PURDUE
UNIVERSITY

Student Handbook for Undergraduate Programs in the Department of Animal Sciences August, 2012

Purdue University
Department of Animal Sciences
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Introduction

Welcome to Purdue University and the Department of Animal Sciences.

This handbook has been prepared to help students understand the requirements for their major, give guidance for selecting various elective courses that would be useful for life-long learning and provide information for career opportunities. This is the 12th printing of this handbook and includes the College of Agriculture core requirements for students matriculating for the 2012 fall semester.

The Department of Animal Sciences is dedicated to providing a stimulating educational environment for all students. Through your interactions with your counselor, the faculty and staff of Animal Sciences, we hope to initially prepare you for success in your chosen career.

If any student has any concerns at any time during their stay at Purdue University, please do not hesitate to contact the Undergraduate Programs Office in Lilly Hall, Room 2-110.

Sincerely,

Mark A. Diekman
Undergraduate Programs Coordinator
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College of Agriculture
Purdue University
Fall Semester Undergraduate Enrollment History – B.S. Degree

Dept/Prog	F'98	F'99	F'00	F'01	F'02	F'03	F '04	F '05	F '06	F '07	F '08	F '09	F '10	F '11
AGEC	370	355	348	335	332	322	321	324	394	393	439	499	458	460
ABE	255	233	230	240	261	240	228	245	248	263	263	299	332	347
AGRY	187	172	199	148	165	159	156	136	156	140	172	151	153	150
ANSC	306	301	372	387	374	433	465	524	526	542	590	579	602	617
BCHM	43	42	41	41	36	50	68	85	79	90	99	105	106	102
BTNY[#]	22	19	9	11	14	13	15	27	20	25	27	22	23	29
ENTM[#]	21	19	20	25	21	18	37	43	46	48	36	29	33	34
FNR	280	263	256	267	269	262	244	342	284	289	302	344	311	291
FS	153	156	128	122	114	112	117	110	126	135	129	132	159	165
HLA	344	354	352	341	356	346	326	320	293	282	274	260	231	222
PRE-VET	214	222	203	191	182	153	138						51	28
GEN AG	75	65	76	86	92	83	48							
AG ED	102	104	103	96	83	88	81							
NRES*	118	110	102	82	71	59	52						72	112
AG COM	20	31	40	40	35	35	42							
YDAE**								145	129	148	113	110	119	109
INT DIS/ PRE-VET***								210	160	163	84	34	11	13
TOTALS	2,483	2,419	2,453	2,432	2,406	2,373	2,324	2,511	2,461	2,518	2,528	2,420	2,661	2,687

[#] Beginning with Fall 1989, each entry under Entomology and Botany & Plant Pathology includes one-half of the enrollment in the jointly administered Crop Protection program of study. Three students in total are enrolled in Crop Protection in F'00.

* Beginning in 2005, enrollment in NRES was included in FNR.

** Beginning in 2005, AG ED and AG COM were combined into Youth Development & Ag Education (YDAE).

***Beginning in 2005, General Ag/Pre-Vet/Undecided were added together.

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(August, 2012)

History of Purdue University

Purdue University is the Indiana link in the chain of 68 land-grant colleges and universities that owe their origin to the Morrill Act signed by President Lincoln on July 2, 1862. By this act, the federal government offered to turn over public lands to any state that would use the proceeds from the sale of the land to establish and maintain a college to teach the agricultural and mechanic arts.

During its 136 years, Purdue has grown from 39 students and six instructors to an enrollment of approximately 65,000 on five campuses and 11 School of Technology locations with faculty of more than 3,600. More than 38,000 students are enrolled on the West Lafayette campus. Today 43% of Purdue's students on the West Lafayette campus are women. Most undergraduates are from Indiana, but the University also enrolls students from every state and many other nations.

The mission of the University is not limited to undergraduate and graduate instruction. Last year more than 120,000 students enrolled in 1,000 continuing education programs. Through the Cooperative Extension Service and the Office of Agricultural Research Programs, Purdue touches the lives of thousands of citizens of the state.

Purdue rests its reputation on its 400,000+ alumni throughout the world. Some of these alumni have become well-known--astronauts, Nobel Prize winners, U.S. or state senators or representatives, U.S. secretaries of agriculture, literary figures, journalists, and college and corporation presidents. Purdue graduates are people who hold society together--teachers, business leaders, engineers, managers, agriculturalists, scientists, technologists, pharmacists, and veterinarians.

Growth and progress mark the 136 years of Purdue University. Throughout that history, the University has sought to remain true to the spirit of the Morrill Act, particularly by promoting the agriculture and industry of the state. It also has been guided by the principles of the charter to concentrate on these technical subjects "without excluding other scientific and classical studies, and including military tactics."

Three years after passage of the "land-grant" act, the Indiana General Assembly voted to take advantage of the act's provisions and began preliminary plans to establish a college. Competition from various state communities for the new school ended in 1869 when the assembly accepted $150,000 from John Purdue, $50,000 from Tippecanoe County, and 100 acres of land from local residents. In appreciation, the legislators named the institution Purdue University.

Richard Owen, son of cooperative economist Robert Owen, had served as first president since 1872 but resigned shortly before classes began. The superintendent of Indianapolis schools, Abraham C. Shortridge, succeeded to the presidency and awarded Purdue's first degree in June 1875. Under the leadership of Emerson E. White enrollment increased to 350, but President White's antifraternity stand led to his resignation in 1883. The Fort Wayne superintendent of schools, James Henry Smart, then assumed the office, which he held until the turn of the century.

Upon the death of President Smart in 1900, Winthrop E. Stone, head of the Department of Chemistry and vice president of the University, became president. His progressive administration ended with his death in the Canadian Rockies in the summer of 1921. Edward C. Elliott then gave up the chancellorship of the University of Montana to become Purdue's head administrator. He served from 1922 until his retirement in 1945.

In 1946, the University chose Frederick L. Hovde, Rhodes scholar and head of the United States rocket development during World War II. Under his leadership Purdue experienced its greatest expansion, growing from an enrollment of less than 6,000 to 34,000 with an ambitious building program to match.

Arthur G. Hansen, a Purdue alumnus and president of the Georgia Institute of Technology, became Purdue's eighth president in 1971. He left Purdue in 1982 to become chancellor of the Texas A&M system.

In 1983, Dr. Steven C. Beering became the ninth president of Purdue University. He earned B.S. and M.D. degrees at the University of Pittsburgh and served as dean and medical center director at Indiana University from 1969 to 1983. On August 14, 2000, Dr. Martin Jischke became the 10th president of Purdue University. Dr. Jischke earned his B.S. in physics from the Illinois Institute of Technology. He earned his M.S. and Ph.D. degrees in aeronautics and astronautics from the Massachusetts Institute of Technology in 1964 and 1968, respectively. He came to Purdue after being the president at Iowa State University for nine years with the goal of taking Purdue University to the next level. After serving for seven years, Dr. Jischke retired on July 1, 2007, after successfully completing a $1.4 billion fund raising campaign.

