

# Dale Bumpers College of Agricultural, Food and Life Sciences

## Dean of the College

E-108 Agricultural, Food  
and Life Sciences Building  
479-575-4446

## Advising Office, Scholarships, Student Relations

E-108 Agricultural, Food  
and Life Sciences Building  
479-575-2252

## Dean

Gregory J. Weidemann, Ph.D.  
University of Wisconsin

## Associate Dean

Donna L. Graham, Ph.D.  
University of Maryland

## World Wide Web

<http://www.uark.edu/depts/dbcafls>

## OBJECTIVES

The objectives of the Dale Bumpers College of Agricultural, Food and Life Sciences are to improve agriculture and family living in Arkansas, to stimulate students in their own development, to foster an attitude of inquiry and to develop leadership.

To accomplish this, the curricula are designed to include basic courses in physical, biological and social sciences, mathematics, the humanities, and communications, as well as agriculture and human environmental sciences. Such education is important to prepare young men and women for careers for the 21<sup>st</sup> century.

## HISTORY AND ORGANIZATION

As the land-grant university of Arkansas, the University of Arkansas has the responsibility for leadership in agricultural and human environmental sciences. This responsibility is shared with the Division of Agriculture, and it includes teaching, research and service functions.

The Bumpers College is an integral component of the University of Arkansas and addresses the teaching responsibility of the land-grant university. Its roots lie in the First Morrill Act of 1862, which created the land-grant system by providing a grant of land to each state for the establishment of a college "where the leading objective shall be, without excluding other scientific and classical studies and including military tactics, to teach such branches of learning as are related to agriculture and the mechanical arts in such manner as the legislatures of the state may prescribe to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." Agricultural sciences have been taught at the University of Arkansas almost from the beginning of the institution in 1872. The first degrees in agriculture were conferred by the University almost 90 years ago.

The passage of the Hatch Act in 1887 and subsequent legislation made possible the Agricultural Experiment Station, the research component of the Division of Agriculture. Most faculty who teach in the Bumpers College also hold appointments in the Experiment Station and are able to incorporate active research into their teaching.

The dissemination of University research to the state was made possible by the Smith-Lever Act of 1914, plus subsequent legislation, which created the Cooperative Extension Service in agricultural and human environmental sciences. Many Extension specialists also hold adjunct faculty status and bring their expertise to the teaching program.

It is this blending of teaching, research and service functions that create a unique learning environment in the College. As students learn to relate basic areas of science to human needs, they study in laboratory-based classes and are taught in research facilities supported by the Division of Agriculture. Similarly, students are encouraged to intern with professionals in industry and governmental agencies, including the Cooperative Extension Service.

The School of Human Environmental Sciences was originally established as the department of home economics in 1913. The department was elevated to school status in 1994, and its name was changed to the School of Human Environmental Sciences.

In recognition of the land-grant mission of the University and its commitment to serve the entire state, the Dale Bumpers College of Agricultural, Food and Life Sciences has worked cooperatively with numerous community colleges to organize the Arkansas Consortium for Teaching Agriculture (ACTA). ACTA is designed to facilitate the "seamless" transfer of students from community colleges to the Bumpers College. Coordinated advising, recruiting and curricula development are working goals of the Consortium. Students interested in ACTA should contact the dean's office.

### Services for Students with Children

There are two services administered by the School of Human Environmental Sciences that can benefit young children whose parents are students at the U of A.

The Infant Development Center (IDC), located at 536 N. Leverett Street, provides care for children age three months to three years. At least one parent must be a UA student and priority is given to undergraduate parents, single parents, and families in which both parents are UA students.

The Nursery School provides care for children from the entire community who are between the ages of three and five years.

Enrollment in each program is limited, and no provision is made to accommodate "drop-ins." For fee and other information, call the School of Human Environmental Sciences at (479) 575-4306.

### DEGREES OFFERED

All entering students (including freshmen, international and transfer students) admitted to the University of Arkansas, Fayetteville, are eligible to pursue a degree program in the Dale Bumpers College of Agricultural, Food and Life Sciences. Degrees offered are as follows:

The Bachelor of Science in Agricultural, Food and Life Sciences (B.S.A.)

The Bachelor of Science in Human Environmental Sciences (B.S.H.E.S.)

The Bachelor of Interior Design (B.I.D.)

### Non-Degree Training

While most students enrolled in the Dale Bumpers College of Agricultural, Food and Life Sciences work toward a degree, students who desire additional education of a specific nature but who do not wish to fulfill all requirements for a degree may enroll as special or unclassified students.

### COLLEGE SCHOLARSHIPS

In addition to the scholarships awarded by the University, there are a number of scholarships available to students in agricultural and human environmental sciences made possible by generous gifts from many firms and individuals. During the 2000-2001 school year, the College awarded approximately 375 scholarships for a total of over \$600,000. To be considered for a college scholarship, students must first be admitted to the University. Most scholarships require students to be enrolled full-time, which is at least 12 credit hours per semester. A College scholarship application, which serves as an application to all available scholarships offered by the College, must be submitted

by March 1 each year (priority deadline for freshmen is February 15). A book listing various outside scholarships is available for review in the dean's office, E-108, Agricultural, Food and Life Sciences Building. There are also miscellaneous outside scholarships for which applications are available in some departmental offices. For more information on scholarships, contact the dean's office.

### STUDENT ORGANIZATIONS, BUMPERS COLLEGE

The **Agricultural Business Club** is a student organization for those interested in agricultural business and economics.

**Agricultural Communicators of Tomorrow (ACT)** is designed for students with an interest in agricultural communications. It allows students an opportunity to interact with others with similar interests at the college and professional level.

The **Student Branch, American Society of Agricultural Engineers (ASAE)** is an organization for students interested in agricultural engineering.

The **American Society of Interior Designers (ASID)** is a professional society dedicated to serving the entire profession and maintaining the highest possible standards for the practice of interior design. ASID student members participate in a wide range of learning experiences and stimulating programs that complement their academic training. Through the Society's thousands of professional members, student members gain important insight into the professional aspects of interior design.

The **Arkansas Animal Industry Club** is for students who are interested in any phase of animal science. It is affiliated with the National Block and Bridle Club.

**Collegiate 4-H/FFA** is for any student who has been active in 4-H and/or FFA or has a current interest in service to these youth-serving organizations. This club is especially designed for students interested in teaching agricultural education or working in Extension.

All human environmental sciences majors are eligible for student membership in the **National Association of Family and Consumer Sciences** and in the campus section of the **Association of Family and Consumer Sciences**. Monthly meetings highlight various phases of human environmental sciences and provide social contact with other majors. In addition, members become involved in local service projects and may attend statewide workshops and leadership training sessions.

The **Crop Management/Environmental, Soil, and Water Science Club** is a

student organization for those interested in crops and soils through both an agricultural and environmental perspective.

The **Horticulture Club** is a student organization for those interested in horticulture including floriculture, ornamentals, turf, small fruits and vegetables.

The **Pre-Vet Club** is for students interested in veterinary medicine and is especially designed for those students in the pre-veterinary medicine curriculum.

The **Food Science Club** is an organization for those students interested in food science.

The **Northwest Arkansas Association for the Education of Young Children** is an organization for students who are interested in the welfare of young children. The organization, through programs, publications, and trips, offers students information about career opportunities in human development.

The **Student Dietetic Association** is an organization for students who are interested in the profession of dietetics. The purposes are to promote growth in professional attitudes and to provide various programs of interest to the members.

The **Fashion Merchandising Club** is an organization open to all students interested in the fashion industry.

The **Poultry Science Club** is open to all students interested in any phase of the poultry industry or related fields.

There are also numerous general organizations on the University campus, and students of the Dale Bumpers College of Agricultural, Food and Life Sciences participate in most of them. These include fraternities, sororities, honor and scholarship organizations, religious and music groups, sports organizations, and others.

### HONOR SOCIETIES

**Alpha Zeta** is the professional honor fraternity for students of agriculture. To be invited to become a member, a student must rank in the upper two-fifths of the class and be recognized for leadership and character.

**Phi Upsilon Omicron** is the professional honor fraternity for human environmental sciences students. To be eligible for invitation to membership, a student must rank in the upper 35 percent of the class and be recognized for character and leadership.

**Gamma Sigma Delta** is the honor fraternity for graduating seniors, graduate students, faculty, and alumni of the Dale Bumpers College of Agricultural, Food and Life Sciences. Seniors must rank in the upper 25 percent of their class to be eligible for membership, but not more than 15 percent of the class may be elected for membership. The highest-ranking sophomore and

the highest-ranking senior are recognized annually by the society.

**Alpha Tau Alpha** is a national honorary professional fraternity for those preparing to become teachers of agricultural education. Its mission is to develop a true professional spirit in the teaching of agriculture, to help train teachers of agriculture who shall be leaders in their communities, and to foster a fraternal spirit among students in teacher training in agricultural education.

## COLLEGE ACADEMIC AND DEGREE REQUIREMENTS

### General Residency Requirement

For the Bachelor of Science in Agricultural, Food and Life Sciences degree, a student may choose one of 16 majors that satisfies his or her interests and goals for educational achievement. Some programs have concentrations; most allow students to select a minor.

For the degree of Bachelor of Science in Agricultural, Food and Life Sciences, students will complete a minimum of 30 semester hours within the Bumpers College.

For the degree of Bachelor of Science in Human Environmental Sciences and Bachelor of Interior Design, students will complete a minimum of 30 hours within the School of Human Environmental Sciences at the University of Arkansas.

### Grade-Point Requirement

A grade-point average of 2.00 ("C" average) on all work attempted at the University of Arkansas is required for graduation.

### Rules Applying to Course Work Used for Degree Credit

1. No credit will be given for duplicate coursework.
2. A maximum of six hours of internship and six hours of special problem may be counted for degree credit.
3. Elective courses used for degree credit may be chosen from any department in the University and are subject to the approval of the academic adviser.
4. Students are encouraged to join the University band, chorus and judging teams, and to participate in debate, drama, athletics, etc. A total of six semester hours of elective credits in such activities may be counted toward a degree. The maximum elective credits in any one activity that may be counted toward a degree are as follows:

	HOURS
Band and/or chorus	4
Drama and/or debate	4
Judging teams	4
Physical education activities or athletics	4

5. Any course taken by correspondence, including Web-based courses, must be approved in advance in the dean's office if the credits earned in the course are to be applied toward a degree. This applies regardless of the school from which the course is taken.

### Requirements to Graduate with Honors

Students who have demonstrated exceptional academic performance in baccalaureate degree programs will be recognized at graduation by the honors designation of *Cum Laude*, *Magna Cum Laude* or *Summa Cum Laude*. To earn these distinctions, a student must meet the following criteria:

1. At least one-half of the degree course work must have been completed at the University of Arkansas, Fayetteville.
2. Only the grade-point average on course work completed at the University of Arkansas, Fayetteville, will be considered.
3. For each of the three distinctive honors, the student must have the minimum grade-point average indicated.
  - (a) *Cum Laude*: 3.50–3.74
  - (b) *Magna Cum Laude*: 3.75–3.89
  - (c) *Summa Cum Laude*: 3.90–4.00
4. Students may graduate with honors without participating in the Honors Program.

### Additional Requirements

In addition to the University requirements for graduation, including the University Core requirements (page 41), a student must complete a prescribed degree curriculum in accordance with the rules and regulations of the Dale Bumpers College of Agricultural, Food and Life Sciences to be eligible for a baccalaureate degree from the College.

Former students of the College who are readmitted after an absence of one year may be expected to meet the curriculum requirements in effect at the time of their readmission. Students should consult their academic adviser for degree planning before registering for classes.

Students interested in earning an additional bachelor's degree should refer to the University requirements on page 41.

## HONORS PROGRAM

The Bumpers College Honors Program provides students with opportunities for intellectual enrichment beyond the traditional undergraduate experience. This is accomplished through special honors courses, completion of an undergraduate honors thesis and other significant activities including interactions with students in honors programs in other colleges.

The results of the student's original research or creative project is published in *Discovery*, the UA undergraduate research journal. In support of these efforts, participants in the Honors Program are eligible to receive an honors stipend in support of their research projects. The transcript and diploma of each honors graduate will designate the student as an honor graduate of the college. At the college commencement ceremony, each honors graduate will wear special regalia and have the title of their honors thesis and their mentor's names listed in the graduation program. Honors graduates will be recognized as graduating with Honors distinction. Students must maintain a GPA of 3.25 to remain in the program.

## COLLEGE CURRICULA

The B.S.A., B.S.H.E.S. and B.I.D. degrees will be conferred upon students who have met all the general University and College requirements for a degree, and who have completed 124 semester hours in accordance with the college requirements.

Students, with the assistance of a faculty adviser, will plan a program best suited to their own background, training and objectives. The program of study will be decided after consideration of a student's preparation, aptitudes, test scores, and other information. Undeclared students will work with an adviser as they explore program opportunities within the college. Students must inquire about specific requirements in the department or school where the major is located. Students are responsible for meeting all requirements for graduation.

### Selection of a Major

A student who elects to major in some area of agricultural or human environmental sciences should plan the program with a faculty adviser. While undecided students are welcome, early selection of a major will permit better planning and proper sequencing of courses. The student and faculty adviser work closely to ensure that curriculum requirements are met in a timely fashion. A student uncertain about a major will be advised as an undeclared major through the dean's office.

