course.....	3
Viewing a Wider World: ECON 337G, Natural Resource Economics or ECON 384G, Water Resource Economics.....	3
Viewing a Wider World: The second course requirement satisfied by 9 credits in biology	

**OPTION: Wildlife Management Practice (total credits: 23-25)**

**General Option Requirements (8 credits)**

PHYS 110G, Great Ideas in Physics .....	4
SOIL 252 and 252L, Soils and Laboratory, or GEOL 111, Geology .....	4
Required Departmental Electives (any combination totaling 9 credits)	
WLSC 310, Managing Ecological Systems for Biodiversity .....	3
WLSC 360, Introduction to Wildlife Behavior .....	3
*WLSC 432, Environmental Biology of Fishes .....	4
WLSC 434, Aquatic Contaminants and Toxicology .....	4
WLSC 437, Wildlife Damage Control .....	3
WLSC 440, Fish and Wildlife Habitat Management .....	3
WLSC 448, Problems .....	1-3
WLSC 450, Special Topics.....	1-4
*WLSC 458 and 458L, Ecology of Inland Waters and Lab .....	4
*WLSC 465 Advanced Management of Aquatic Systems .....	3
WLSC 466, Advanced Management of Wildlife—Mammals .....	3
WLSC 488, Communicating Wildlife Resource Conservation in Society .....	3

**Requirements in Biodiversity (any two courses totaling 6-8 credits)**

BIOL 445, Herpetology .....	4
BIOL 465, Invertebrate Zoology .....	4
WLSC 430, Avian Field Ecology, or BIOL 447, Ornithology.....	4
WLSC 431, Forest and Range Mammals .....	3

\*WLSC 482, Ichthyology ..... 3

#### Additional Courses

Electives to bring total to 128 credits and college credits to  
35 credits ..... 6-16

\*Courses required to become a Certified Fisheries Associate or Professional.

#### OPTION: Natural Resource Management (total credits: 33-35)

##### General Requirements (27 credits)

BIOL 211G and 211L, Cellular and Organismal Biology and Lab ..... 4  
ECON 384, Water Resources Economics ..... 3  
GEOG 381, Cartography and Geographic Information Systems ..... 3  
PHYS 110G, Great Ideas in Physics ..... 4  
RGSC 318, Watershed Management ..... 3  
SOIL 252 and 252L, Soils and Laboratory, or GEOL 111, Geology ..... 4  
WLSC 310, Managing Ecological Systems for Biodiversity, or BIOL 462,  
Conservation Biology ..... 3

##### Requirement in Aquatic Systems (one course of at least 3 credits)

WLSC 432, Environmental Biology of Fishes ..... 4  
WLSC 434, Aquatic Contaminants and Toxicology ..... 3  
WLSC 458 and 458L, Ecology of Inland Waters and Lab ..... 4  
WLSC 465, Advanced Management of Aquatic Systems ..... 3

##### Requirement in Terrestrial Systems (one course of 3 credits)

BIOL 470, Plant Community Ecology ..... 3  
BIOL 468, Avian Ecology ..... 3  
RGSC 317, Rangeland Communities ..... 3  
RGSC 325, Rangeland Restoration Ecology ..... 3  
RGSC 440, Rangeland Resource Ecology ..... 3  
WLSC 466, Advanced Wildlife Management of Mammals (prerequisite  
WLSC 431, Forest and Range Mammals) ..... 3

##### Requirement in Physical Environments (one course of 3 credits)

GEOL 318, Geology of New Mexico ..... 3  
GEOG 351, Fundamentals of Biogeography ..... 3  
GEOG 353, Geomorphology  
(prerequisite GEOL 111G, Survey of Geology) ..... 3  
GEOG 481, Fundamentals of Geographic Information Systems ..... 3

#### Additional Courses

Electives to bring total to 128 credits and college credits to  
35 credits ..... 0-6

#### OPTION: Preparation for Graduate Studies in Wildlife Science (total credits: 26-28)

##### Option Requirements (20 credits)

BIOL 211G and 211L, Cellular and Organismal Biology and Lab ..... 4  
BCHE 341, Survey of Biochemistry, or SOIL 252 and 252L, Soils  
and Lab ..... 4  
CHEM 211, Organic Chemistry ..... 4  
PHYS 211 and 211L, General Physics I and Lab ..... 4  
PHYS 212 and 212L, General Physics II and Lab ..... 4

##### Requirements in Biodiversity (any two courses totaling 6 credits)

BIOL 445, Herpetology ..... 4  
BIOL 465, Invertebrate Zoology ..... 4  
WLSC 430, Avian Field Ecology, or BIOL 447, Ornithology ..... 4  
WLSC 431, Forest and Range Mammals ..... 3  
WLSC 482 Ichthyology ..... 3

#### Additional Courses

Electives to bring total to 128 credits and college credits to  
35 credits ..... 3-13

#### MINOR: Wildlife Science (19 credits)

WLSC 230, Natural History of the Vertebrates ..... 4  
WLSC 255, Principles of Natural Resource Management ..... 3  
WLSC 355, Techniques of Natural Resource Management ..... 3  
WLSC 455, Systems Ecology and Management ..... 3  
Electives in Fishery and Wildlife Science, 3 credits must be upper division ... 6

## HOTEL, RESTAURANT, and TOURISM MANAGEMENT

**Ms. Janet L. Green, department head**

**Associate Professors** Bloomquist, Mandabach; **Assistant Professors** Blanch, Lee  
(505) 646-5995

#### DEGREE: Bachelor of Science in Hotel, Restaurant, and Tourism Management

##### MAJOR: Hotel, Restaurant, and Tourism Management

The mission of the Department of Hotel, Restaurant, and Tourism Management is to serve the needs of our constituents through innovative teaching, research, professional applications, and partnerships in a multicultural and international environment.