The 11th president of Purdue University began office on July 15, 2007. Dr. France Cordova has served as chancellor at the University of California – Riverside since 2002. Prior to the position, she was vice chancellor for research at the University of California at Santa Barbara. Previously, she held the position of NASA chief scientist working on projects that included the Hubble Space telescope. She admits that she has come full circle to Purdue, the cradle of astronauts, and the place that heightened her interest in astrophysics.

Brief History of the Department of Animal Sciences

According to the 1893-94 University catalog, the school year was organized into three terms: a 14-week fall term, a 12-week winter term and an 11-week spring term. In the School of Agriculture, a B.S. degree could be obtained in five areas: Science and Practice of Agriculture, Horticulture, Entomology, Ag Chemistry and Vet Science. Professor Plumb who lived at Farmhouse and specialized in Animal Industry and Dairying was the sole faculty member in Animal Agriculture. Several lecturers from throughout the surrounding states were hired to teach the ever-popular short courses.

A typical program of study for the freshmen or sophomore years consisted of chemistry, physics, geometry, algebra, model drawing, rhetoric, elocution, agriculture, shop work, botany and military drill. Courses taken as juniors and seniors were literature, livestock husbandry, animal physiology, farm economy, dairying, agricultural experimentation, political economy, stock feeding and farm drainage. To attend Purdue, the student incurred the following expenses:

Entrance fee	$5.00
Incidental fee	10.00
Lab/Library fee	12.00
Table board	2.50/week
Utilities	1.00/week
Washing	.75
Military suit	16.00

Depending on the lifestyle of the student, it was estimated the total cost for the year was $125. The Board of Commissioners of each county could appoint two students where the above fees were waived. All students were required to attend morning prayers in the Purdue Chapel daily at 10:15 a.m. except Saturdays and Sundays. The names, county of residence and campus address of all students were printed in the catalog along with the addresses of the faculty. Total enrollment of the University was 682 students. In 1897, 24 students were listed as School of Agriculture majors with an additional 35 students listed as "Special" agricultural students (winter course).

In 1899, Assistant Professor Hubert Van Norman was added to assist instruction in dairying. The language front page of the University bulletin emphasized two items for admissions: 1) experience shows that one of the chief obstacles to successful work in college classes is unsatisfactory preparation. All prospective applicants are urged to finish their high school work before entering the University. 2) Books and instruments fee was added ($20).

In 1902, Rufus Obrecht and John Harrison Skinner joined the faculty as assistants in Animal Industry and Animal Husbandry, respectively. Animal Husbandry was listed for the first time as a discipline in the School of Agriculture. Five years later, Professor Skinner was named the Dean of the School of Agriculture and two specializations were listed as Animal Husbandry and Dairying. In 1911, 20 courses were listed in the University catalog under the titles of breeds, management, nutrition, breeding, anatomy, poultry housing and judging. Dairying was changed to Dairy Husbandry and seven courses in milk and cheese processing were offered.

In 1912, Professor Otto Fred Hunzicke was appointed the first Head of Dairy Husbandry. In addition, the Department of Ag Extension was established. Seven years later, the Department of Poultry Husbandry was established with Allen Griffith Phillips as the head. Ten poultry courses were offered. At this time, 579 students were majoring in the School of Agriculture admist the total population of 2,683 students.

In 1921, the following statistics were available for animal related departments.

	Animal Husbandry	Dairy Husbandry	Poultry Husbandry
Professors	3	2	1
Associate Professors	1	2	--
Assistant Professors	3	--	1
Instructors	3	3	2
Students (Jr & Sr)	57	32	8

These departments remained stable for approximately 20 years until the outbreak of World War II. The curriculum was offered all year around to allow the four-year program to be completed in two years and eight months. Current department heads were as follows: Animal Husbandry, Franklin King; Dairy Husbandry, Howard Gregory; Poultry Husbandry, Joe Martin. Faculties were expanded to include eleven, nine and four professors in the animal, dairy and poultry husbandry departments, respectively. Two specializations in dairy husbandry were offered: dairy production and manufacturing. Courses offered in Vet Science included sanitation, anatomy, physiology and infectious diseases.

With the addition of Fred Andrews to the staff, reproductive physiology courses were added along with genetics courses in 1944. For the first time, courses specialized production courses were listed for beef cattle, swine, sheep and horses. A total of 53 courses were offered across the three departments. Requirements for graduation were 150 hours for animal husbandry, 149 hours for dairy husbandry, 150 2/3 hours for dairy manufacturing and 148 2/3 hours for poultry husbandry.

Enrollment at Purdue University reached 10,000 in 1954. In 1957, the Department of Poultry Husbandry was changed to Poultry Science. Final exams from the fall semester were given during the middle of January and the spring semester ended in late May. The catalog described West Lafayette as having five motion picture theatres and two drive-in theatres.

In 1958, the School of Veterinary Medicine was established for the State of Indiana at Purdue University. Minimum grade point average for graduation was enforced as 4.0/6.0 (2.0 on 4.0 scale adopted in 1993). The cooperative program between Vincennes University and Purdue was established with an A.S. in general agriculture. Some classes required for a B.S. degree in animal husbandry besides animal oriented classes were grain/forage crops, soils, bacteriology, soil fertility and fertilizer and farm organization. Three successful lines of endeavor were available in animal, dairy and poultry departments: farming, education and business. Number of hours for graduation was reduced to 136. The two-year pre-veterinary program was established in the School of Agriculture.

In 1961-62, $11 million dollars was spent on the 750 rooms in the Life Sciences Building (11 1/2 acres of floor space) and it was renamed Lilly Hall of Life Sciences. The yearly cost for

a student from Indiana was approximately $1,205, which included $240 for fees, $860 for room and board, $85 for books and $20 for a military uniform. The School of Agriculture enrollment was 1,336 out of a total of 19,229.

In 1963, Professor Fred Andrews was appointed as being "in charge" of Animal Sciences when the previous departments of animal, dairy and poultry were combined into the Department of Animal Sciences. The curriculum was revised to include 66 hours of ag core, 32 hours of animal sciences core and 38 hours electives. Combination of staff from the Department of Animal Sciences non-teaching staff of Ag Experiment Station and Ag Extension Services was 62. Fifty-four undergraduate and dual level courses plus 15 graduate level courses were listed in the catalog. Credit for ANSC 481 was limited to two semesters.

In 1966, an animal food science option was available in the department for those students who wanted to intensify their training in meat, poultry and dairy products. In 1969, plans of study in animal science were modified to promote careers for 1) animal production, 2) industries associated with animal agriculture and 3) education, research and other scientific positions.

Food Sciences Institute was founded by combining faculty from several departments including eight professors from Animal Sciences. In 1972, an animal food product specialization was available through the School of Agriculture. In 1973, the numbers of hours for graduation in Animal Sciences was reduced to 130. In 1981, nine departments in the School of Agriculture were offering 37 plans of study. In Animal Sciences, it was added that at least one course from five of seven areas were required: breeding, physiology, nutrition, production, products, food chemistry and food microbiology.

In 1985, nine of the Animal Sciences faculty were transferred to the newly formed Department of Food Sciences. Four plans of study were adopted by the Department of Animal Sciences: animal agribusiness, animal sciences, animal production and animal products.