**Requirements for a B.S.A. Degree**

	HOURS
1. A total 124 semester hours with a minimum 2.0 cumulative grade-point average.	124 Total
2. A minimum of 39 hours of courses at the 3000-level and above.	39+
3. University Core Requirements See pages 41. Check requirements for each major; some require specific core courses.	35
4. Other University Requirements ENGL 2003, Advanced Composition Requirement or ENGL 2013 (See page 41 for details.)	3
5. College Requirements COMM 1313 Communications Elective See specific majors for requirement. Bumpers College courses outside of major may be included in departmental requirements	15 3 3
6. Electives May be used to develop a minor	0-9 0-32
7. Departmental Requirements See specific majors and concentrations	33-59

**AGRICULTURAL MAJORS AND MINORS**

Majors, some with concentrations, are as follows:

**Agricultural Business (AGBS)**

Concentration A:

Agribusiness Management and Marketing (ABMM)

Concentration B:

Pre-Law (PRLW)

Concentration C:

Agricultural Economics (AGEC)

**Agricultural Education, Communications and Technology (AECT)**

Concentration A:

Agricultural Education (AGED)

Concentration B:

Extension and Industry Education (EXIE)

Concentration C:

Agricultural Systems Technology Management (ASTM)

Concentration D:

Agricultural Communications (ACOM)

**Animal Science (ANSC)****Crop Management (CPMG)****Environmental, Soil, and Water Science (ESWS)****Food Science (FDSC)**

Concentration A: Food Science (FDSC)

Concentration B: Food Science and Industry (FDSI)

**Horticulture (HORT)**

Concentration A:

Horticulture Management and Production (HMAP)

Concentration B:

Horticulture Science (HSCI)

Concentration C:

Horticulture Merchandising (HMER)

**Pest Management (PMGT)****Poultry Science (POSC)****Turf & Landscape Horticulture (TLHT)**

Concentration A:

Turf Management (TLHT)

Concentration B:

Landscape Horticulture (LHRT)

**Seventeen minors are offered:**

Agricultural Business (AGBS)

Agricultural Education (AGED)

Agricultural Systems Technology Management (ASTM)

Animal Science (ANSC)

Crop Management (CPMG)

Entomology (ENTO)

Environmental, Soil, and Water Science (ESWS)

Extension and Industry Education (EXIE)

Food Science (FDSC)

Global Agricultural, Food

and Life Sciences (AFLS)

Horticultural Production (HORT)

Journalism (JOUR)

Landscape Design

and Urban Horticulture (LDUH)

Pest Management (PMGT)

Plant Pathology (PLPA)

Poultry Science (POSC)

Turf Management (TURF)

**SCHOOL OF HUMAN ENVIRONMENTAL SCIENCES MAJORS AND MINORS**

Food, Human Nutrition and Hospitality, (FHNH)

Concentration A:

Dietetics (DIET)

Concentration B:

General Foods and Nutrition (GFNU)

Concentration C:

Hospitality and Restaurant

Management (HRMN)

Apparel Studies (APST)

General Human Environmental Sciences (HESC)

Human Development, Family Sciences

and Rural Sociology (HDFS)

Concentration A:

Child Development (CDEV)

Concentration B:

Lifespan (LSPN)

Two minors are offered in human environmental sciences: human development and family sciences, and human nutrition.

**Minors in Other Colleges**

Students in the College of Agricultural, Food and Life Sciences may pursue an academic minor in the Sam M. Walton College of Business or in the J. William Fulbright College of Arts and Sciences. These minors usually consist of 15 to 20 hours of course work. For requirements regarding minors, check the catalog under the department offering the minor. Students must notify the dean's office of their intention to pursue a minor.

**Minor in Journalism**

This minor allows for a combination of training in journalism with a specialization in agriculture or human environmental sciences. Its purpose is to prepare the student for employment with firms and institutions that produce agricultural or human environmental sciences publications or employ public relations personnel.

**Requirements for a minor in journalism:** Students interested in a journalism minor may choose from one of three areas:

Print Journalism (18 semester hours)

JOUR 1023, 1033, 2013, 3013, 3123 and 3633

Broadcast Journalism (18 semester hours)

JOUR 1023, 1033, 2032/2031L, 3072/3071L, 3633 and 4863/4860L

Print and Broadcast Journalism (18 semester hours)

JOUR 1023, 1033, 2013, 2032/2031L, 3072/3071L and 3633

A student interested in a journalism minor must notify his or her major adviser for detailed information. The minor is coordinated by the department of agricultural and extension education.

**PRE-VETERINARY MEDICINE**

Because Arkansas does not have a college of veterinary medicine, the Arkansas General Assembly has authorized funds for education in veterinary medicine at out-of-state institutions. The State Board of Higher Education is the designated agent for the State of Arkansas, and the Student Loan Authority is authorized to administer the program. Terms and conditions prescribed by the Student Loan Authority are as follows: the grant will cover only out-of-state tuition, and the student will pay his or her own fees and expenses.

Contracts have been negotiated with the Board of Control for Southern Regional Education for education in veterinary medicine at Louisiana State University, Mississippi State and at Tuskegee University. Arrangements have also been made with the University of Missouri and Oklahoma State University. Under the provisions of the legislation, only citizens of Arkansas are eligible. They must enroll in and complete the

pre-veterinary medicine curriculum to satisfy the admission requirements of these colleges of veterinary medicine.

The pre-veterinary medicine program at the University of Arkansas is administered in the departments of animal and poultry science of the Dale Bumpers College of Agricultural, Food and Life Sciences. There are faculty in these departments who help counsel and advise students regarding their pre-veterinary medicine program. There are also faculty veterinarians who provide some insight into the practice of veterinary medicine and are knowledgeable about many of the problems encountered in establishing a practice upon graduation. Some of these veterinarians have been in private practice; others have been involved in full-time agricultural research since graduation from veterinary medicine and graduate school. Because there is a wide cross-section of experience among these faculty, students find their counsel valuable in planning a future in veterinary medicine.

While it is possible to complete requirements for admission to some colleges of veterinary medicine in two years, most students take three years or more to complete the requirements, and most complete a B.S.A. degree before being admitted. Students who carefully plan their work may complete a B.S.A. degree by transferring hours earned in the first two years at an accredited college of veterinary medicine back to the University of Arkansas, provided they complete certain degree requirements at the University prior to entering a school or college of veterinary medicine. These students must complete a minimum of 94 hours of a 124-hour program of prescribed courses. This will require three years and one or two 6-week summer terms for most students. Therefore, students should inform their adviser early in their program that they wish to be in a pre-vet degree program.

The Bumpers College of Agricultural, Food and Life Sciences is ready to assist students in fulfilling their pre-veterinary medicine requirements whether they desire to complete them in a two-year span or over three or four years. The supporting departments at the University, including chemistry, English and biological sciences, all offer quality courses that give a student an excellent background for the pursuit of a degree in veterinary medicine.

To earn the professional degree, a student must complete the pre-veterinary medicine requirements and the four-year prescribed curriculum in one of the colleges of veterinary medicine.

### Required Examinations

All required examinations are given on campus and administered by testing services (Hotz Hall 730, phone, 479-575-3948). Exams must be taken at least by late fall of the year prior to entering vet school. Application forms

for taking the exams can be picked up at testing services. Applications should be turned in at least 30 days prior to examination. Students seeking admission to Louisiana State University may take the MCAT on one of the two national testing dates in the spring or early fall or the Graduate Record Examination (GRE), which is given frequently.

Students who wish to apply for admission to either Tuskegee University or the University of Missouri must take the VCAT, which is given twice each fall.

Students applying for admission to Oklahoma State University must take the general test and the biology test of the G.R.E., which is given frequently on campus.

### Applications

Students applying to Louisiana State University and/or Oklahoma State and Mississippi State must fill out a Veterinary Medical College Application Service (VMCAS) form, available at their online site ([www.aavmc.org](http://www.aavmc.org)). Students must complete the application and have it postmarked by Oct. 1<sup>st</sup> of the year prior to beginning studies. Students applying to the University of Missouri may obtain the application form at <http://www.hsc.missouri.edu/vetmed.docs.adm.html>. Applications must be received by Nov. 1 of the year prior to entry. Applications forms for Tuskegee University may be obtained from the University of Arkansas department of animal science or directly from Tuskegee University. Application forms are due by Dec. 5<sup>th</sup> of the year prior to entering school. Since requirements for the various veterinary schools periodically change, it is important that students check with their adviser about specific school requirements as they progress through the pre-veterinary requirements.

All students should contact the Coordinator of Veterinary Medicine, Dale Bumpers College of Agricultural, Food, and Life Sciences B109, University of Arkansas, Fayetteville, Arkansas 72701, phone (479) 575-4351 in the spring prior to making fall application for admission to a veterinary school to verify that they can complete the requirements for the school they wish to attend. Pre-professional requirements and specific requirements for admission to colleges of veterinary medicine at Louisiana State University, Oklahoma State University, University of Missouri and Tuskegee University are listed with information on the Web for the department of animal science at <http://www.uark.edu/depts/dbcafls/>.

### GRADUATE STUDIES

The Graduate School of the University, in cooperation with the Dale Bumpers College of Agricultural, Food and Life Sciences, offers the master of science degree in each of its nine departments and in one school. Six doctoral

degrees are offered. More detailed information regarding individual programs may be obtained by contacting the administrative office of each department, or by consulting the *Graduate School Catalog*.

## Departments, Degree Programs and Courses

### AGRICULTURAL AND EXTENSION EDUCATION (AGED)

Don R. Herring  
Head of the Department  
205 Agriculture Building  
575-2035

- Emeritus University Professor Hardy
- Professors Graham, Herring, Johnson, Wardlow
- Adjunct Professors Lyles, Baker
- Professors Emeriti Braker, Ferguson, Love, Rolloff
- Associate Professors Arthur, Scott
- Associate Professor Emeritus Scanlon
- Assistant Professor Miller
- Research Assistant Professor Lester
- Adjunct Assistant Professors Burch, Plafcan

The department of agricultural and extension education offers a degree program in agricultural education, communication and technology. Students with this major are in constant demand due to the rapidly changing educational needs of the agricultural and natural resources industries. Graduates with this degree have a broad knowledge of agricultural disciplines. They are prepared as agricultural technology transfer specialists to enter a variety of careers in formal and non-formal teaching roles in either the public or private sector as agricultural educators, Extension agents, industry-based trainers, information specialists or technology-management specialists. Students in agricultural education, communication and technology may choose one of four areas of concentration listed below, or, with adviser's approval, select courses from more than one concentration area.

### Concentration A - Agricultural Education (AGED)

This area of concentration is designed for students who wish to be certified to teach agricultural science in public schools. Students may choose one of two options for teacher certification: either a four-year certification program or a five-year certification program that culminates in a master's degree (M.A.T.). The department of agricultural and extension education has information about both

programs. Admission and graduation requirements for the M.A.T. program are listed on in the College of Education and Health Professions section of this catalog.

### Concentration B- Extension and Industry Education (EXIE)

This concentration is designed for students who desire employment as professional educators/change agents with either the Cooperative Extension Service or in agricultural business and industry. Graduates from this program are in demand because it combines strong leadership, team management, communication and human relations skills with a broad base of competencies in scientific agriculture.

### Concentration C - Agricultural Systems Technology Mgmt. (ASTM)

Students planning a professional career related to technical operations and management in agricultural industry should enroll in this concentration. Graduates assume positions of leadership and responsibility in such areas as agricultural services and sales, agricultural management, agricultural production systems, product service, product testing and service management. The program focuses on preparing students as problem solvers in the application, management and/or marketing of agricultural technology.

### Concentration D - Agricultural Communications (ACOM)

This concentration is designed to produce graduates with both technical knowledge about the food and fiber industry and the communication skills needed to convey in an effective manner the story of agriculture to consumers, policy makers and the public at large. Interpersonal and group communication, public relations, graphic art, video and television production, electronic communication, distance learning, video conferencing and writing for the media are emphasized in this program.