This bachelor's degree program prepares you for supervisory and entry-level management positions in all areas of the diverse and growing hospitality and tourism industry. The program also provides a foundation for your continuing development to advance to more senior management or to pursue entrepreneurial opportunities. In this professional program, faculty, students, and industry partners bring together theory and practice to forge hospitality management excellence. The curriculum is designed to educate students as individuals and professionals in a changing society. You will take a core curriculum until your senior year, when you may specialize in one of the three concentration areas listed, or develop an individual plan with your faculty adviser for selecting your professional elective courses. A grade of C or better must be earned in each upper-division HRTM class to satisfy the requirement of the major.

You are required to participate in an internship program that is offered only after completion of 400 hours of hospitality work experience (practicum). The HRTM 407, 408, and 409 internship sequence, which includes another 400 hours in the field, must be completed prior to enrolling in other 400-level courses. Thus, at the end of both the work experience practicum and the internship, you will have completed a minimum of 800 hours professional work experience in the field.

#### Hotel, Restaurant, and Tourism Management Core Courses

##### General Education Requirements (44 credits)

A list of specific general education requirements is available in the department. Please check with your adviser.

##### Departmental Requirements (43 credits)

HRTM 201, The Tourism System and Travel Services ..... 3  
HRTM 202, Hospitality Financial Systems I ..... 3  
HRTM 207, Professional Development ..... 1  
HRTM 211, Hospitality Leadership and Services Management ..... 3  
HRTM 221, Introduction to Hospitality Management ..... 3  
HRTM 301, Hotel, Restaurant, and Tourism Marketing ..... 3  
HRTM 302, Hospitality Financial Systems II ..... 3  
HRTM 303, Hospitality Human Resources Management ..... 3  
HRTM 304, Hospitality and Travel Law ..... 3  
HRTM 331, Hotel Operations Management ..... 3  
HRTM 362, Food Service Management ..... 3  
HRTM 363, Quantity Food Production and Service ..... 4  
HRTM 402, Hospitality Financial Management ..... 3  
HRTM 407, Internship Development ..... 1  
HRTM 408, Hospitality Internship ..... 1  
HRTM 409, Internship Seminar ..... 1  
HRTM 434, Hospitality Operations and Planning  
Seminar ..... 3

##### Nondepartmental Requirements (13 credits)

HNFS 163, Nutrition for Health, or HNFS 251, Human Nutrition, or HNFS 301,  
Nutrition Lifestyle  
Management ..... 3  
MKTG 303, Principles of Marketing, or JOUR 300, Introduction to  
Advertising ..... 3

MGT 334, Labor Relations, or MGT 359, The Management of Diversity, or MGT 388G, Leadership and Society, or MGT 201, Introduction to Management.....	3
SPAN 111, Elementary Spanish I.....	4

**Departmental Electives (9 credits)**

You may choose 9 credits from the interest area groups listed below, or in consultation with your adviser, you may combine them in any way that accommodates your special interest.

**•Hotel Management\***

The hotel/resort operations area addresses specific concepts, practices, and issues in hotel, resort, bed and breakfast, conference and contract lodging facilities management and ownership.

HRTM 431, Hotel Facilities Management.....	3
HRTM 432, Hotel Property Design and Management.....	3
HRTM 433, Training for Hospitality Operations.....	3
HRTM 441, Hotel Conference Services Management.....	3

**•Restaurant and Food Service Management\***

The restaurant and food service management areas address specific concepts, practices, and issues in restaurant, banquet, catering, and contract food service management and ownership.

HRTM 411, Food Service Cost Control, Menu Planning, and Purchasing.....	3
HRTM 412, Beverage Management.....	3
HRTM 413, Advanced Food Service Management.....	4

**•Tourism Management\***

The tourism management area addresses specific concepts, practices, and issues in the management of travel and tourism promotion, convention and visitor's bureaus, corporate meeting planning, festivals development, and government tourism agencies, including parks.

HRTM 421, Tourism Issues.....	3
HRTM 422, Tourism Development and Expansion.....	3
HRTM 423, Hospitality and Tourism Research and Applications.....	3
HRTM 424, Recreation Program Management.....	3
HRTM 443, Festival and Event Planning.....	3

**•General Hospitality\***

You may, in consultation with your adviser, also choose from these professional courses to reach the required 9 additional credits.

HRTM 404, Gaming Operations and Organization.....	3
HRTM 442, Trade Shows and National Conventions.....	3
HRTM 444, Meetings and Conventions.....	3

**•Open Electives**

Nineteen hours of free electives are available to meet your goals.

\*Plus a sufficient number of electives to ensure a minimum of 128 semester credits, some of which must be in courses at the 300 level or above to meet the university requirement of 55 credits at this level. These elective courses are designed to provide you with an opportunity to learn about or possibly minor in another field of study. This selection may depend on your professional career choices and interest in the specific hospitality area itself. Course requirements for minors in other areas differ; therefore, it is necessary for you to consult with your advisor.