In 1992, the School of Agriculture core requirements were modified to include international understanding and additional broadening electives. The animal science curriculum was modernized in 1998 and now includes pre-veterinary and biotechnology specializations in the science option. For students matriculating for the 2001 fall semester, a capstone experience and nine credit hours of International Understanding will be required for a B.S. degree in Agriculture. For the 2002 fall semester, a well-being/behavior specialization was added to the science option. For students matriculating in the College of Ag in 2006, a multicultural requirement must be fulfilled.

Beginning in the fall of 2012, the Department of Animal Sciences will offer one major (ANSC) with six concentrations: agribusiness, behavior/well-being, biosciences, pre-veterinary medicine, production and products. This reorganization was precipitated by the COA to reduce the number of majors in the COA in an attempt to simplify a student’s search of identifying areas of interest in agriculture. As mandated by the Higher Commission of Education in Indiana, an A.S. degree in Animal Sciences cannot be earned after May 2012.

Brief History of ANSC B.S. Degree at Purdue University

1963 Animal, dairy and poultry departments combined into Department of Animal Sciences.

ANSC degree (136 credits)
- Ag core (66)
- ANSC courses (32)
- Free electives (38)

1966 Animal Food Science option developed.

1969 Suggested courses to promote careers for:
- Animal production
- Industries associated with animal agriculture
- Education, research and other scientific positions
- International agriculture

Food Science Institute formed including 8 professors from Animal Sciences.

1971 Required freshmen curriculum for all AG majors (precursor to Ag Core philosophy).

1972 Animal food product specialization available from Animal Sciences.

1973 Number of hours in School of Ag reduced to 130.

1981 Nine departments in School of Ag offering 37 plans of study.

1982 ANSC degree required at least one course from 5 of 7 areas:
- Breeding
- Physiology
- Nutrition
- Production
- Products
- Food chemistry
- Food microbiology

1985 Department of Food Science established. Nine ANSC faculty absorbed by Food Science.

1985 Four plans of study developed in ANSC with a minimum of 25 credits of Animal Science credits required, including at least one course in breeding, nutrition, physiology, production or products.

- Animal agribusiness
- Animal science
- Animal production
- Animal products

1992 School of Ag adds international understanding (6 credits) and broadening electives (21 credits) as requirements for graduation.

1999 Bioscience, pre-veterinary and biotechnology specialization were added to science option. Minimum number of ANSC courses required increased to 33.

2001 Capstone experience was added and international understanding elective were increased to 9 hours.

2002 Behavior/Well-being specialization added as fourth component of science major.

2006 Multicultural awareness requirement added to plan of study.

2009 For ANSC majors, all ANSC courses must be taken for a grade except for ANSC 29300/49300 and cumulative GPA for ANSC courses must be $\geq$ 2.00 to graduate.

2012 Associate degree in Animal Sciences cannot be awarded after May 2012.

2012 Department of Animal Sciences has one major (ASCI) with six concentrations leading to a B.S. degree: agribusiness (ANAG), behavior/well-being (BEHV), biosciences (BISC), pre-veterinary sciences (PRMD), production (ANPR) and products (ANPD).

Animal Sciences Research and Education Center (ASREC)

The mission of the Animal Sciences Research and Education Center (ASREC) is to provide animals, facilities, and labor to conduct research, provide instruction and assist in extension education activities. Research trials vary from basic to applied and involve many disciplines--nutrition, physiology, behavior, genetics, reproduction, animal health, and product quality. Faculty utilize ASREC to facilitate teaching several Animal Sciences courses and to help provide hands-on experience for students. Some extension education activities held at ASREC are Swine Day, Lambing School, Animal Sciences Workshop for Youth, 4-H and FFA judging, Purdue Royal, and Tots' Day. The Center hosts nearly 100 tours annually with an estimated 2,500 visitors.

The land base for ASREC consists of 1,515 contiguous acres of highly productive prairie soils. There are five separate tracts that were acquired between 1968 and 1987. The Research Center, north of Montmorenci, is adjacent to the northwest corner of the Agronomy Research Center. The relocation of animal units to the current location began in 1968. The first buildings (1969 and 1970) were for swine and poultry. The feed mill was built in the mid-70's and, in 1983, state funds were appropriated for construction of the other animal facilities. Relocation was completed in 1988 for beef, dairy, poultry, sheep, and swine. Twelve quarter-acre ponds were constructed for Aquaculture in 1997. In 1996, the USDA constructed a 10,000 square foot facility for scientists to identify how animals perceive and respond to their environment.

The Center's annual operating budget is nearly $4,000,000. Each animal unit, feed mill, and farm operations has a manager and full-time employees. Additionally, there is a coordinator and an account clerk at the center making a total of 43 full-time employees. Student part-time employees average over 800 hours per week. They are an integral part of our work force, and their experience also provides them with valuable training. If a student is interested in working at a farm unit during the school year or summer, he/she should contact the unit manager directly.

Aquaculture Unit

Robert Rode, Mgr.; Phone 583-0351

This facility is used for intensive research efforts in nutrition, reproduction, and genetics with new and established aquaculture species. The facility is a 7,400 square foot building and consists of a 4,700 square foot tank room, a 480 square foot laboratory, as well as an office, a conference room and a storeroom. Specific objectives of the research conducted at the Aquaculture Unit include: 1) establishing nutritional requirements and management procedures for rearing aquatic species in Indiana; 2) examining alternative aquatic species for potential as new sources of revenue to the State of Indiana; 3) eliminating seasonal spawning in commercial aquaculture species; 4) finding genetic methods of reducing or eliminating cannibalism in aquatic species; and 5) determining genetic and environmental regulators of egg and milt production.

Beef Unit

Brian DeFreese, Mgr.; Phone 583-2622

The purpose of the beef unit is to provide cattle and facilities for intensive and extensive research in nutrition, physiology, genetics, growth and development, and meats, as well as undergraduate teaching. Facilities at the Calvert Farm were completed in 1986 and include 640 acres at this site. The cow-calf unit (Scholer farm) is located 16 miles southwest of campus and includes 860 acres of pasture, cropland and woods. The breeding herd consists of 270 Angus/Simmental crossbred females. Typically, 120 head of heifers and first calf cows are maintained at the Calvert facility, while the remaining 150 head of brood cows are maintained at the Scholer farm.

Dairy Unit

Mike Grott, Mgr.; Phone 583-2526

The dairy unit provides facilities needed to meet the research, teaching and extension demands of the Indiana dairy industry. Currently, 200 Holstein dairy cows and 200 dairy herd replacements are housed. Brown Swiss embryos have been donated to develop a herd of 20 cows for teaching and extension. Future plans are to develop about the same number of Jerseys for the same purpose. All cows over 6 months of age are fed using complete mixed rations.

The milking parlor has a double six-herringbone milking system, computerized automatic cow ID, milk meter system, automatic removal devices, back flush, stainless steel raceways, CIP equipment, fresh water flush and 3,000 gallon bulk milk cooler. The cow holding and work area includes electronic scales for weighing animals, an area to catch and hold animals, additional space for demonstrations and classes and a central area for working and sorting of animals.