**Requirements for a major in agricultural education, communication and technology** (See page 41 for University Core and page 68 for B.S.A. requirements)

35 hours of **University Core requirements** to include:

CHEM 1074/1071L<sup>1</sup> and BIOL 1543/1541L (Two semesters of chemistry, CHEM 1103/1101L and 1123/1121L, may be substituted for CHEM 1074/1071L.)  
 AGECE 1103 or AGECE 2103  
 PSYC 2003  
 WLIT 1113 or WLIT 1123  
 (Required for AGED)

**University Advanced Composition Requirement:** ENGL 2003 - exemption possible

**College Requirements** - COMM 1313, AGED 3142/3141L

**Departmental Requirements** - 86 hours (includes concentration and elective hours):  
 CHEM 2613/2611L  
 MBIO 2013/2011L or PHYS 1044 (or higher level)  
 HLSC 3633 and the following agricultural courses:  
 AGED 1001 - Orientation to Agricultural and Extension Education  
 AFLS 1011 - Freshman Orientation  
 AGED 4003 - Issues in Agriculture  
 AGME 1613/1611L - Fundamentals of Ag Systems Technology/Lab  
 CSES 2203/2201L - Soil Science/Lab  
 CSES/HORT 1203 - Intro to Plant Sciences  
 ENTO 2013 - Pest Management

### Concentration A (AGED)

BIOL, BOTY, MBIO or ZOOZ elective – 4 hours  
 Agricultural electives 13 hours – selected in conjunction with adviser plus the following courses:  
 AGED 1122 - Agri Youth Organizations  
 AGED 3133 - Methods in Ag Ed  
 AGED 4012 - Program Development  
 AGED 4843 - Methods in Ag Labs  
 AGME 2123 - Metals and Welding  
 AGME 3102/3101L - Small Power Units/Turf Equipment/Lab or  
 AGME 3173/3170L - Electricity in Agriculture or  
 AGME 4203 - Mechanized Sys Mgmt.  
 AGME - two hours JR/SR elective  
 CIED 1002/1011 - Intro to Education  
 CIED 3023 - Survey of Exceptionalities  
 CIED 3033 - Classroom Learning Theory  
 ETEC 2001/2002L - Educational Technology/Lab or  
 AGME 2903 - Applications of Microcomputers  
 HORT - 3 elective hours

**Concentrations B (EXIE), C (ASTM) and D (ACOM)** take the following common courses:

BIOL, BOTY, MBIO, ZOOZ or MATH (above MATH 1203) elective - 3 hours  
 Agricultural Electives - 10-17 hours selected in conjunction with adviser:  
 AGED 3133 - Methods in Ag Ed or  
 EXED 4173 - Prin of Extension Teaching  
 AGED 4012 - Program Development or  
 AGED 3153 - Leadership Development in Agriculture or  
 EXED 3023 - Intro to Coop Extension Service  
 AGME 2903 - Applications of Microcomputers

AGME 4011 - Senior Seminar  
 EXED 475V (3 hours) - Internship in Extension

**Additional Requirements for Concentration B (EXIE):** 14 to 21 hours

AGED 3153 - Leadership Development in Agriculture  
 EXED 3023 - Intro to Cooperative Extension Service  
 EXED 4183 - Management of Volunteer Programs

5-6 hours from the following:

COMM 3303 - Small Group Communication  
 RSOC 4623 - Intro Community Dev or  
 RSOC 2603 - Rural Sociology  
 AGED 1122 - Agri Youth Organizations  
 VAED 3213 - Introduction to Human Resource Development  
 VAED 3113 - Skills/Strategies in HRD  
 VAED 4113 - Theory and Principles of Adult Education  
 MGMT 3563 - Mgmt Concepts and Organizational Behavior  
 MGMT 3643 - Team Management

**Additional Requirements for Concentration C (ASTM):** 14 to 21 hours. Select from:

AGME 2123 - Metals and Welding  
 AGME 2153 - Surveying in Ag & Forestry  
 AGME 3102/3101L - Small Power Units/Turf Equipment/Lab  
 AGME 3173 - Electricity in Ag  
 AGME 4203 - Mechanized Sys Mgmt  
 AGME 4963 - Soil & Water Conser Tech  
 AGME 4973 - Irrigation  
 PHYS 220V - Intro Electronics I  
 PHYS 320V - Intro Electronics II  
 FDSC 4754 - Principles of Processing of Agricultural Products  
 GEOG 4523 - Computer Mapping  
 GEOG 4543 - Geographic Info Sys  
 GEOG 4593 - Introduction to Global Positioning Systems

**Additional Requirements for Concentration D (ACOM):** - 14-21 hours

COMM 2303 - Public Speaking  
 COMM 3303 - Small Group Comm  
 JOUR 1033 - Fundamentals of Journalism

And select 5 hours from the following:

AGED 4143 - Electronic Communications in Agriculture  
 AGED 401V (3 hours) - Special Topics in Agriculture Communication  
 COMM 3703 - Organizational Comm  
 JOUR 1023 - Media and Society  
 JOUR 2013 - News Reporting I  
 JOUR 3023 - News Reporting II

JOUR 2032/2031L - Broadcast News Reporting I  
 JOUR 3072/3071L - Broadcast News Reporting II  
 JOUR 2332/2331L - Photojournalism I  
 JOUR 3743 - Public Relations Principles

**Requirements for a minor in Agricultural Education (AGED):**

22 hours to include the following: CIED 1002, CIED 1011, ETEC 2002L/2001, or AGME 2903, CIED 3023, CIED 3033, AGED 1122, AGED 3133, AGED 4843, and AGED 4012.

A student completing the requirements for this minor meets the education hours required for entry into the master of arts in teaching (M.A.T.). Students interested in being certified to teach must contact the department of agricultural and extension education for additional requirements to enter the M.A.T. program.

**Requirements for a minor in agricultural systems technology management (ASTM):**

18 hours to include AGME 1613 and AGME 2903 and 12 hours selected from the following:

AGME 1611L	AGME 2123
AGME 2153	AGME 3102/3101L
AGME 3173	AGME 4203
AGME 4963	AGME 4973
FDSC 4754	

Students planning to minor in ASTM should contact the department of agricultural and extension education.

**Requirements for a minor in extension and industry education (EXIE):**

18 hours to include AGED 1122, AGED 1001, EXED 3023, AGED 3133 or EXED 4173, EXED 475V, and MGMT 3563 or RSOC 4623.

Select 3 additional hours from COMM 2303, COMM 3303 and JOUR 1033 or AGED 3143.

Students planning to minor in EXIE should contact the department of agricultural and extension education.

**Requirements for a minor in journalism (JOUR):** 18 hours. See page 68 for specific requirements.

**Requirements for a minor in global agricultural, food and life sciences (AFLS):**

Students must successfully complete 18 hours of regular courses, including 15 hours of required courses and 3 hours of elective courses as described on page 71. No other program component is required for this minor.

SEE PAGES 261 AND 295 FOR AGRICULTURAL AND EXTENSION EDUCATION COURSES (AGED, EXED OR AGME)

**AGRICULTURAL ECONOMICS AND AGRIBUSINESS (AGEC)**

M. J. Cochran  
 Head of the Department  
 221 Agriculture Building  
 575-2256

- University Professor LaFerney
- Professors Cochran, Dixon, Redfern, Wailes
- Adjunct Professors Millager, Miller
- Professors Emeriti Berry, Headley, Jackson, Meenen, Morrison, Price
- Associate Professors Ahrendsen, Goodwin, Parsch, Popp (M.)
- Assistant Professors McKenzie, Popp (J.), Rainey, Thomsen
- Adjunct Assistant Professor Bryant
- Adjunct Instructor Hipp

The agricultural business degree program provides education suited to career opportunities in agricultural business management and agricultural marketing in both the domestic and international areas.

Managers of farms and agricultural businesses are continually required to make organizational and operational decisions. The basic skills and knowledge needed for making sound decisions are provided by the agricultural business curriculum. Students may elect to specialize in areas compatible with their personal objectives, depending upon the extent of accounting and business orientation desired.

Students educated in agricultural business are in demand for positions in agricultural industries, farm operation and management, marketing agencies, agricultural service organizations, state and federal agencies, and numerous other positions. For those who go on to graduate school, teaching and research positions are available with land grant colleges as well as with other institutions. Three concentrations are available to meet career objectives:

- A. Agricultural Management and Marketing (ABMM)
- B. Pre-Law, for students preparing to attend law school (PRLW)
- C. Agricultural Economics, which emphasizes quantitative and analytical skills to prepare students for graduate school (AGEC)

**Requirements for a B.S.A. degree with a major in agricultural business** (See page 41 for University Core and page 68 for B.S.A. requirements)

35 hours of **University Core requirements** to include  
 4 hours of biology or botany (BIOL 1543/1541L or BOTY 1613/1611L)

4 hours of chemistry (CHEM 1053/1051L or CHEM 1074/1071L or CHEM 1103/1101L or CHEM 1123/1121L)  
 PSYC 2003 or SOCI 2013 or RSOC 2603  
 AGECE 1103 and AGECE 2103

**University Advanced Composition Requirement:**

ENGL 2003 - exemption possible

**College Requirements:**

COMM 1313 and 3 hours communication elective selected from  
 AGED 3142/3141L, COMM 2303, COMM 2373, COMM 3303, COMM 3383 or ENGL 3053  
 General Electives - 20 hours  
 College Broadening Electives - 9 hours

**Departmental Requirements (51-52 hours) for Concentrations A and B: agribusiness management and marketing and pre-law:**

AGEC 2303 - Intro to Agribusiness  
 AGECE 3403 - Farm Business Mgmt.  
 AGECE 4613 - Domestic & International Agricultural Policy  
 ECON 3033 - Microeconomics  
 ECON 3133 - Macroeconomics  
 ACCT 2013 - Intro Acct Info I  
 ACCT 2023 - Intro Acct Info II  
 MATH 2053 - Finite Math  
 MATH 2043 - Survey of Calculus  
 ISYS 2013 - Business Statistics or  
 STAT 4003/4001L - Statistical Methods

For **Concentration A, agricultural management and marketing**, select one of the three groups below:

**Agribusiness Management**

AGEC 3303 - Food and Agriculture Marketing  
 AGECE 3503 - Agricultural Law I  
 AGECE 4143 - Agricultural Finance  
 AGECE 4313 - Agri Business Mgmt.  
 9 hours of upper-level AGECE or College of Business courses

**Farm Business Management**

AGECE 3373 - Futures and Options Markets  
 AGECE 3503 - Agricultural Law I  
 AGECE 4143 - Agricultural Finance  
 AGECE 4403 - Advanced Farm Business Management  
 9 hours of upper-level AGECE or College of Business or technical agriculture courses

**Agricultural Marketing**

AGECE 3303 - Food and Agricultural Marketing

AGEC 3373 - Futures and Options Markets  
 AGEC 4303 - Advanced Agri Marketing Management  
 AGEC 4113 - Agri Prices and Forecasting  
 AGEC 4373 - Advanced Price Risk Management  
 6 hours of upper-level AGEC or College of Business courses

### Concentration B, Pre-Law

AGEC 3373 - Futures and Options Markets  
 AGEC 3413 - Principles of Environmental Economics  
 AGEC 3503 - Agricultural Law  
 AGEC 4143 - Agricultural Finance  
 AGEC 4313 - Agri Business Mgmt.  
 ACCT 3613 - Managerial Uses of Accounting Info  
 3 upper-level hours from AGEC, ACCT, FINN, MGMT or ISYS approved by adviser

**3/3 Program.** Exceptional students in the Pre-Law concentration may enroll in the Law School in their fourth year provided that the following requirements have been met:

1. complete all university, college and department core requirements for the pre-law concentration.
2. completed 12 hours in the specialization list for pre-law.
3. a cumulative grade-point average in all college or university course work of at least 3.50 without grade renewal.
4. a LSAT score of at least 159. A student may substitute law school course work for the remaining total hours required for the bachelor's degree in agricultural business.

It is a requirement of the Law School's accrediting standards that no student be admitted to Law School until they have completed at least three-fourths of the work necessary for the baccalaureate degree. The requirements embodied in the 3/3 program satisfy this requirement.

**Departmental Requirements (51 hours) for Concentration C,**

### Agricultural Economics:

AGEC 2303 - Intro to Agribusiness  
 ECON 3033 - Microeconomic Theory  
 ECON 3133 - Macroeconomic Theory  
 ACCT 2013 - Intro to Accounting Info I  
 ACCT 2023 - Intro to Accounting Info II  
 MATH 1213 - Plane Trigonometry or  
 MATH 1285 - Precalculus (in lieu of  
 MATH 1203 and MATH 1213)  
 MATH 2053 - Finite Math  
 MATH 2554 - Calculus I  
 MATH 2564 - Calculus II  
 STAT 4003/4001L - Statistical Methods

ECON 4743 - Intro to Econometrics  
 MATH 3083 - Linear Algebra  
 9 hours upper-level AGEC courses  
 6 hours upper-level AGEC or  
 College of Business courses

### Requirements for a minor in agricultural business (AGBS):

18 semester hours to include AGEC 1103 and AGEC 2303; 6 hours from AGEC 3303, AGEC 3373, AGEC 3403 AGEC 3413, or AGEC 4313; and 6 hours to be selected from the following:

ACCT 2013	ACCT 2023	AGEC 2103
AGEC 3303	AGEC 3373	AGEC 3403
AGEC 3413	AGEC 3503	AGEC 4113
AGEC 4143	AGEC 4303	AGEC 4313
AGEC 4373	AGEC 4403	AGEC 4413
AGEC 4613	AGME 2903	BLAW 2013
ECON 3033	ECON 3133	ECON 3533
ECON 4633	FINN 3043	FINN 3623
ISYS 2013	ISYS 2232	ISYS 3333
ISYS 3603	MGMT 3553	MGMT 3563
MGMT 3933	MGMT 4403	MGMT 4433
MKTT 3433	MKTT 3533	MKTT 4033
MKTT4553	MKTT 4933	MKTT 4943
MKTT 4953	or STAT 4003/4001L.	

Additional upper-division courses in the Sam M. Walton College of Business may be substituted with approval, provided prerequisites for those courses have been satisfied outside the minor. Students interested in post-graduate study in agricultural economics may obtain adjustments to these requirements to accommodate graduate admission requirements.

### Minor in Global Agricultural, Food and Life Sciences

The Bumpers College offers a minor in global agricultural, food and life sciences to provide students throughout the college opportunities to complement their major field of study with an international component. It is designed to provide learning skills and international experiences leading to greater understanding of global issues in agriculture, human and environmental sciences and the ability to participate effectively.

### Requirements for a minor in global agricultural, food and life sciences (AFLS):

18 semester hours to include AFLS 2003 (new course); 3–6 hours study abroad; AGEC 4163 or AGEC 4613 or AGEC 402V (international topic approved by student's adviser and IAP director); 6 hours to be selected from the following:

ANTH 1023	ANTH 3123	ANTH 4253
FIIR 2813	FLAN	GEOG 2023
GEOG 4783	GEOG 4033	GEOG 4013
GEOG 4243	GEOG 4793	HIST 3043
HIST 3203	HIST 4103	PLSC 2813
PLSC 3803	PLSC 3813	

And 3 hours of elective from the following

(for students only taking 3 hours study abroad):

AGEC 4163	AGEC 4613	AGEC 402V
COMM 4343	ECON 3633	ECON 4633
ECON 4643	ECON 4653	FINN 3703

PCSC 3853 or other courses with an international focus.