Poultry Unit

Fred Haan, Mgr.; Phone 583-2950

The poultry unit and facilities provide for intensive and extensive research in nutrition, physiology, environmental influences and genetics as well as for teaching and extension. It provides fertile eggs to various departments as well as to other universities and schools for teaching and research. The hatchery includes the office, computer, conference room, and seven Jamesway Incubators (cap. of 17,640 eggs) used for hatching eggs for teaching and research. This building has an egg cooler room (cap. of 200 cases) used for storing hatching eggs prior to being set for incubation and for storage of table eggs prior to sale.

Sheep Unit

Gerald R. Kelly, Mgr.; Phone 583-2822

The sheep unit provides facilities for intensive efforts in nutrition, reproduction, physiology, neuroendocrinology, and biomedical research, as well as providing animals for undergraduate teaching. The objectives are to improve the quality of animal protein and increase efficiencies of production. The breeding flock has 150 ewes lambing annually with the goal of 50 percent of the ewes in fall lambing as opposed to traditional spring lambing of all ewes.

Swine Unit

Richard Byrd, Mgr.; Phone 583-4897

The mission of this unit is to provide swine for research in the areas of genetics, nutrition, physiology, and management and also to provide animals for the undergraduate teaching and extension programs. The breeding herd is made up of 240 sows and 12 to 16 boars. Thirty-six litters are farrowed per month. The breeding program includes saving gilts from the herd while boars are purchased. Replacement gilts are from a rotational breeding program using Yorkshire and Landrace boars. Eighty percent of these white females are bred to terminal sires using either H X D or PIC line 405 boars.

USDA Livestock Behavior Lab

Donald Lay, Jr., Coordinator; Phone 496-3665

Goals of this facility are to identify how animals perceive and respond to their environment and to find ways to minimize stress. The building has non-slip flooring with post holes every 8 feet so that many different mazes and pen arrangements can be arranged. This versatile facility is available for cognitive research by both USDA scientists and Purdue faculty.

Feed Mill

Mike Zeltwanger, Mgr.; Phone 583-4785

The feed mill provides feedstuffs and ingredients, and mixes diets for all animal and poultry units of Animal Sciences Department, plus other departments in the Schools of Agriculture and Veterinary Medicine. The feed mill does not sell feed outside the University. Typically, all diets are custom-mixed to the formulas provided by our various researchers and managers. Approximately 210 tons of feed are manufactured monthly.

Outlying Animal Research Farms

Feldun-Purdue Agricultural Center (Feldun)

Jerry Fankhauser, Director; Phone 494-8368

The 1,400 acre Feldun property is located in Lawrence County near Bedford on the limestone derived soils of this part of southern Indiana. Feldun was the first Indiana "experiment station" established outside of Tippecanoe County. This center has only 275 acres of tillable land. The remaining acreage is used as pasture for the 235 herd cattle, which is in research studies by scientists of the Departments of Animal Sciences and Agronomy, and forested land. Feldun is also the site for the Indiana Beef Evaluation Program (IBEP) bull test station.

Southern Indiana-Purdue Agricultural Center (SIPAC)

Jerry Fankhauser, Director; Phone 494-8368

SIPAC is located in Dubois County near the Potoka Reservoir. This 1,300 acre center is situated on the difficult to manage sandstone and shale soils of southern Indiana which pose a continuing challenge for agricultural researchers. Since its establishment, SIPAC has been the scene of extensive experimental work on adapted grasses and legumes, livestock grazing trials, forage management, beef cattle winter feeding trials, aquaculture and forest management.

Registration

Each student is admitted to a school or division of the University and is registered for each session in a selected curriculum. This curriculum is a program of study covering the entire undergraduate or graduate career and is designed to satisfy the requirements for an associate, baccalaureate or advanced degree. The student's schedule for each semester consists of registration of required and elective courses.

The semester-hour is the unit of University academic credit and represents approximately one hour of class attendance each week throughout a normal semester or its equivalent in total work for summer sessions. Any reference to credit hours, course credits, etc., shall be understood as referring to semester-hours.

Instruction is organized and administered as particular subject courses. The level of instruction is indicated by the catalog number. A course numbering system, which reflects the level of instruction, indicates the following:

00100-09900 -- Precollege, deficiency, or noncredit courses.
10000-29900 -- Lower-division courses normally scheduled for freshmen and sophomores.
30000-49900 -- Upper-division courses normally scheduled for juniors and seniors.
50000-59900 -- Dual-level courses normally scheduled for juniors, seniors, and graduate students.
60000-69900 --Graduate-level courses designed for graduate students.

Registration Checklist

- Make an appointment to see your academic advisor as soon as you are eligible to do so.
- Review your up-to-date progress report. Verify accuracy of information. Discuss discrepancies with your advisor.
- Keeping your program requirements in mind, choose the classes you need or want to take. Will the times work together? Work out a tentative schedule and bring this with you to your registration appointment.
- Keep your appointment or cancel ahead of time.
- Check on myPurdue and make sure your addresses and phone numbers are correct to ensure that you will receive a bill and schedule in a timely manner.
- Pay your fees before the date printed on your invoice. Return your fee invoice even if the amount due is "0." If you do not, your registration will be cancelled and you probably will not get back in the same classes. Arrangements are possible through the Office of the Bursar to delay your fees if you cannot make the payment deadline.

Adding a Class

There are times when adding a course to your schedule is desirable after classes have already started. Classes may be added after the second week only under certain circumstances. See your academic advisor to initiate this process.

Add deadlines for 16 week courses:
Week 1 - Advisor signature needed.
Weeks 2-4 - Advisor and instructor signatures needed.
Weeks 5-9 - Advisor, instructor, and department head signatures needed. Extenuating circumstances only.

Dropping a Class

Dropping a course is possible if you follow the deadlines listed below. Dropping a class may delay your graduation.

Drop deadlines for 16 week courses:
Weeks 1-2 - Course is not recorded.
Weeks 3-4 - Course is recorded with a grade of W. Advisor signature needed.
Weeks 5-9 - Grade of W, WF or WN will be recorded. Advisor and instructor signatures are needed for students who are classified as a 3 or higher. Students who are classified as 0, 1, or 2 do not need instructor's signature; grade will automatically be a W. A W or WF does not enter into the student's grade index.

Checklist for Graduating Seniors

Your efforts have paid off and you are almost done! Here are a few things that need your attention so that nothing comes between you and graduation.

- Make sure your schedule indicates you are a candidate. If you don't see "CAND" or "CANDIDATE" on your schedule, please see your academic advisor immediately.

- If you have any concerns, check with your academic advisor early in the semester to verify that your degree requirements are being met. You may want to order a transcript so that you can clearly see your academic record by semester.

- Beware of senioritis. It's easy to be distracted. Check minimum grade point average and credit requirements for your plan of study.

- Make sure you have no encumbrances (such as financial aid exit interview, or money owed for parking tickets, student health center services, library fines, lab breakage fees, etc.). You will not receive your degree until encumbrances have cleared.

- Provide your current and future address to the Office of the Registrar via myPurdue or at Hovde Hall, Room 45.

- Midway through the semester you will receive information from the Office of the Registrar to verify your name, major, hometown, etc. Please respond promptly. A few weeks later you will receive a second mailing about your cap and gown and commencement tickets.