SEE PAGE 260 FOR AGRICULTURAL ECONOMICS AND AGRIBUSINESS (AGEC) COURSES

## AGRICULTURAL, FOOD AND LIFE SCIENCES (AFLS)

Director of Honors Program  
 E108 Dale Bumpers College of Agricultural, Food, and Life Sciences Building  
 575-4446

The Bumpers College Honors Program provides students with opportunities for intellectual enrichment beyond the traditional undergraduate experience. This is accomplished through special honors courses, completion of an undergraduate honors thesis and other significant activities including interactions with students in honors programs in other colleges. Students must maintain a GPA of 3.25 to remain in the program.

Honors courses in the college may be chosen from the following:

AFLS 1011 - Freshman Orientation  
 AFLS 102VH - Honors Special Topics for Freshmen  
 AFLS 4003H - Honors Thesis  
 AFLS 401VH - Honors Special Topics

## ANIMAL SCIENCE (ANSC)

Keith Lusby  
 Head of the Department  
 B114 Dale Bumpers College of Agricultural, Food, and Life Sciences Building  
 575-4351

- University Professors Emeriti Brown (C.J.), Stallcup
- Professors Brown (A.H.), Kellogg, Lusby, Maxwell, McNew, Yazwinski
- Professors Emeriti Daniels, Lewis, Loe, Noland, Perkins, Rakes, Piper, Westing
- Adjunct Professors Brown (M.A.), Davis, Chewning, Jennings, McPeake, Nugent, Pennington, Swiderski, Troxel
- Associate Professors Apple, Coblenz, Coffey, Gunter, Johnson, Kegley, Kreider, Rorie, Rosenkrans
- Assistant Professors Cassida, Hellwig, Pohlman
- Assistant Professors Emeriti Heck, Peterson
- Instructors Jack, Kutz

The animal science major is designed to provide the scientific and technical education to prepare students for positions of leadership and responsibility. Students gain valuable experience pertaining to the production of beef and dairy cattle, swine, horses and sheep. In addition, extensive study is offered in the specialized areas of animal health, breeding and genetics, meat science, nutrition, and physiology.

Students majoring in animal science are prepared for a variety of careers. Pre-veterinary, pre-medical and pre-professional course requirements may be fulfilled while meeting degree requirements. Specific career opportunities include positions and services related to the production, merchandising, processing and distribution of meat, milk and related products. Additional opportunities include field persons, farm and herd managers and other agribusiness-related positions. With additional academic training, animal science majors may become extension livestock specialists, nutritionists, geneticists and physiologists.

**Requirements for a B.S.A. degree with a major in animal science:** (See page 41 for University Core and page 68 for B.S.A. requirements)

35 hours of **University Core requirements** to include the following:

BIOL 1543/1541L  
CHEM 1074/1071L

**University Advanced Composition Requirement:** ENGL 2003 - exemption possible

**College Requirements:**

COMM 1313 and  
3 hours communication elective  
See adviser for approved course  
Electives: 20 hours

**Departmental Requirements:**

58 hours to include  
CHEM 2613/2611L  
MBIO 2013/2011L and the following animal science courses:  
ANSC 1001L - Intro Animal Sci. Lab  
ANSC 1032 - Intro Animal Sciences  
ANSC 1041 - Intro Companion Animal Industry  
ANSC 1051 - Intro Livestock Industry  
ANSC 2252L - Intro to Livestock and Meat Evaluation  
ANSC 2781 - Career Preparation and Development  
ANSC 3133 - Animal Breeding/Genetics  
ANSC 3143 - Principles of Animal Nutrition  
ANSC 3433 - Reproductive Physiology  
Select 7 hours from the following:  
ANSC 4252 - Cow-Calf Management  
ANSC 4263 - Swine Production

ANSC 4272 - Sheep Production  
ANSC 4283 - Horse Production  
ANSC 4452 - Milk Production  
ANSC 4652 - Stocker-Feedlot Cattle Management

Select 13 hours from the following:

ANSC 3032 - Animal Physiology I  
ANSC 3042 - Animal Physiology II  
ANSC 3123 - Principles of Genetics  
ANSC 3151L - Applied Animal Nutrition Lab  
ANSC 3152 - Applied Animal Nutrition  
ANSC 3613 - Meat Science  
ANSC 3003 - Applied Animal Parasitology  
ANSC 3013 - Parasitisms of Domestic Non-Herbivores  
ANSC 3333 - Diseases of Livestock

Select 15 hours from the following discipline-related electives:

ANSC 2003, ANSC 2213, ANSC 2303, ANSC 2482, ANSC 3282, ANSC 3291, ANSC 3491, ANSC 3691, ANSC 3722, ANSC 400V, ANSC 401V, ANSC 410V, ANSC 4291  
ACCT 2013, ACCT 2023  
AGEC 1103, AGECE 2103, AGECE 2303  
AGME 2903  
CSES/HORT 1203  
BIOL 2533/2531L  
CHEM 1103/1101L, CHEM 1123/1121L, CHEM 2262, CHEM 2272  
ENTO 2003  
FDSC 2503  
MBIO 2013/2011L  
PHYS 2013/2011L, PHYS 2033/2031L  
POSC 2353, POSC 2363, POSC 2554  
ZOOL1613/1611L and any upper-division course in AGECE, AGED, CSES, AGST, BAST, BIOL, CHEM, FDSC, HORT, MBIO, POSC, ZOOL.

Students should consult an animal science adviser for specific course selections in the elective areas. With appropriate advising, students have an opportunity to complete at least one minor within the 124 hour degree program.

**Requirements for a minor in animal science (ANSC):** 20 hours to include ANSC 1001L, ANSC 1032, ANSC 1041 or ANSC 1051, ANSC 2252L, ANSC 3133, ANSC 3143, ANSC 3433, and 5 hours from the following production and management courses: ANSC 4252, ANSC 4263, ANSC 4272, ANSC 4283, ANSC 4452, and ANSC 4652. Students wishing to minor in animal science must consult with an animal science adviser.

**Requirements for a minor in global agricultural, food and life sciences (AFLS):** Students must successfully complete 18

hours of regular courses, including 15 hours of required courses and 3 hours of elective courses as described on page 71. No other program component is required for this minor.

SEE PAGE 262 FOR ANIMAL SCIENCE (ANSC) COURSES.

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## BIOLOGICAL ENGINEERING (BENG)

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Lalit Verma  
Head of the Department  
203 Engineering Hall  
575-2351

- Professors Griffis, Loewer, Verma
- Professors Emeriti Bryan, Harris, Nelson
- Adjunct Professors Clausen, Gardisser
- Associate Professors Carrier, Costello, Li, Vories
- Adjunct Associate Professors Beitle, Deaton, Huitink, Tacker, VanDevender
- Assistant Professors Bajwa, Chaubey, Kim, Matlock, Osborn
- Adjunct Assistant Professors Haggard, Howell, Wimberly, Yang
- Research Assistant Professor Murphy

The curriculum leading to the professional degree in biological engineering is under the joint supervision of the deans of the Dale Bumpers College of Agricultural, Food and Life Sciences and the College of Engineering. The engineering degree, Bachelor of Science in Biological Engineering (B.S.B.E.), is conferred by the College of Engineering and is described on page 178. Students who wish to receive this degree enroll in the College of Engineering.

SEE PAGE 268 FOR BIOLOGICAL ENGINEERING (BENG) COURSES.

## **CROP, SOIL, AND ENVIRONMENTAL SCIENCE (CSES)**

J. L. Barrentine

Head of the Department  
115 Plant Sciences Building  
575-2354

- Distinguished Professor Oosterhuis
- Distinguished Professors Emeriti Caviness, Frans, Waddle
- University Professors Oliver, Talbert, Wolf
- University Professor Emeritus Lavy
- Professors Bacon, Barrentine, Bourland, Daniel, Gbur, Miller, Moldenhauer, Norman, Phillips, Rutledge, Stewart, West
- Professors Emeriti Gilmour, Hinkle, Thompson
- Visiting Professor Gealy
- Adjunct Professors Dilday, Johnston, Rutger
- Associate Professors Counce, Longer, Mauromoustakos, McConnell, Muir, Purcell
- Visiting Associate Professor Moore
- Research Associate Professor Davis
- Assistant Professors Brye, Burgos, Chen, de los Reyes, Savin, Sheng, Slaton, Srivastava
- Adjunct Assistant Professor Aiken
- Research Assistant Professors Anders, Gibbons, Mattice, Tingle, Widick, Wilson

Courses in the department of crop, soil, and environmental sciences provide fundamental and applied studies in two majors: crop management (CPMG) and environmental, soil, and water science (ESWS). Areas studied in the crop management major include plant breeding and genetics, crop physiology, crop production and management, weed science, seed production technology, and soil fertility. Areas studied within the environmental, soil, and water science major include pesticide residues, soil chemistry, soil genesis and classification, soil microbiology, soil physics, environmental science and water science. Supporting education in the biological and physical sciences provides the basis for courses in crop management and environmental, soil, and water sciences.

Employment opportunities and post-graduate studies are numerous for the graduate in crop management or environmental, soil, and water science. Crop management graduates find employment in public agencies, which provide support services for agriculture (e.g., Extension Service, State Plant Board, Natural Resources Conservation Service), as consultants serving production agriculture, in the fertilizer and lime industries, and in agricultural research programs. Environmental, soil, and water science graduates find jobs with the

state and federal government (e.g., Environmental Protection Agency, Department of Pollution Control and Ecology, Natural Resources Conservation Service, and health departments), cities (water and wastewater facilities), and a wide variety of private consulting firms. Many graduates continue on to graduate school in a variety of disciplines.

**Requirements for a B.S.A. degree with a major in crop management.** (See page 41 for University Core and page 68 for B.S.A. requirements)

35 hours of **University Core requirements** to include

CHEM 1103/1101L and  
CHEM 1123/1121L  
AGEC 1103

**University Advanced Composition Requirement:** ENGL 2003. If exempt, ENGL 3053 is required.

**College Requirements:** COMM 1313 and Communication Elective CSES 3023  
Electives: 24 hours

**Departmental Requirements:** 56 hours  
CSES/ENSC 1012 - Orientation to Crop, Soil and Environmental Sciences  
AGME 2903 or CSCE 1003 - Applications of Microcomputers or Survey of Computer Concepts  
BOTY 1613/1611L - Plant Biology/Lab  
BOTY 4304 - Plant Physiology  
CHEM 2613/2611L - Organic Physiological Chemistry/Lab  
ENTO 3013 - Intro to Entomology  
PLPA 3004 - Principles of Plant Pathology  
CSES 2103/2101L - Crop Science/Lab  
CSES 2203/2201L - Soil Science/Lab  
CSES4013 - Advanced Crop Science  
CSES4133/4130L - Weed ID, Morphology and Ecology/Lab  
CSES 4143/4140L - Principles of Weed Control/Lab  
CSES4224/4220L - Soil Fertility/Lab  
Select 8 hours from the courses listed below (at least 2 courses from Group A)

**Group A:**

CSES 3113 - Forage Management  
CSES 3312 - Cotton Production  
CSES 3322 - Soybean Production  
CSES 3332 - Rice Production  
CSES 3342 - Cereal Grain Production  
CSES 462V - Internship (1-6 hours)  
CSES 400V - (Special Problems - 1 hr)  
HORT 2303 - Intro to Turfgrass Mgmt.

**Group B:**

CSES 3214/3210D - Intermediate Soil Science/Disc  
CSES 4103/4100L - Plant Breeding/Lab

CSES 4234/4230L - Plant Anatomy/Lab  
CSES 4253/4250L - Soil Classification and Genesis/Lab  
CSES 355V - Judging Team Activity (1-2 hrs)  
CSES 400V - Special Problems (1-6 hrs)

**Requirements for a B.S.A. degree with a major in environmental, soil, and water science:** (See page 41 for University Core and page 68 for B.S.A. requirements)

35 hours of **University Core requirements** to include:

CHEM 1103/1101L and  
CHEM 1123/1121L

**University Advanced Composition Requirement:** ENGL 2003 - exemption possible

**College Requirements:** Comm 1313 and 3 hours communication elective selected from the following:

AGED 3142/3141L  
CSES 3023  
or any course from ENGL, JOUR,  
or COMM  
Electives: 28-31 hours

**Departmental Requirements:** 55-56 hrs  
CSES/ENSC 1012 - Orientation to Crop, Soil and Environmental Sciences  
CSES 2013 - Pest Management  
MATH 2043 - Survey of Calculus  
BOTY 1613/1611L or  
CSES 1203- Plant Biology/Lab or Intro Plant Sciences  
CHEM 2613/2611L - Organic Physiological Chem/Lab  
MBIO 2013/2011L - General Microbiology/Lab  
AGST 4023 or STAT 2023 or  
STAT 2303- Princ of Experimentation or Biostatistics or Principles of Statistics  
PHYS 2013/2011L - College Physics I/ Lab  
Select 9 hours from Environmental Sciences:

ENSC 1003 - Environmental Science (required)  
AGEC 3413 - Principles of Environmental Economics  
AGEC 4413 - Econ of Environmental Management  
BIOL 3863/3861L - General Ecology  
BIOL 4503 - Ecosystem Ecology  
BIOL 485V - Field Ecology  
ENSC 3253 - Septic Systems  
ENSC 400V - Special Problems  
GEOL 1113/1111L - General Geology/Lab  
GEOG 3003 - Conservation of Natural Resources

GEOG 4543 - Geographic Info. Sys.  
 Select 11 hours from Soil Science:  
 CSES 2203/2201L - Soil Science/Lab (required)  
 CSES 3214/3210D - Intermediate Soil Science/Disc  
 CSES 355V - Judging Team Activity (1-2 hours)  
 CSES 4224/4220L - Soil Fertility/Lab  
 CSES 4253/4250L - Soil Classification and Genesis/Lab  
 CSES/ENSC 4263 - Env. Soil Sci.  
 Select 9 hours from Water Science:  
 ENSC 4023/4020L - Water Quality/Lab (required)  
 ENSC 3263/3260L - Environmental Soil and Water Conservation/Lab  
 AGME 4973 - Irrigation  
 AGME 4983 - Agricultural Meteorology  
 GEOL 4033 - Hydrogeology  
 GEOL 4043 - Water Resource Issues  
 GEOG 4353 - Elements of Weather  
 ZOOL 4814 - Limnology  
 Environmental science courses transferred from Northwest Arkansas Community College, Westark Community College and the University of Arkansas at Little Rock can be used to fulfill selected ESWS requirements. Consult an academic adviser to verify transfer applicability.