Grades

Each student is responsible for the completion of all required work in each course for which he or she has enrolled by the time of the last scheduled meeting of the class, unless his or her assignment to the course has been properly cancelled. Each student receives from their instructors a grade in each course for which he or she is enrolled at the close of the session. This grade indicates the student's achievement with respect to the objectives of the course. Beginning with the 2008 fall semester, the instructor has the option of using a +/- grading system.

Credit Courses

A	Highest passing grade.
B	
C	
D	Lowest passing grade; passing minimal objectives of the course.
E	Conditional failure, failure to achieve minimal objectives, but only to such limited extent that credit can be obtained by examination or otherwise without repeating the entire course. This grade

represents failure in the course unless and until the record is duly changed within one semester. It cannot be changed to a grade higher than a D.

F Failure to achieve minimal objectives of the course. The student must repeat the course satisfactorily to establish credit.

Incomplete Work (Credit or Non-Credit Courses)

I Incomplete; no grade; a record of work that was interrupted by unavoidable absence or other causes beyond a student's control, which work was passing at the time it was interrupted, and the completion of which does not require the student to repeat the course to obtain credit. The incomplete also may be used to delay the awarding of a grade in courses (e.g., self-paced courses, mastery courses, and special problems) the completion of which normally requires one semester, but the structure of which allows specified additional time. An instructor may require the student to secure the recommendation of the dean of students that the circumstances warrant a grade of incomplete. When an instructor reports a grade of I, he or she shall file in the departmental office a statement of the reason for the grade and what is required of the student to achieve a permanent grade. He or she also shall indicate the grade the student has earned on the work completed and the weight to be given to the remainder of the work in computing a final, permanent grade. The student must achieve a permanent grade in the course no later than the 12th week of the second subsequent semester of enrollment, or the I grade will revert to a failing grade (IF) and enter into the student's grade index.

PI Incomplete; no grade; same as I except that the student was enrolled under the pass/not-pass option.

SI Incomplete; no grade; same as I except that the student was enrolled in a zero credit course.

Pass/Not-Pass Option

To provide students with the opportunity to broaden their educational foundations with minimal concern for grades earned, the pass/not-pass option is available. Students may register in the pass/not-pass option under certain conditions. A student classified as a sophomore or higher and who has a minimum of 2.0 graduation index may elect the pass/not-pass grading option. A maximum of 21 credits of elective courses under the pass/not-pass grading option can be used toward graduation requirements. Courses listed on a plan of study that are required by number (i.e., CHM 11100, AGRY 32000) cannot be taken as pass/not-pass. For ANSC majors, all ANSC courses must be taken for a grade except for ANSC 29300/49300. Any elective course is eligible for consideration for pass/not-pass option.

A student enrolled in this option has the same obligations as one enrolled for a letter grade. A student enrolled in this option must earn a grade of A, B, or C to pass the course.

P Passing grade; equivalent to grades A, B, or C.

N Not passing; equivalent to grades D or F.

Directed Grades

The registrar is directed to record the following grades and symbols under special circumstances:

W Withdrew: a record of the fact that a student was enrolled in a credit course and withdrew from the course after the second week.

WF Withdrew Failing: a record that a student, with a classification of 3 or higher, was enrolled in a credit course and withdrew from the course after the fourth week at which time, according to a statement from the instructor, the student was not passing in his or her work. A WF does not enter into the GPA index. A grade of WF may be directed by the Committee on Scholastic Delinquency and Readmissions.

WN Withdrew Not Passing: the same as WF for a credit course taken under the pass/not-pass except it does not affect index computations.

WU Withdrew Unsatisfactory: the same as WF for a zero credit course except that it does not affect index computations.

IF Unremoved Incomplete-Failing: for a credit course in which a student received an I grade, a directed record of the student's failure to achieve a permanent grade by the 12th week of the second subsequent semester of enrollment. This grade counts in all respects as a failing grade.

IN Unremoved Incomplete-Not Passing: for a credit course taken under the pass/not-pass option and in which the student received a PI grade. The same as an IF grade except that it does not affect index computations.

IU Unremoved Incomplete-Unsatisfactory: for a zero credit course in which a student received a SI grade. The same as an IF grade except that it does not affect index computations.

Good Standing

For purposes of reports and communications to other institutions and agencies and in the absence of any further qualification of the term, a student shall be considered in good standing unless he or she has been dismissed, suspended, or dropped from the University and has not been readmitted. For the associate and bachelor degrees, the minimum cumulative GPA is 2.0.

Scholastic Indexes

The scholastic standing of all students enrolled in programs leading to a degree is determined by three scholastic grade point averages (GPA): the semester GPA, the cumulative GPA and the program GPA.

1. The semester index is an average determined by weighting each grade received during a given semester by the number of semester hours of credit in the course.

2. The cumulative GPA for an undergraduate student is a weighted average of all grades received as an undergraduate student. With the consent of his/her academic advisor, a student may repeat a course not intended for repeated registrations. In the case of such a repeated course, only the most recent grade received shall be included in the cumulative GPA. Transfer credits from other colleges and universities may be used to fulfill degree requirements, but can not be used to remove Purdue recorded grades from GPA calculations.

3. The program GPA is derived from a degree audit and will be used as a criterion to accept a student to a program during the process of Change of Degree Objective (CODO). The degree audit relative to the program to which a student transfers is used to determine the program grade point average. In a case where no courses of the initial program apply to the new program, the same criteria for acceptance may be used as for a student applying out of high school.

GRADE WEIGHT

Grade	Weight
A+, A	4.0 x sem hrs = index pts
A-	3.7 x sem hrs = index pts
B+	3.3 x sem hrs = index pts
B	3.0 x sem hrs = index pts
B-	2.7 x sem hrs = index pts
C+	2.3 x sem hrs = index pts
C	2.0 x sem hrs = index pts
C-	1.7 x sem hrs = index pts
D+	1.3 x sem hrs = index pts
D	1.0 x sem hrs = index pts
D-	0.7 x sem hrs = index pts
E, F, WF, EF, IF	0.0 x sem hrs = index pts
P, N, I, PI, SI, W WN, WU, IN, IU	Not included

The semester GPA is the sum of all index points for one semester of grades A+/A, A-, B+, B, B-, C+, C, C-, D+, D, D-, E, EF, IF, WF, and F divided by the sum of all corresponding semester hours.

College of Agriculture
Registration Procedures
Indiana College Network (ICN) Courses

Procedures to Add a Course

1. Student meets with academic advisor to select course and prepare Registrar's Form 23 including signatures of the student and advisor. Use a separate Form 23 for distance education courses.
2. Student completes Indiana College Network (ICN) application form.
3. Student delivers both the Course Request (Registrar's Form 23) and Indiana College Network (ICN) form to the Office of Continuing Education, Stewart Center, Room G-34.
4. An e-mail confirmation is sent to the student. It is the student's responsibility to initiate the steps to retrieve the course syllabus online.

Procedures to Drop a Course

1. Student meets with academic advisor to identify the course(s) to be dropped and prepares Registrar's Form 23 including signatures of the student and advisor. Use a separate Form 23 for distance education courses.
2. Student completes Indiana College Network (ICN) course withdrawal form.
3. Student delivers both the Course Request (Registrar's Form 23) and Indiana College Network (ICN) forms to Camilla Lawson in Stewart Center, Room G-34.
4. Camilla Lawson sends an e-mail confirmation to the student and the student's academic advisor.

Purdue University deadlines for adding and dropping courses will be utilized for all ICN courses, including those identified for open enrollment. Course additions and withdrawals will not be allowed after the 9th week of the fall and spring semesters, or after 4½ weeks of the regular eight-week summer session. Schedule changes for courses meeting other than eight or sixteen weeks will be prorated.

Transfer Credits

If a student desires to transfer credits from another college or university, a transcript must be submitted to the Credit Evaluation Office in Schleman Hall, Room 108. If coursework is accepted by Credit Evaluation, the credit is converted into terms of Purdue courses. The credit evaluation summary is then reviewed by Dr. Allan Goecker, Associate Director of Academic Programs for Agriculture, and course(s) not applicable for credit in the College of Agriculture are indicated. Agricultural courses taken at non-land grant colleges are not evaluated by Credit Evaluation. Credit for agricultural courses may be established by obtaining the necessary signatures on Form 390 (see Appendix). Grades are not transferred; only credits in courses are

recorded. Only courses with grades of "C-" or higher are transferable. Credits will transfer from Purdue regional campuses if a passable grade is obtained and the grade is calculated in the cumulative GPA.

It is highly recommended that if a student is considering taking courses at another college or university, the course equivalency at Purdue should be verified on the transfer database (https://esa-oas-prod-wl.itap.purdue.edu/prod/bzwtxcrd.p_select_info).

Scholastic Probation

A candidate for an associate or baccalaureate degree shall be placed on probation if his or her semester or graduation index at the end of any semester is less than that required for a student with his or her classification as shown in Table A.

A student on probation shall be removed from that status at the end of the first subsequent semester in which he/she achieves a semester and cumulative GPA equal to or greater than those required for a student with her/her classification as shown in Table A.

Table A. Index Levels for Probation

Classification	Semester GPA Less Than	Cumulative GPA Less Than
0 and 1	1.5	1.5
2	1.5	1.6
3	1.6	1.7
4	1.6	1.8
5	1.7	1.9
6	1.7	2.0
7	1.7	2.0
8 and up	1.7	2.0

Any grade change because of a reporting error will result in a recalculation of the index and determination of probation status.

Scholastic Deficiency (Drop)

A student on scholastic probation shall be dropped from the University if, at the close of any regular semester, his/her graduation index is less than that required of a student as shown in Table B or he/she receives failing (F) grades in six credit hours or more for the semester.

This rule shall not apply for the semester in which the student completes all requirements for his/her degree. However, records of a degree recipient who does not meet the minimum index requirement of Table B shall be reviewed by the appropriate campus readmissions committee before he/she is allowed to pursue another undergraduate degree.

Table B. Index Levels for Dropping

Classification	Cumulative GPA Less Than
0 and 1	1.3
2	1.4
3	1.5
4	1.6
5	1.7
6	1.8
7	1.9
8 and up	2.0

Any grade change due to a reporting error will result in a recalculation of the index and determination of drop status. A student dropped by this rule must apply to the appropriate office or readmission committee for the Purdue campus of choice. A fee is assessed for processing the readmission application. Readmission is not guaranteed, but any student who gains readmission is readmitted on probation and is subject to stipulations in effect as a condition of readmission. For more detailed information about readmissions, visit www.purdue.edu/ODOS/services/readmission.htm.

Withdrawal from the University

If you need to leave the University for the semester, you should officially withdraw through the Office of the Dean of Students in Schleman Hall. Failure to withdraw officially could result in failing grades leading to academic probation or drop status.

Registered students who find it necessary to cancel their registration prior to the beginning of classes, upon the recommendation of the registrar, will receive a 100% refund of all fees and tuition. To withdraw from the University in good standing and to minimize re-entry procedures before classes start, it is recommended that a letter stating your intentions be filed with the Office of the Dean of Students. To withdraw after classes have started, an official withdrawal form must be filed with the Office of the Dean Students and signed by Dr. Goecker in Room 121 of AGAD. Your advisor in the Department of Animal Sciences does not have the authority to approve a total withdraw from the University.

Students who withdraw during the first six weeks of a semester or the first three weeks of a summer session, with the recommendation of the registrar, will receive a partial refund of the general service fee and tuition. More specifically, the percentage of refund is determined as follows:

<u>Fall or Spring Semester</u>

1. Withdrawal during the first or second week, 80% refund.
2. Withdrawal during the third or fourth week, 60% refund.
3. Withdrawal during the fifth or sixth week, 40% refund.

Summer Session

Refunds for summer session are proportionate on the same basis as semester refunds.

No portion of the health, student activity, recreation facilities, or academic building facilities fees will be refunded on or after the beginning of classes.

Readmissions

Students who are dropped from Purdue University for academic deficiency can not attend Purdue University or one of its regional campuses for at least one semester (not including summer session) and must apply for readmission through the Office of the Dean of Students. Deadlines for submitting an application and for removing all encumbrances must be followed. A $100 fee is assessed for an application for readmission. A student may strengthen his or her application by submitting evidence of successful employment or coursework from another institution (12 hours of science courses with "C-" or higher). Information about the readmission process is available from the Office of the Dean of Students, Schleman Hall, 765-494-1247.

Scholastic Recognition

Dean's List

At the conclusion of each semester, the registrar shall indicate which undergraduate students are scholastically eligible to be included on the Dean's List. To qualify, one must:

1. Have at least 12 credit hours included in the cumulative GPA.
2. Have at least 6 hours included in the cumulative GPA.
3. Attain at least a 3.5 cumulative GPA.
4. Have at least a 3.0 current semester GPA.

Semester Honors

At the conclusion of each semester, the registrar shall indicate which undergraduate students are scholastically eligible for Semester Honors. To be cited, one must:

1. Have at least 6 credit hours included in the semester GPA.
2. Attain at least a 3.5 semester GPA.
3. Have at least a 2.0 cumulative GPA.

Graduation with Distinction

1. A candidate for the professional and baccalaureate degree with distinction must have a minimum of 65 hours of credit earned at Purdue included in the computation of the cumulative GPA. A candidate for an associate degree with distinction must have a minimum of 35 hours of credit earned at Purdue included in the computation of the cumulative GPA.

2. The minimum graduation index for graduation with distinction in each school shall be no less than the 90th percentile of the cumulative GPAs of the graduates in each school, for the spring semester, provided that the index is at least 3.30. The minimum cumulative GPA so determined in the spring for each school shall be applied for graduation with distinction for the subsequent summer session and fall semester. In administering this rule, all baccalaureate engineering graduates will be considered as one school.

3. Of those graduates who qualify for distinction under these rules for the spring semester, the three-tenths of the baccalaureate graduates having the highest graduation indexes shall be designated as graduating with highest distinction, irrespective of the schools from which they graduate. The three-tenths of the spring associate degree graduates having the highest graduation indexes will be designated as graduating with highest distinction. The minimum cumulative GPAs so determined for graduation with highest distinction shall be applied for graduation with highest distinction for the subsequent summer session and fall semester.