**Requirements for a minor in crop management (CPMG):** 18 semester hours of 2000-level courses or above including CSES 2103 and CSES 2203 and an additional 12 hours from the courses listed below, including at least two courses from Group A.

**Group A:** CSES 3113, CSES 3312, CSES 3322, CSES 3332, CSES 3342;

**Group B:** CSES 2003, CSES 3214, CSES 4013, CSES 4103, CSES 4133, CSES 4143, CSES 4224 and CSES 4234.

A student planning to minor in crop management must notify the department of crop, soil, and environmental sciences and consult an adviser.

**Requirements for a minor in environmental, soil, and water science (ESWS):** 18 semester hours of courses to be selected from the following three categories

**Category 1:** Environmental science (6 hours) to include ENSC 1003 and 3 additional hours from AGECE 3413, AGECE 4413, BIOL 3863/3861L, BIOL 4503, BIOL 485V, ENSC 3253, ENSC 400V, GEOL 1113/1111L, GEOG 3003, GEOG 4543.

**Category 2:** Soil science (6-7 hours) to include CSES 2203 and 3 to 4 additional hours from CSES 3214, CSES 4224, CSES 4253, CSES/ENSC 4263.

**Category 3:** Water science (6 hours) to include ENSC 4023 and 3 additional hours from AGME 4973, AGME 4983, ENSC 3263, GEOL 4033, GEOL 4043, GEOG 4353, ZOOL 4814.

A student planning to minor in environmental, soil, and water science should notify the department of crop, soil, and water sciences and consult with an academic adviser.

**Requirements for a minor in pest management (PMGT):** See page 79 for requirements.

**Requirements for a minor in global agricultural, food and life sciences (AFLS):** Students must successfully complete 18 hours of regular courses, including 15 hours of required courses and 3 hours of elective courses as described on page 71. No other program component is required for this minor.

SEE PAGE 283 FOR CROP, SOIL AND ENVIRONMENTAL SCIENCE (CSES) COURSES AND SEE PAGE 294 FOR ENVIRONMENTAL SCIENCE (ENSC) COURSES .

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### ENTOMOLOGY (ENTO)

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Frederick M. Stephen  
 Interim Head of the Department  
 320 Agriculture Building  
 575-2451

- University Professors Meisch, Stephen
- University Professor Emeritus Musick, Phillips, Yearian
- Professors Johnson (D.T.), Kring, Luttrell, McLeod, Steelman, Steinkraus, Young
- Professors Emeriti Lancaster, Mueller, Tugwell, Warren
- Adjunct Professors Burleigh, Johnson (D.R.), Katayama, Marsh, Teague, Thompson
- Assistant Professors Goggin, Szalanski
- Adjunct Assistant Professor Lorenz

Entomology is the branch of science concerned with the study of insects and related organisms. It involves studies of their biology, structure, identification, economic significance, and population management. The major emphasis of the curriculum is an integrated approach to insect-pest management leading to ecologically and economically sound solutions to complex insect pest problems.

Entomology is a graduate degree. Undergraduate students interested in entomology should pursue a B.S.A. in pest management. See page 68 for degree requirements. A minor in entomology is also available.

**Requirements for a minor in entomology (ENTO):** A minimum of 19 to 20 semes-

ter hours in entomology to include ENTO 3013, ENTO 4024 and ENTO 4123. Select three additional courses from ENTO 4013, 4033, 4043, 4053 and 4133.

**Requirements for a minor in global agricultural, food and life sciences (AFLS):** Students must successfully complete 18 hours of regular courses, including 15 hours of required courses and 3 hours of elective courses as described on page 71. No other program component is required for this minor.

SEE PAGE 294 FOR ENTOMOLOGY (ENTO) COURSES.

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### ENVIRONMENTAL, SOIL, AND WATER SCIENCE (ENSC)

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Department of Crop, Soil,  
 and Environmental Sciences  
 J.L. Barrentine  
 Head of the Department  
 115 Plant Science Building  
 575-2354

David M. Miller  
 Program Coordinator  
 106 Agriculture Building  
 575-2354

Students interested in a B.S.A. degree in environmental, soil, and water science will find the requirements listed in the department of crop, soil, and environmental sciences section.

SEE PAGE 294 FOR ENVIRONMENTAL, SOIL, AND WATER SCIENCE (ENSC) COURSES.

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### FOOD SCIENCE (FDSC)

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R. Buescher  
 Interim Head of the Department  
 Food Science Building  
 575-4605

- Distinguished Professor Morris
- University Professor Emertius Kattan
- Professors Buescher, Crandall, Hettiarachchy, Howard, Johnson, Proctor, Siebenmorgen
- Professors Emeriti Davis, Gonzales, Sistrunk, Snyder
- Associate Professor Meullenet
- Adjunct Associate Professors Brady, Freeman, Li, Prior
- Assistant Professor Wang
- Research Assistant Professors Howell, Yang
- Adjunct Assistant Professor Lehigh

Food science applies principles of chemistry, microbiology, biology, processing management and nutrition to convert agricultural commodities into new, safe, nutritious and convenient foods. A major in Food Science prepares students for a wide variety of interesting and challenging career opportunities with food companies and governmental agencies.

Students may choose one of two areas of concentration for their degree program: Food Science (FDSC) or Food Science and Industry (FDSI). The Food Science concentration at the University of Arkansas is one of only 45 programs in the United States and the only one in Arkansas that provides a curriculum that is approved by the Institute of Food Technologists (IFT).

The Food Science concentration provides students with a strong background in the basic sciences and in advanced Food Science, which prepares them for graduate studies and careers in processing, research and development, quality control and assurance, value-added product development, sensory analysis, and food control and assurance, value-added product development, sensory analysis, and food safety.

The Food Science and Industry concentration provides students with an integrated background in food science and agribusiness and business. Students in the Food Science and Industry concentration can readily complete a minor in agribusiness or business.

Ample elective hours exist in both concentrations to allow the selection of a minor in the Bumpers, Fulbright or Walton colleges.

**Requirements for a B.S.A. degree with a major in food science** (See page 41 for University Core and page 68 for B.S.A. requirements)

35 hours of **University Core requirements** to include:

BIOL 1543/1541L  
CHEM 1103/1101L  
ECON 2143 or AGECE 1103 and  
AGECE 2103 for Food Science  
and Industry

**University Advanced Composition Requirement:** ENGL 2003 - exemption possible

**College Requirements:** COMM 1313 and 3 hours communication selected from  
AGED 3142/3141L  
ENGL 3053 for Food  
Science Concentration  
Electives: 18 -19 hours

**Departmental Requirements:** 72-73 hours to include:

MBO 2013/2011L  
CHEM 1123/1121L and

CHEM 2613/2611L  
AGED 1011 - Freshman Orientation  
FDSC 1011 - Food Science Orientation  
FDSC 3103 - Principles of Food  
Processing  
FDSC 4713 - Food Product and Process  
Development

**Requirements for Food Science  
Concentration (FDSC):**

CHEM 3813 - Intro to Biochemistry  
MATH 1213 - Trigonometry  
MATH 2554 - Calculus I  
MATH 2564 - Calculus II  
PHYS 2013/2011L - College Physics I  
ISYS 2013 or STAT 2303  
or AGST 4023 - Statistics  
HESC 3204 - Nutrition/Health Prof  
and Ed  
FDSC 4114 - Food Analysis  
FDSC 4124 - Food Microbiology  
FDSC 4304/4300L - Food Chemistry/Lab  
FDSC 4754 - Prin of Processing  
Agricultural Products

**Requirements for Food Science and  
Industry Concentration (FDSI):**

MATH 2043 - Survey of Calculus  
MATH 2053 - Finite Math  
FDSC 1103 - Intro to Food Science  
FDSC 2503 - Food Safety and  
Sanitation  
FDSC 3202 - Intro to Food Law  
FDSC 4203 - Quality Evaluation &  
Control  
FDSC 431V (3) - Internship  
FDSC 4413 - Sensory Evaluation of  
Food  
ACCT 2013 - Intro to Acct Info I  
ISYS 1121L - Intro to Computer Info  
Sys  
ISYS 2013 - Business Statistics  
MGMT 3563 - Mgmt/Organizational  
Behavior or AGECE 4313 - Ag  
Business Mgmt  
MKTT 3433 - Prin of Marketing or  
AGECE 3303 - Food & Ag Marketing  
and select 6 hours from:  
ACCT 2023 - Intro to Acct Info II  
MGMT 3743 - Human Resource Mgmt  
AGECE 2303 - Intro to Agribusiness  
TLOG 3613 - Business Logistics  
AGECE 4143 - Agricultural Finance  
or any 3000-4000 WCOB course

**Requirements for a minor in food  
science (FDSC):** 18 hours to include FDSC  
3103, 4124, 4304 and 7 hours from FDSC  
2503, 3202, 4032, 4114, 4203 or HESC  
1213. A student planning to minor in food  
science must consult a department of food  
science adviser.

**Requirements for a minor in global  
agricultural, food and life sciences (AFLS):**

Students must successfully complete 18 hours of regular courses, including 15 hours of required courses and 3 hours of elective courses as described on page 71. No other program component is required for this minor.

SEE PAGE 296 FOR FOOD SCIENCE (FDSC) COURSES

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## HORTICULTURE (HORT)

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David L. Hensley  
Head of the Department  
316 Plant Sciences Building  
575-2603

- Distinguished Professor Emeritus Moore
- University Professor Emeritus Rom (R.)
- Professors Klingaman, Morelock, Murphy, Clark
- Professors Emeriti Bradley, Einert, Huang, McFerran, Martin
- Associate Professors Rom (C.), Evans
- Associate Professors Emeriti King, Wheeler
- Research Associate Professors Robbins, Striegler
- Assistant Professors, Andersen, Cole, Karcher, Lindstrom, Richardson, Srivastava
- Assistant Professor Emeritus McDaniel

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The department of horticulture offers two major degree plans: horticulture (HORT) and turf and landscape horticulture (TLHT).

Horticulture involves production, management, marketing, and use of ornamental crops (shrubs, trees, flowers and turf) and edible crops (vegetables and fruits) for the economic, aesthetic and nutritional well being of society. The horticulture major provides education in basic and applied sciences, arts and humanities, communication and leadership, business and economics, to provide an understanding of the underlying principles in plant growth and development, development and use of new technologies, and the actual operation of a horticultural enterprise. An internship in the industry to gain practical, hands-on experience is required. Job opportunities for horticulturists include horticulture crop production and management, horticulture merchandising and business, consulting, inspection, research, teaching, communications, allied industries serving horticultural producers, and developing private business. Advanced study may be required for some careers. Students pursuing the horticulture degree may choose to concentrate studies in one of three areas:

1. Horticulture Management and Production (HMAP)
2. Horticulture Science (HSCI) or
3. Horticulture Merchandising (HMER).

The TLHT major blends broad training in turf and ornamental horticulture with a strong basis in science. This major also requires an internship in the industry to gain practical, hands-on experience. Students interested in careers related to golf course or sports turf management, or to the diverse landscaping industries have two concentration options:

- A) Turf Management (TURF) or
- B) Landscape Horticulture (LHRT).

Turf management students will be exposed to the many aspects of the turfgrass industry and receive specific training in horticulture, environmental sciences, pest management, business and communications. Landscape horticulture students will receive instruction in selection, care and use of plant materials as well as the skills of management for the residential, commercial or public landscapes.

Job opportunities for turf management graduates include golf course superintendent, sports field manager, turfgrass service companies, seed or sod production, green industry journalism, research, teaching or private consulting. Landscape horticulture graduates will be prepared for careers in the landscape management industry, landscape nurseries, landscape architectural firms, private and public gardens, and public agencies such as parks and recreation.

**Requirements for a B.S.A. degree with a major in horticulture** (See page 41 for University Core and page 68 for B.S.A. requirements)

35 hours of University Core, requirements to include:

BOTY 1613/1611L

CHEM 1074/1071L (except HSCI concentration – CHEM 1103/1101L)

3 hours from ECON 2143, 2013, 2023, or AGECE 1103, 2103

#### University Advanced Composition

**Requirement:** ENGL 2003 - exemption possible

**College Requirements:** COMM 1313 and 3 hours Communication Elective. See adviser for suggested list of courses.

Electives: 9-20 hours

#### Departmental Requirements: 53-63 hrs

AFLS 1011, CSES 2203/2201L, BOTY 4304/4300L

Select 3 hours from:

AGED 3142/3141, AGED 4003, COMM 2323, COMM 2351, COMM 3303 or COMM 3703

Select 3-4 hours from:

PHYS 1023/1021L, PHYS 2013/2011L, PHYS 2054 or 1044, BIOL 3323/3321L or ANSC 3123

(Note: students must take accompanying lab to courses)

Select 3 hours of environmental science, earth science, or geology: See adviser for suggested list of courses.

Select 3 hours from:

AGEC or BADM:

See adviser for suggested list of courses.

Select 3 hours from

CSES 2003, ENTO 3013 or PLPA 3004

14 hours of horticulture courses to include:

HORT 2003 – Principles of Horticulture

HORT 4403 – Plant Propagation

HORT 462V, 463V, 464V or 465V –

Internship (3 hrs)

HORT 3901 – Horticultural Career

Development

Select 3 hours from:

HORT 3103 - Woody Landscape Plants or

HORT 3113 - Herbaceous and Indoor Plant Materials

**Additional Requirements for Concentration A:** Horticulture Management and Production (HORT)

CHEM 2613/2611L

Select 3 hours from TURF and Landscape:

HORT 2303/2300L

HORT 4603/4600L or HORT 4043

Select 3 hours from Edible Crops:

HORT 3303/3300L,

HORT 4103/4100L

Select 6 hours from Plant Materials/Floriculture/Nursery/

Greenhouse Crops:

HORT 3103, HORT 3133, HORT 4503,

HORT 4703, or HORT 4803

Select 3 hours from Pest Management:

CSES 2003, ENTO 3013, or PLPA 3004

#### Additional Requirements

**for Concentration B:** Horticulture Science (HSCI)

CHEM 1123/1121L

CHEM 2613/2611L

MATH 2043 or MATH 2554

Select 3-4 hours from:

BIOL 3323/3321L

ANSC 3123

PHYS 2013/2011L

PHYS 2054

(a genetics and physics class are required in the HSCI concentration)

9 hours of HORT classes 3000 level or above

**Additional Requirements for Concentration C:** Horticulture Merchandising (HMER)

Select 12 hours from horticulture management and production:

HORT 2303, HORT 3113, HORT 3303, HORT 3403, HORT 4033, HORT 4043, HORT 4103, HORT 4503, HORT 4703 or HORT 4803

Select 3-4 hours from ANSC 3123 or CSES 2003, ENTO 3013, PLPA 3004, AGME 2153, AGME 3102/3101L, AGME 4973, AGME 4983 and Select 3-4 additional hours from the preceding areas or from BOTY 4104, CHEM 2613, PHYS 2013/2011L, PHYS 2053/2051L, BIOL 3323/3321L or any HORT course

Select 6 hours of business courses from:

AGEC 2303, AGECE 3403,

AGECE 3303, AGECE 3413,

MGMT 3563,

FINN 3043, FINN 3623,

BLAW 2013,

ACCT 2013,

MKTT 3433, MKTT 3533,

MKTT 4033, MKTT 4533,

MKTT 4933, MKTT 4943,

JOUR 3723,

ISYS 2232, ISYS 3603,

TLOG 3613 or TLOG 3623

Select 12 hours from AGECE, ACCT,

BLAW, ECON, FINN, ISYS, MGMT or MKTT

Students are encouraged to pursue an agricultural business or business minor.

**Requirements for a B.S.A. degree with a major in turf and landscape horticulture.** (See page 41 for University Core and page 68 for B.S.A. requirements)

35 hours of University Core requirements to include:

BOTY 1613/1611L

CHEM 1074/1071L

3 hours from:

AGECE 1103, 2103,

**ECON 2013, 2023, 2143**

#### University Advanced Composition

**Requirement:** ENGL 2003 - exemption possible

**College Requirements:** COMM 1313 and 3 hours communication elective selected: See adviser for suggested list of courses

Electives: 20-25 hours

**Departmental Requirements:** 60-61 hrs AGED 1011

CHEM 2613/2611L

CSES 2203/2201L

BOTY 4304/4300L

Select 3-4 hours from:

PHYS 1023/1021L, PHYS 2013/2011L,

PHYS 2054, PHYS 1044,

BIOL 3323/3321L or

ANSC 3123

**(Note: students must take accompanying lab to courses)**

Select 3 hours from AGEC or BADM:  
See adviser for suggested list of courses

10 hours of Horticulture  
HORT 2003 – Principles of Horticulture  
HORT 3103 – Woody Landscape Plants  
OR HORT 3113 – Herbaceous and Indoor Plants  
HORT 3901 – Horticulture Career Development  
HORT 462V or 464V – Internship (3 hrs)

**Additional Requirements for Concentration A: Turf Management (TLHT)**

21 hours from Turf Management and Soils to include:  
HORT 2303/2300L – Intro to Turfgrass  
HORT 3403/3400L – Turfgrass Management  
HORT 4033/4030L – Landscape Installation  
HORT 4043 – Landscape Management  
HORT 4903/4900L – Golf and Sports Turf  
CSES 4224/4220L – Soil Fertility  
PLPA 3004/3000L – Plant Pathology  
AGME 3102/3101L – Turf Equipment  
OR AGME 4973/4970L – Irrigation

**Additional Requirements for Concentration B: Landscape Horticulture (LHRT)**

HORT 2303/2300L – Intro to Turfgrasses  
HORT 4033/4030L – Landscape Installation  
HORT 4043 – Landscape Management  
HORT 4603 – Basic Landscaping  
HORT 3103/3110L – Woody Plants  
HORT 3133/3110L – Advanced Woody Plants  
OR HORT 3113/3110L – Herbaceous Plants  
AGME 2153 – Surveying  
OR AGME 3102/3101L – Turf and Landscape Equipment  
AGME 4973/4970L – Irrigation  
Select 6 hours of Pest Management:  
CSES 2003/2000L  
ENTO 3013/3010L  
OR PLPA 3004/3000L

**Requirements for a minor in horticultural production (HORT):** 18 hours to include the following:

HORT 2003/2000L, HORT 4403.  
Select 9 hours from: HORT 2303,  
HORT 3203, HORT 3303, HORT 4103,  
HORT 4503,  
OR HORT 4703, HORT 401V.  
Select 3 hours from  
HORT 3103,

HORT 3113  
OR HORT 3133

**Requirements for a minor in landscape design and urban horticulture (LHRT):**

18 hours to include HORT 2003,  
HORT 3103 or HORT 3113,  
HORT 4043, HORT 4603  
OR LARC Studio Course  
Select 6 additional hours from:  
HORT 2303, HORT 3103,  
HORT 3113, HORT 3403,  
HORT 4033, HORT 400V  
(MAXIMUM 3 HRS),  
HORT 4703, HORT 4503  
OR HORT 4403 or LARC 3734

**Requirements for a minor in turf management (TURF):** 19 hours to include the following:

CSES 2203/2201L.  
Select 6 hours from HORT 2303,  
HORT 3403, 4033 or HORT 4903;  
6 hours from ENTO 400V or HORT 3103 or HORT 4043.  
Select 3 hours from AGME 4973/4970L,  
AGME 3102/3101L

**Requirements for a minor in global agricultural, food and life sciences (AFLS):**

Students must successfully complete 18 hours of regular courses, including 15 hours of required courses and 3 hours of elective courses as described on page 71. No other program component is required for this minor.

SEE PAGE 306 FOR HORTICULTURE (HORT) COURSES.

**PEST MANAGEMENT (PMGT)**

Interdepartmental Major  
Gerald Musick, Program Coordinator  
321 Agriculture Building  
575-3154

- University Professors Kim, Meisch, Musick, Oliver, Riggs, Stephen, Talbert, Yearian
- Professors Barrentine, Correll, Gergerich, Johnson (D.T.), Kirkpatrick, Kring, Lee, Lim, Luttrell, McLeod, Rothrock, Rupe, Steinkraus, TeBeest, Tugwell, Young
- Associate Professors Fenn, Milus
- Assistant Professor Burgos
- Extension Specialist II Cartwright, Coker, Lorenz
- Extension Specialist III Spradley
- Extension Specialist IV Boyd, Johnson
- Extension Specialist V Baldwin

The pest management major is an interdisciplinary program of study in the Departments of Crop, Soil, and Environmental Sciences, Entomology and Plant Pathology

in the Bumpers College. The major is coordinated by an interdepartmental steering committee. Although students may be advised by faculty in any of the three departments referenced above, they should contact the program coordinator to be assigned an appropriate adviser. The program is designed for those students seeking employment with various agriculturally related industries such as chemical, seed or biotechnology companies, state and federal research institutions, extension and regulatory agencies, private and public consulting firms, farmer's cooperatives, nurseries, home and garden centers, green house production firms and corporate farms. This degree program prepares students to work in an increasingly technical, rapidly growing segment of agriculture.

Effective management of pest problems requires a broad base of knowledge in the pest disciplines (entomology, plant pathology and weed science), in biological/physical sciences and crop management as well as practical field experience. This knowledge and experience is provided in the undergraduate pest management major. A broad range of electives allows students to personalize their program to fit specific interests. The program is also designed to prepare students who wish to pursue graduate studies (master's and doctoral degrees). Additional information is available on the pest management web site.

**Requirements for a B.S.A. degree with a major in pest management.** (See page 41 for University Core and page 68 for B.S.A. requirements)

35 hours of **University Core requirements** to include:  
BIOL 1543/1541L  
CHEM 1103/1101L

**University Advanced Composition Requirement:** ENGL 2003 - exemption possible

**College Requirements:** COMM 1313 and 3 hours Communication elective selected from the following:

AGED 3142/3141L  
CSES 3023  
ENGL 3053  
COMM 2351  
COMM 2323  
MGMT 4133  
AGED 4003  
COMM 2303

Electives: 21-26 hours

**Departmental Requirements:** 58-60 hrs  
AGST 4023  
CHEM 1123/1121L and  
CHEM 2613/2611L  
BIOL 3323/3321L or

ANSC/POSC 3123

Select 12 hours from:

BOTY 1613/1611L or

CSES/HORT 1203 or ANSC 1003

MBIO 2013/2011L

PHYS 2013/2011L

BOTY 4304

CSES 4013

And the following courses in pest management:

CSES 2103 - Crop Science or

HORT 2003 - Principles of Hort.

CSES/ENTO/PLPA 4093 - Issues in Pest Management

CSES/ENTO/PLPA 462V (3 hrs) -

Internship in Pest Management

CSES 2203/2201L - Soil Science/Lab

CSES 2003 - Intro to Weed Science

ENTO 3013 - Intro to Entomology

PLPA 3004 - Prin of Plant Path

Select 9-10 hours from the following, with at least one course from each area (CSES, ENTO and PLPA)

CSES 4133 - Weed ID, Morphology and Ecology

CSES 4143 - Prin of Weed Control

ENTO 4024 - Insect Diversity

and Taxonomy

ENTO 4053 - Insect Ecology

ENTO 4123 - Insect Pest Mgmt I

ENTO 4133 - Advanced Applied Entomology

PLPA 4103 - Plant Disease Control

**Requirements for a minor in pest management (PMGT):** 20-21 hours to include CSES 2003, ENTO 3013 and PLPA 3004. In addition, students must select one course from each area: CSES 4143 or CSES 4133; ENTO 4024, ENTO 4123 or 4133; and PLPA 4103. Students planning to minor in pest management must declare their intention to the Program Coordinator.

### PLANT PATHOLOGY (PLPA)

Sung M. Lim

Head of the Department

217 Plant Sciences Building

575-2446

- University Professors Kim, Riggs
- University Professor Emeritus Scott
- Professors Correll, Gergerich, Kirkpatrick, Lee, Lim, Robbins, Rothrock, Rupe TeBeest
- Professors Emeriti Dale, Fulton, Jones
- Associate Professors Fenn, Milus
- Assistant Professors Korh, Yang
- Research Associate Professor Cartwright
- Adjunct Assistant Professor Tai, Jid

Plant pathology as a discipline seeks to understand the interrelationships of plants with

the abiotic and biotic agents that affect plant health and productivity with the goal of minimizing the impacts of plant diseases on agricultural production and human health. Scientific training within the department focuses on the nature, cause and management of plant diseases caused by fungi, bacteria, viruses and nematodes.

Plant pathology is a graduate degree program. Undergraduate students interested in plant pathology should pursue a B.S.A. degree in pest management. See page 68 for degree requirements. A minor in plant pathology is also available to undergraduate students.

**Requirements for a minor in plant pathology (PLPA):** 19 hours to include PLPA 3004, PLPA 400V and PLPA 4103. The remaining 9 hours to be selected from the following: BIOL 4353, BOTY 4304, BOTY 4424, and MBIO 4233, MBIO 4753. A student planning to minor in plant pathology should notify the department of plant pathology and consult an adviser.