Classification of Undergraduates

A student's academic classification for an associate or bachelor's degree shall be classified by numerals 1-8 according to the total number of credit hours of college work earned.

Total Credits Earned	Semester Classification	Status
14.0 or less	1	First-Year
15 to 29	2	Student
30 to 44	3	Sophomore
45 to 59	4	
60 to 74	5	Junior
75 to 89	6	
90 to 104	7	Senior
105 or more	8	

During the final registration period, the student is placed in candidate status by registering for CAND 99100. If the student is not registered at Purdue during the session that the student meets graduation requirements, the student must register for "degree only" via CAND 99200 and pay a processing fee. If the appropriate credits are transferred to Purdue by the third week after the end of the semester, the degree is granted and the diploma is mailed to the student's address on file.

Study Abroad

Purdue University offers students within all fields of study the opportunity to participate in international study programs in more than 40 countries: Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, Costa Rica, the Czech Republic, Denmark, the Dominican Republic, England, France, Germany, Ghana, Honduras, Hungary, Iceland, Ireland, Israel, Italy, Japan, Martinique, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Russia,

Scotland, Singapore, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Turkey, Vietnam, and Wales. In most programs, students earn Purdue credit for courses completed. Although the academic experience is rigorous, programs allow extensive contact with the local culture. Depending on the country where coursework was completed, grades or no pass credit may be granted.

Every effort is made to keep program costs as close as possible to the cost of study on the West Lafayette campus. Students eligible for financial aid may use forms of aid on approved programs. Students are responsible for their own airfare, board, room, books, and other personal expenses. Students may spend a year, a semester, or a summer abroad. Foreign language requirements vary from none to the advanced level. The language of instruction is English in more than 50 programs. Some programs are designed for students in specific areas of study; others are open to all Purdue students regardless of major.

For further information and application forms, contact the Programs for Study Abroad Office, International Programs, Room 120, Young Graduate House. Additional information also is available in the current *General Information* bulletin. Some study abroad programs focus on agriculture, and most satisfy the overseas requirements of the College of Agriculture International Studies minor. Certain College of Agriculture study abroad programs offer special scholarships to cover some costs. For further information about College of Agriculture programs or to request application forms, contact Linda Vallade, International Programs in Agriculture, Room 26, Agricultural Administration Building.

Dean's Scholar Program

If you meet the criteria to be awarded a Scholarship of Excellence from the College of Agriculture as an incoming freshman, you are eligible to enter the Dean's Scholar Program. As a Dean's Scholar, you can be part of:

- Honors courses, which are smaller, are faculty-taught and encourage personal interaction
- An annual Dean's retreat
- Research with internationally known faculty member (ANSC 49900)
- An annual research and poster symposium
- Activities and events for Dean's Scholars
- A prestigious Dean's Scholar designation upon graduation (concentration)

If you are transferring to the College of Agriculture, please contact Dr. Shawn Donkin in LILY 3-228 about the criteria that must be satisfied to become a successful candidate. Dr. Donkin serves as the Chair of the Dean's Scholar Program in Animal Sciences.

Departmental Honors Program

The Department of Animal Sciences Honors Program provides students with the opportunity to pursue individually designed curricula and to work with a faculty mentor to conduct supervised research or other creative activities. Participants in the Honors Program are expected to be stimulated, challenged, and rewarded for advanced academic experiences and intellectual activities. Following are the Departmental Honors Program operating policies:

- Students must have completed a minimum of 32 semester credits and have attained a minimum graduation index of 3.25 at the time of admission. Transfer students must complete a minimum of 16 credits at Purdue University before applying for admission. Individual departmental honors programs may establish higher criteria for admission.

- Students will apply for admission to the Honors Program through the Undergraduate Programs Committee in LILY 2-110. Before applying for admission, the student is expected

- To identify an Honors Program adviser who has agreed to serve as a mentor and to determine a mutually acceptable honors project. Admission is contingent upon the approval of the departmental honors committee and the College of Agriculture Director of Academic Programs.

- Within the first semester after admission to the Honors Program, the student is expected to develop a plan of study in cooperation with his or her mentor. Plans of study are to be submitted to the Undergraduate Programs Committee for approval. While in the Honors Program, students must achieve minimum 3.0 semester grade indexes. Participants who fail to meet the semester index requirement may continue in the Honors Program upon recommendation of the departmental honors committee and with the approval of the College of Agriculture Director of Academic Programs.

- Students in the Honors Program must complete a minimum of 30 credits in residence at the Purdue University West Lafayette campus.

- Under the direction of his or her Honors Program mentor, the student must complete an honors project of scholarly activity associated with research, teaching, extension, or another area acceptable to the departmental honors committee. A written summary report of the honors project must be submitted to the departmental honors committee for approval. At the discretion of the departmental honors committee, the student may also be required to conduct a seminar regarding his or her honors project.

- To achieve certification as a Departmental Honors Program graduate, the student must successfully complete the approved plan of study and submit a written honors project report that is approved by the departmental honors committee.

- Honors Program graduates will receive an appropriate certificate upon graduation, and the academic transcript will indicate successful completion of the Honors Program in the student's major program of study.

Faculty in Animal Sciences

Undergraduate counselors are in bold print.

Name & Position	Office	Telephone (765)	E-mail	Specialty
Layi Adeola, Professor	**LILY 2-117**	**494-4848**	**ladeola@purdue.edu**	**Nutrition, Swine**
Kolapo Ajuwon, Assistant Professor	**LILY 3-236**	**494-4822**	**kajuwon@purdue.edu**	**Adipose & Metabolic Biol.**
Rodney Allrich, Associate Professor	**LILY 2-112**	**494-4844**	**rallrich@purdue.edu**	**Reproductive Physiology, Dairy**
Todd Applegate, Professor	**LILY 2-114**	**496-7769**	**tapplegate@purdue.edu**	**Poultry Extension, Nutrition**
Christopher Bidwell, Professor	POUL 103A	494-8016	cbidwell@purdue.edu	Genetics, Molecular Biology
Colleen Brady, Courtesy Appointment	AGAD 225	494-8441	bradyc@purdue.edu	4-H Extension
Ryan Cabot, Associate Professor	**LILY 3-228**	**494-1746**	**rcabot@purdue.edu**	**Molecular Genetics/Reprod. Biology**
Heng-wei Cheng, Adjunct Assoc. Prof.	POUL 215	494-48022	hwcheng@purdue.edu	USDA Livestock Behavioral Research
Matt Claeys, Livestock Judging Coach, Extension Specialist	LILY 3-223	494-4834	mclaeys@purdue.edu	Livestock Management, Beef
Paul Collodi, Professor	SMTH 203A	494-9280	pcollodi@purdue.edu	Growth and Development
Candace Croney	POUL 207	496-6665	ccroney@purdue.edu	Behavior/Well-Being
Barry Delks, Career & Alumni Relations Coordinator	LILY 3-101	496-7234	delks@purdue.edu	Career Services
Mark Diekman, Professor	**LILY 2-111**	**494-4829**	**mdiekman@purdue.edu**	**Reproductive Physiology, Swine**
Shawn Donkin, Professor	LILY 3-228	494-4847	sdonkin@purdue.edu	Ruminant Nutrition and Physiology
Paul Ebner, Associate Professor	**LILY 3-230**	**494-4820**	**pebner@purdue.edu**	**Microbiology, Pre-harvest Food Safety**
Susan Eicher, Adjunct Assoc. Prof.	POUL 216A	496-3665	spruiett@purdue.edu	USDA-ARS, Animal Well-Being
Dale Forsyth, Associate Professor	**LILY 3-225**	**494-4841**	**dforsyth@purdue.edu**	**Nonruminant Nutrition, Swine**