SEE PAGE 330 FOR PLANT PATHOLOGY (PLPA) COURSES

### POULTRY SCIENCE (POSC)

Walter G. Bottje

Interim Head of the Department

0114 Poultry Center

575-3699

- Distinguished Professor Emeritus Forsythe
- University Professor Waldroup (P.W.)
- University Professors Emeriti Gyles, Nelson
- Professors Anthony, Bottje, Chapman, Coon, Denton, Hargis, Kuenzel, Slavik, Wideman
- Professors Emeriti Andrews, Beasley, Harris
- Research Professors Donoghue (A.), Huff (W.), Jones, Rath
- Adjunct Professors Bristol, Keck, Plue, Porter, Rhodes, Steelman
- Associate Professors Erf, Goodwin, Li, Parcels
- Research Associate Professors Clark, Marcy, Watkins
- Adjunct Associate Professor Story
- Assistant Professors Emmert, Donoghue (D.) Okimoto, Owens
- Research Assistant Professors Balog, Bramwell, Huff (G.), Newberry
- Adjunct Assistant Professors Breeding, Cook, Davis, Fussell, Meullenet
- Adjunct Research Assistant Professor Pumford

A major in poultry science is designed to provide the scientific and technical education

to prepare students for positions of leadership and responsibility in the expanding fields of production, processing, marketing and distribution of meat, eggs and related poultry products. The curriculum also prepares students for career opportunities in specialized areas of nutrition, breeding and genetics, physiology, management and food science.

Ample elective hours allow students to select a minor and thus personalize their degree. Elective hours can also be used to emphasize areas of business, production, processing or science. Pre-veterinary medicine requirements may be fulfilled while meeting degree requirements.

Curricula are designed to permit the student to obtain the necessary foundation to pursue graduate study for the master's and doctoral degrees. Advanced degrees are offered but not limited to the areas of nutrition, genetics, physiology, product technology and poultry health.

**Requirements for a B.S.A. with a major in poultry science.** (See page 41 for University Core and page 68 for B.S.A. requirements)

35 hours of **University Core Requirements** to include:

BIOL 1543/1541L

CHEM 1103/1101L

**University Advanced Composition Requirement:** ENGL 2003 - exemption possible

**College Requirements:** COMM 1313 and 3 hours Communication electives chosen from any of the following:

AGED 3142/3141L

COMM 2303, COMM 2323,

COMM 3303, COMM 3703,

COMM 4323 or COMM 4343

ENGL 1213, ENGL 2013, ENGL 2023,

ENGL 3033 or ENGL 3053

JOUR 1033

**Departmental Requirements:** 48 hours to include

CHEM1123/1121L

CHEM 2613/2611L

STAT 2303

MBIO 2013/2011L

and the following poultry science courses:

POSC 1002L - Intro to Poultry Careers Lab

POSC 3123 - Principles of Genetics

POSC 2353 - Broiler/Turkey Prod.

POSC 3223 - Poultry Diseases

POSC 2363 - Breeder/Layer Mgmt.

POSC 4213 - Integrated Poultry Mgmt.

POSC 2554 - Poultry Biology

POSC 4314 - Egg and Meat Tech.

POSC 3032 - Animal Physiology I

POSC 4343 - Poultry Nutrition

POSC 3042 - Animal Physiology II

POSC 4901 - Undergraduate Seminar

**Requirements for a minor in poultry science (POSC):** 19 semester hours in courses above the freshman level to include POSC 2353 or POSC 2363 and POSC 3223, POSC 4314, POSC 4213, POSC 4343 and 3 hours POSC elective. A student planning to minor in poultry science should consult a departmental adviser.

**Requirements for a minor in global agricultural, food and life sciences (AFLS):** Students must successfully complete 18 hours of regular courses, including 15 hours of required courses and 3 hours of elective courses as described on page 71. No other program component is required for this minor.

SEE PAGE 332 FOR POULTRY SCIENCE (POSC) COURSES

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## SCHOOL OF HUMAN ENVIRONMENTAL SCIENCES (HESC)

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Mary M. Warnock

Interim Director

118 Home Economics Building  
575-4305

- Professors Farmer, Kenney, Martin, McCoy, Voth, Warnock, Whan
  - Professors Emeritae Burton, Carroll, Cotton
  - Associate Professors Bailey, Gentry, Noble, Turner
  - Assistant Professors Apple, Fitch-Hilgenberg, Gloeckler, Killian, Myres, Webb
  - Assistant Professors Emeritae Cunningham, Noyce, Raymond
  - Instructors Baldwin, Crandall, Loewer, Smith, Takigiku, Young
- 

The School of Human Environmental Sciences at the University of Arkansas prepares students for a wide variety of professional careers in education, industry, business, government and community services. The School is concerned with improving the quality of life for individuals and families as they exist and function in society. Human environmental sciences draws knowledge from its own research, from the physical, biological, and social sciences, and from arts and humanities. It relates this knowledge to an understanding of individuals' and families' needs and goals for food, clothing, shelter, management of resources, and human development and relationships. The School of Human Environmental Sciences has made a substantial contribution to the development of individuals and

families through undergraduate and graduate preparation of human environmental scientists and through research in human nutrition, foods, human development, family sciences, interior design, clothing and textiles.

### Human Environmental Sciences Majors and Minors

Students pursuing the bachelor of science degree in human environmental sciences (B.S.H.E.S.) may choose one of four majors. These programs have been accredited by the Council for Professional Development of the American Association of Family and Consumer Sciences. The majors are as follows:

#### Food, Human Nutrition and Hospitality (FHNH)

##### Concentration A

Dietetics (DIET)

##### Concentration B

General Foods and Nutrition (GFNU)

##### Concentration C

Hospitality and Restaurant Management (HRMN)

#### Apparel Studies (APST)

#### General Human Environmental Sciences (HESC)

#### Human Development, Family Sciences and Rural Sociology (HDFS)

##### Concentration A

Child Development (CDEV)

##### Concentration B

Lifespan (LSPN)

Students pursuing the bachelor of interior design (B.I.D.) degree must major in interior design (IDES). This program is accredited by the Foundation for Interior Design Education Research (FIDER).

Three minors are offered in human environmental sciences: human development and family sciences; human nutrition; and global agricultural, food and life sciences (AFLS). Specific course requirements for the minors are listed at the end of the curriculum sections. Students may also minor in journalism as well as other select minors in the J. William Fulbright College of Arts and Sciences or the Sam M. Walton College of Business.

For information concerning graduate programs in human environmental sciences, consult the *Graduate School Catalog*.

#### Requirements for a bachelor of science in human environmental sciences (B.S.H.E.S.)

HOURS

1. A total of 124 semester hours with a 2.00 cumulative GPA.
2. A minimum of 39 hours of

courses 3000 level or above

3. University Core Requirements 35  
See page 41 for requirements.

Check requirements for each major.  
Some require specific core courses.

**NOTE:** ENGL 2003 will not count as part of the total number of hours for a degree in the food, human nutrition and hospitality curriculum.

4. Other University Requirements 3  
Advanced Composition  
Requirement (see page 43)

If exempt from advanced composition, 3 hours of ENGL, COMM, JOUR or Foreign Language are required. See specific major requirements

5. College Requirements 3  
COMM 1313

6. Electives 5-19  
Electives can be used to develop a minor

7. School Requirements 64-78  
See specific majors and concentrations

#### Food, Human Nutrition and Hospitality (FHNH)

The curriculum in food, human nutrition and hospitality allows students to prepare for a career in a specialized area of foods and nutrition by completing a common set of basic courses and one of the concentrations: A: dietetics (DIET); B: general foods and nutrition (GFNU) and C: hospitality and restaurant management (HRMN). Interest and aptitude for the biological and physical sciences that support nutrition science are needed to complete concentrations A and B successfully. Concentration C is the best choice for those students who have an interest in management and who enjoy working with people.

**Concentration A - Dietetics (DIET):** This concentration is for the student whose goal is to become a registered dietitian (RD). Courses required include those necessary as prerequisites to a dietetic internship. An internship is required for eligibility to take the national registration examination and for eligibility for licensure. Students who complete the program with a minimum grade point average of 3.0 may apply for an internship. Upon licensure, students practice as registered dietitians in the health care field or as consulting dietitians in private practice, sports nutrition or in wellness and health maintenance centers. Students with lower GPAs may apply for supervised practice programs leading to the dietetic technician registered (DTR) certification.

**Concentration B - General Foods and Nutrition (GFNU):** Students taking this concentration are encouraged to select an approved minor from the Bumpers, Walton or

Fulbright colleges or plan other combinations of courses to prepare for non-traditional vocations including work in community or government sponsored programs, wellness and health maintenance centers, public relations in the food industry, TV/media outlets for food and nutrition information, and international food or nutritional programs.

**Concentration C - Hospitality and Restaurant Management (HRMN):** Students in the hospitality and restaurant management concentration prepare themselves for managerial positions in the restaurant and hospitality industry. This dynamic curriculum provides students with skills in foods and business, as well as hospitality and restaurant management. Students have the opportunity to manage and operate the Sunset Garden Restaurant on campus. Students obtain hands-on experience by completing 1,000 hours of satisfactory, verifiable work experience in the hospitality and restaurant industry, usually completed during the summer and on part-time jobs during the school year. This noncredit work experience must be completed prior to graduation. A management internship, which allows students to acquire practical management experience and specialized knowledge from supervised work in a hotel, restaurant or other hospitality-related business, is also part of this degree. Students in this program can complete a minor in business.

**Requirements for a B.S.H.E.S. degree with a major in food, human nutrition and hospitality.** (See page 41 for University Core and page 80 for B.S.H.E.S. requirements)

35 hours of **University Core requirements** to include:  
HESC 2413  
PSYC 2003

**Concentration A (DIET) and B (GFNU)** to include:

CHEM1103/1101L  
CHEM 1123/1121L  
MATH 1203 or MATH 1213

**Concentration C (HRMN)** to include either the two chemistry classes listed above or  
CHEM 1074/1071L  
BIOL 1543/1541L

**University Advanced Composition Requirement:** ENGL 2003 - exemption possible

**College Requirement:** COMM 1313  
Electives: 5-19 hours  
(Highly recommended for Concentration B: EXED 3023; for Concentration C: foreign language and HLSC 3633.)

**School Requirements:** 68-81 hours  
PEAC or DEAC - 2 hrs  
HESC 1501 - Orientation to HESC  
HESC 1213 - Nutrition in Health  
HESC 2112/2111L - Foods I/Lab  
HESC 3604 - Food Prep for Hospitality Industry  
HESC 3653 - Food Systems Mgmt  
HESC 4103 - Experimental Foods  
HESC 4303 - Professional Development in HESC

**Requirements for Concentrations A: Dietetics and B: General Foods and Nutrition**

ENGL 3053 or JOUR 3123 or  
AGED 3142/3141L  
MBIO 2013/2011L  
CHEM 2613/2611L and CHEM 3813  
ISYS 1121L  
ZOO 2213/2211L and  
ZOO 2443/2441L or  
BIOL 1543/1541L and  
ANSC 3032 and ANSC 3042  
HESC 3204 - Nutrition for Health Professionals and Educators  
HESC 3213 - Intro to Dietetics and Hospitality  
HESC 4213 - Advanced Nutrition  
HESC 4223 - Nutrition/Life Cycle  
HESC 4243 - Community Nutrition  
HESC 425V (1 hr) - Seminar

**Additional Requirements for Concentration A: Dietetics**

HESC 1201 - Introduction to Diet and Nutrition  
AGST 4023 and MGMT 3563  
HESC 4264/4260L - Medical Nutrition Therapy I/Lab  
HESC 4273 - Medical Nutrition Therapy II  
HESC 4613 - Food Service Purchasing  
HESC 4623 - Selection and Layout of Food Service Equipment  
MGMT 3563 - Mgmt Concepts/Organizational Behavior

**Additional Requirements for Concentration B: General Foods and Nutrition**

HESC 1201 - Introduction to Diet and Nutrition and/or  
HESC 1601 - Introduction to Hospitality

**Requirements for Concentration C: Hospitality and Restaurant Management**

HESC 1601 - Introduction to Hospitality  
BLAW 2013 and AGED 3142/3141L  
ECON 2013 and ECON 2023 or  
AGEC 1103 and AGECE 2103  
MATH 2043 and MATH 2053  
(Math 1203, prerequisite for MATH 2043 and 2053, required for hospitality

and restaurant management students who do not have the required math proficiency.)  
ACCT 2013 and ACCT 2023  
ISYS 1121L and ISYS 2232 and ISYS 2013  
FINN 3043 and MGMT 3563 and MGMT 3743 and MKTT 3433  
FDSC 2503 - Food Safety/Sanitation  
HESC 2120L - Catering for Healthy Lifestyles Lab  
HESC 2123 - Catering for Healthy Lifestyles  
HESC 4613 - Food Service Purchasing  
HESC 4623 - Selection and Layout of Food Service Equipment  
HESC 4693 - Hospitality Internship

**Requirements for a minor in nutrition (General Foods and Nutrition):** 18-19 hrs

HESC 1213, HESC 2112/2111L, HESC 3204 and HESC 4213.  
Select 5-6 hours from HESC 4223, HESC 4243 and HESC 425V  
(1 hour - may be taken twice)

**Apparel Studies (APST)**

The apparel studies program opens the door to careers in the fashion industry. Buyer, product development specialist, fashion coordinator, sales consultant, visual display artist, and quality assurance technician are only a few of the possibilities. Classes in business, retailing, apparel production, science, social science, and the liberal arts give students a basic knowledge about the textile and apparel industries. By selecting from a variety of minors, students can tailor this program to meet their goals. Program strengths include guest speakers who provide insight into today's careers, tours of major fashion centers and internships which provide valuable career experience.

**Requirements for a B.S.H.E.S. degree with a major in apparel studies.** (See page 41 for University Core and page 80 for B.S.H.E.S. requirements)

35 hours of **University Core requirements** to include:

CHEM 1074, 1071L and 4 hours of BIOL, BOTY or ZOO  
(Two semesters of chemistry, CHEM 1103/1101L and CHEM 1123/1121L, may be substituted for CHEM 1074/1071L.)  
PSYC 2003  
ECON 2143  
ANTH 1023 or SOCI 2013  
ARTS 1003

Select 3 hours from  
PHIL 2003, PHIL 2103, PHIL 2203 or  
WLIT 1113 or WLIT 1123

**University Advanced Composition**

**Requirement:** ENGL 2003 - exemption possible

**College Requirement:** COMM 1313

Electives: 15 hours

(Suggested elective minor areas: marketing, journalism, drama, art or art history.)

**School Requirements:** 64 hours

MATH 2053

MKTT 3433

Select 3 hours from ISYS 1121L and ISYS 2232 or AGME 2903 or CSCE 1003  
Select 6 hours of any Foreign Language (not to be used as exemption for ENGL 2003)

And 52 hours of HESC courses:

HESC 1501 - Orientation

HESC 1013 - Intro to Clothing Concepts

HESC 1023 - Intro to Apparel Production

HESC 1053 - Computer Based Methods

HESC 2013 - Quality Assess of Apparel

HESC 2023 - Visual Merchandising

HESC 2053 - Intro to Textile Science

HESC 3003 - Apparel Production

HESC 3013 - Intro Fashion

Merchandising

HESC 3033 - Apparel Merchandising

HESC 4023 - Merchandising Methods

HESC 4043 - History of Apparel

HESC 4053 - Contemporary Apparel

HESC 4063 - Advanced Apparel Production

HESC 4073 - Internship

HESC 4303 - Professional

Development

HESC 1213 - Nutrition in Health

HESC 2413 - Family Relations

**General Human Environmental Sciences (GHES)**

The general human environmental sciences curriculum serves students seeking a background in all of the subject-matter areas of human environmental sciences. The general curriculum prepares students for careers in social services, business and the Cooperative Extension Service. Liberal elective hours allow students to select courses and programs to meet individual needs.

Students may be certified by the Arkansas State Board of Education to teach family and consumer sciences in Arkansas public schools by combining the pre-professional education courses as electives and completing the master of arts in teaching (M.A.T.) degree requirements. (See M.A.T., page 155). At the beginning of the sophomore year, students should

consult with their adviser to schedule the general education and pre-professional education courses.

**Requirements for a B.S.H.E.S. degree with a major in general human environmental sciences.** (See page 41 for University Core and page 80 for B.S.H.E.S. requirements)

35 hours of **University Core Requirements** to include:

CHEM 1074/1071L

(Two semesters of chemistry, CHEM 1103/1101L and CHEM 1123/1121L, may be substituted for CHEM 1074/1071L.)

Select 4 hours from

BIOL, BOTY or ZOOL

PSYC 2003

SOCI 2013 and

Select 3 hours from

AGEC 1103, AGECE 2103 or

ECON 2013, ECON 2023

ARTS 1003

Select 3 hours from

PHIL 2003, PHIL 2103, PHIL 2203 or

WLIT 1113, WLIT 1123

**University Advanced Composition**

**Requirement:** ENGL 2003 - exemption possible

**College Requirement:**

COMM 1313

Electives - 13-15 hours

(Students wishing to qualify for the M.A.T. need six hours of English, World Literature or American Literature and three hours of Western Civilization or World Civilization.)

**School Requirements:** 67-69 hours

ENGL 3053 or JOUR 3123

CHEM 2613/2611L

1-3 hour computer class selected from ISYS 1121L, ISYS 2232,

AGME 2903 or CSCE 1003

PEAC 1621

HLSC 1002

EXED 3023

VOED 4403

And 50 hours of HESC courses:

HESC 1013 - Intro to Clothing

Concepts

HESC 1023 - Intro to Apparel Prod

HESC 1213 - Nutrition in Health

HESC 1403 - Lifespan Development

HESC 1501 - Orientation

HESC 2053 - Intro Textile Science

HESC 2112/2111L - Foods I/Lab

HESC 2123/2120L - Catering/Healthy Lifestyles/Lab

HESC 2413 - Family Relations

HESC 3204 - Nutrition Health Prof & Ed

HESC 3403 - Child Guidance

HESC 3703 - Household Equipment

HESC 3763L Family Resources Mgmt Lab

HESC 3823 - Human Factors in ID

HESC 4043 - History of Apparel

HESC 4453 - Parenting/Family

Dynamics

HESC 4753 - Family as Consumers

**Human Development and Family Sciences (HDFS)**

Students majoring in human development and family sciences prepare for one of the fastest growing employment opportunities in the country. The human services area includes jobs that serve people from conception through the last stages of life. Students develop skills for working with individuals and families in governmental, private, and nonprofit organizations. Two concentrations are offered:

**Concentration A: Child Development (CDEV)**

This concentration is for students who desire in-depth knowledge of children and programs for children from birth to age 12. The focus on children covers issues from the prenatal to early adolescent period in the lifespan. Graduates are working as preschool-teachers, daycare directors, specialists in the field of child life and as child advocates.

**Concentration B: Lifespan (LSPN)**

This area of study covers the care issues faced by families and individuals in contemporary society. The knowledge and skills developed in this program will prepare the student to work in areas such as aging, parent education, financial and consumer counseling, youth services and other human service type careers.

**Requirements for a B.S.H.E.S. degree with a major in human development and family sciences.** (See page 41 for University Core and page 80 for B.S.H.E.S. requirements)

35 hours of **University Core Requirements** to include:

BIOL 1543/1541L

4 hours from ASTR, CHEM, GEOL or PHYS

PSYC 2003

SOCI 2013 or RSOC 2603

HESC 2413

**University Advanced Composition Requirement:** ENGL 2003 - exemption possible

**College Requirement:**

COMM 1313

Electives: 15-16 hours

**School Requirements:** 67-68 hours

3 hours from AGECE 1103, AGECE 2103,

ECON 2013, ECON 2143 or ECON

3053

3 hours from ISYS 1121L and ISYS 2232, CICS 1003, AGME 2903 or ETEC 2001/2002L

HLSC 3633

And 25 hours of HESC courses:

- HESC 1501 - Orientation
- HESC 1213 - Nutrition in Health
- HESC 2433 - Child Development
- HESC 3423 - Adolescent Development
- HESC 3433 - Adult Development
- HESC 4753 - Family as Consumers
- HESC 4303 - Professional Dev in HESC
- HESC 4453 - Parenting/Family Dynamics
- HESC 4483 - Internship

**Additional Requirements for Concentration A:** Child Development

- HESC 2403 - Infant and Toddler Development
- HESC 3403 - Child Guidance
- HESC 4463 - Admn and Evaluation of Child Development Programs
- HESC 4472/4472L - Child Development Practicum/Lab
- CIED 3023 - Survey of Exceptionalities
- CIED 3103 - Children's Literature
- CIED 3113 - Emergent and Developmental Literacy
- SOCI 3633 - Problems of Child Welfare

Select 9 hours from the following:

- HESC 3443 - Families in Crisis
- HESC 3763 L - Family Resource Management
- HESC 4433 - Dynamic Family Interaction
- HESC 4493 - Public Policy Advocacy
- HESC 4223 - Nutrition/ Life Cycle
- CIED 3263 - Language Development for the Educator

Any courses in HDFSRS not listed in this concentration or in the HDFS core can also be included as electives in this section.

**Additional Requirements for Concentration B:** Lifespan

- HESC 1403 - Lifespan Development
- HESC 3443 - Families in Crisis
- HESC 4433 - Dynamic Family Interaction
- HESC 4443 - Gerontology
- HESC 4493 - Public Policy Advocacy
- SOCI 3163 - Death and Dying

Select 3 hours of statistics from PSYC 2013 or SOCI 3303/3301L or ISYS 2013

Select 3 hours research methods from PSYC 3073 or SOCI 3073 or SOCI 3313

Select 9 hours from SOCI 3183, SOCI 3233, SOCI 3633, SOCI 4133, SOCI 4143, CNED 3053, CDIS 4273 or COMM 3433

Any courses in HDFSRS not listed in this concentration or in the HDFS core can also be included as electives in this section.

**Requirements for a minor in human development and family sciences (HDFS):**

18 hours

HESC 1403 and HESC 2413

And 12-13 hours from the following:

- HESC 2402, HESC 2433,
- HESC 3402, HESC 3423,
- HESC 4423, HESC 4753,
- HESC 4443, HESC 4453,
- HESC 4463 or HESC 4472

**Interior Design (IDES)**

Interior design, a FIDER accredited program, combines an excellent foundation of professional courses that are enhanced by classes in human environmental sciences, art, architecture and business. A goal of the program is to foster a sense of personal and professional responsibility. Students are actively involved in national design competitions and domestic and international travel. Field trip opportunities are offered on a regular basis, and students are expected to participate. Graduates are placed in residential, contract, and institutional interior design firms, architectural firms, art galleries, set design and contract and residential sales.

A sophomore portfolio review is an important component of the academic program. The review of studio work will occur in December of the sophomore year. The submitted materials will follow guidelines prepared by the interior design faculty and will include examples of work from Design I, Design II, Studio I, and Introduction to Presentation Media. All full-time interior design faculty will review portfolios. Students will receive a pass or probation. If the portfolio is acceptable (pass), the student may continue, without remediation or additional required work, to junior-level studios. To be removed from probationary status, the student must comply with faculty recommendations that may include repeating a course(s), taking supplemental courses to strengthen a weakness, or submission of re-worked studio projects. Students on probation must resubmit a portfolio at the end of the spring semester following the initial review. In the event that skills are not improved, the student will not be permitted to progress into upper-level studios.

The studio sequence increases in complexity throughout the curriculum. In addition to passing sophomore portfolio review, students must receive a grade of C or better in all interior design courses to proceed in the program. The rigor of the program requires a significant commitment of time and energy. Students can expect to spend a minimum of 3 hours out of class for each hour of studio time to complete

projects. Participation in an annual senior portfolio exhibition and a supervised internship experience are requirements for graduation. The faculty reserve the right to retain student work for accreditation and recruitment purposes.

Transfer students seeking advanced placement must submit a portfolio for faculty review prior to beginning any studio course. Review of portfolio will allow appropriate placement based on demonstrated skills. Students may be required to wait a semester for the appropriate studio sequence. Transfer students placed into the program prior to sophomore portfolio review will be required to participate in the sophomore review process.

A professional advisory board supports the program, and faculty and students participate in professional design association activities. The faculty are well qualified educators and practitioners who foster an attitude of inquiry and learning based on their individual skills and interest. Intellectual development of students is stimulated and leadership qualities enhanced throughout the four-year curriculum. The student chapter of the American Society of Interior Designers (ASID) allows for interaction with professionals in interior design and allied professions.

In response to industry demands, the program is implementing a requirement for laptop computers. Students must acquire a laptop for use in studio courses that are taught in the spring semester of the second year of the program. Specifications for laptops must be obtained from interior design faculty prior to purchase by the student.

**Requirements for a bachelor of interior design (B.I.D.)**

HOURS

1. A total of 124 semester hours with a 2.00 cumulative GPA.
2. A minimum of 39 hours of courses 3000-level or above
3. University Core Requirements 35  
See page 41 for core courses.  
Must include 3 hours from  
ECON 2013 or ECON 2023 or  
ECON 2143 or AGECE 1103 or  
AGECE 2013  
PSYC 2003  
SOCI 2013  
Fine Arts (3 hours)
4. Other University Requirements 3  
ENGL 2003 Advanced Composition Requirement (see page 43).  
If exempt, must take 3 hours from  
COMM, JOUR, or ENGL courses
5. College Requirements 3  
COMM 1313
6. Electives 1

7. School Requirements 82  
 One ARTS studio elective and ARCH 4433  
 6 hours of business courses to be selected from  
 ACCT 2013, ISYS 1121L, ISYS 2232, FINN 3003, MGMT 3563, or BLAW 2013, MKTT 3433, FINN 3933  
**NOTE:** At least two of the three courses in studio art and business must be 3000- or 4000-level to meet the college requirement of 39 upper-division hours.  
 69 hours of HESC courses to include:  
 HESC 1501 - Orientation to HESC  
 HESC 2053 - Intro to Textile Science  
 HESC 2413 - Family Relations

HESC 4303 – Professional Development in HESC  
 HESC 1031 – Design I  
 HESC 1034 - Design I Studio  
 HESC 1041 – Design II  
 HESC 1044 - Design II Studio  
 HESC 2803 - Studio I: Development of Interior Space  
 HESC 2813 - Studio II: Design Process & Application  
 HESC 2823 - ID Materials & Resources  
 HESC 2833 – Introductory Presentation Media  
 HESC 2841 – Lighting Studio  
 HESC 2842 – Lighting Systems  
 HESC 2883 - History of ID I  
 HESC 2893 – Principles of Computer-Aided Design

HESC 3803 - Studio III: Working Drawings and Building Systems  
 HESC 3813 - Studio IV: Interiors for Public Use  
 HESC 3823 - Human Factors in ID  
 HESC 3863 – Advanced Presentation Media  
 HESC 3883 - History of ID II  
 HESC 4803 - Studio V – Advanced Residential Design  
 HESC 4811 - Internship for ID  
 HESC 4823 - Professional Procedures  
 HESC 4843 - Internship Preparation  
 HESC 4863 - Studio VI - Commercial Design  
 HESC 4891 - Senior Portfolio

SEE PAGE 301 FOR HUMAN ENVIRONMENTAL SCIENCES (HESC) COURSES