Steve Hendress, Dairy Judging Coach	Dairy Unit ASREC	583-2526	hendress@purdue.edu	Dairy Management
Scotti Hester, Professor	**POUL 104**	**494-8019**	**phester@purdue.edu**	**Physiology, Poultry**
Shihuan Kuang, Assistant Professor	SMTH 174A	494-8283	skuang@purdue.edu	Muscle Biology
Donald Lay, Jr., Asst. Adjunct Professor	POUL 218	496-7750	layd@purdue.edu	USDA-ARS Animal Well-being
Ronald Lemenager, Professor	**LILY 3-108**	**494-4817**	**rpl@purdue.edu**	**Ruminant Nutrition and Management, Beef**
Amy Lossie, Assistant Professor	POUL 101B	496-6664	alossie@purdue.edu	Genomics
Zoltan Machaty, Associate Professor	**LILY 3-226**	**498-8008**	**zmachaty@purdue.edu**	**Transgenic Biology**
Jeremy Marchant-Forde, Asst. Adjunct Professor	POUL 219B	494-6358	merchant@purdue.edu	USDA-ARS-LBRU
Alan Mathew Professor, Head	LILY 3-114	494-4806	agmathew@purdue.edu	Intestinal Microbiology, Pre-Harvest Food Safety
Scott Mills, Associate Professor	**LILY 2-120**	**494-4845**	**smills@purdue.edu**	**Growth and Development**
William Muir, Professor	LILY 3-105	494-8032	bmuir@purdue.edu	Breeding and Genetics, Poultry and Aquaculture
Michael Neary, Extension Specialist	**LILY 2-232**	**494-4849**	**mneary@purdue.edu**	**Ruminant Nutrition, Sheep**
Tamilee Nennich, Assistant Professor	LILY 3-225	494-4823	tnennich@purdue.edu	Dairy Nutrition
John Patterson, Associate Professor	**POUL 115**	**494-4826**	**jpatters@purdue.edu**	**Ruminant Nutrition, Microbiology**
Karen Plaut Associate Dean, Research	AGAD 126	494-8362	kplaut@purdue.edu	Mammary Gland Biology
J. Scott Radcliffe, Associate Professor	**POUL 206**	**496-7718**	**jradclif@purdue.edu**	**Swine Nutrition**
Brian Richert, Associate Professor	LILY 3-233	494-4837	brichert@purdue.edu	Swine Nutrition and Management
Marcus Rostagno Asst. Adjunct Professor	POUL 219C	496-7946	rostagno@purdue.edu	USDA Research Animal Scientist
Mark Russell, Professor	**POUL 119**	**494-7677**	**mrussell@purdue.edu**	**Equine Nutrition & Management**

Allan Schinckel, Professor	LILY 3-231	494-4836	aschinck@purdue.edu	Breeding and Genetics, Swine
Jon Schoonmaker Assistant Professor	LILY 3-228	494-4860	jschoonm@purdue.edu	Ruminant Nutrition, Beef
Michael Schutz, Professor	**POUL 103A**	**494-9478**	**mschutz@purdue.edu**	**Breeding and Genetics, Dairy**
Terry Stewart, Professor	**LILY 3-234**	**494-0138**	**tstewart@purdue.edu**	**Breeding and Genetics, Swine and Beef**
Jolena Waddell, Lecturer	POUL 205	494-3276	jnwaddell@purdue.edu	Growth & Development, Muscle Biology, Meat Science, Molecular Genetics, Functional Genomics
Ashley Welchans	**LILY 3-107**	**494-4843**	**welchans@purdue.edu**	**Director of Academic Advising & Student Services**

Counseling in Animal Sciences

Quality, personable academic advising is a top priority in the Department of Animal Sciences and the College of Agriculture. The faculty-student relationship often extends beyond selection and scheduling and is enhanced by faculty familiarity with career opportunities. Some advisers maintain an open door policy allowing you to drop in anytime. Most, however, would prefer that you call ahead or e-mail them to set an appointment. This allows your adviser to arrange a time that is convenient for both of you and in addition, helps to ensure that you will not miss or have to wait for him/her.

Your adviser is one of the most important people in your academic program. He/she can help you with your progress and future after graduation. Get to know your adviser as well as other Animal Science faculty members during your academic career. This is important because your adviser and other faculty members are often requested to make recommendations for awards, scholarships and future employment as well as veterinary and graduate school admissions. Also, your adviser can keep you informed of various educational and work opportunities. A brief biography of active Animal Sciences counselors is found on subsequent pages.

Incoming freshmen or transfer students are assigned an advisor in the Department of Animal Sciences. Currently, 19 professors advise students. If you are uncertain who your advisor is, contact the Undergraduate Programs Office, Lilly Hall, Room 2-110, or call 765-494-4829. If you desire to change advisors within the Department, please contact the Undergraduate Programs Coordinator, Mark Diekman, in Lilly Hall, Room 2-111, or call 765-494-4829. If a student desires to change to another department in the College of Agriculture, complete the Program of Study Change Form and bring it to Mark Diekman for an exit signature. If a student desires to process a Change of Degree Objective (CODO) to transfer in or out of the College of Agriculture, the following procedures need to be followed:

A. CODO into the Department of Animal Sciences

1. File a request to CODO in the Office of the Registrar, Hovde Hall, Room 45 or online. Your CODO papers (two copies) are available the following day.

2. Obtain the signature on both CODO copies from the Dean of the school from which you are currently enrolled and wish to transfer.

3. Acquire signature to enter the College of Agriculture from the Associate Dean for Academic Programs in the College of Agriculture, Dr. Allan Goecker, Agriculture Administration Building, Room 121.

4. To enter the Department of Animal Sciences, bring CODO form to Undergraduate Programs Coordinator of Animal Sciences, Dr. Mark Diekman, Lilly Hall, Room 2-111. If needed, the schedule can be modified and a counselor in Department of Animal Sciences will be assigned.

B. CODO out of the Department of Animal Sciences

1. File a request to CODO in the Office of the Registrar, Hovde Hall, Room 45 or online. Your CODO papers (two copies) are available the following day.

2. To exit the College of Agriculture, acquire signature from the Associate Dean for Academic Programs in the College of Agriculture, Dr. Allan Goecker, Agriculture Administration Building, Room 121.

3. To enter your new school, obtain the signature of the Dean on your CODO papers. A new academic advisor will be assigned to you within your new major.

Responsibilities of the Student

1. Remain current with University, college, and departmental curricular requirements through materials available from the faculty advisers or departmental undergraduate coordinator of advising.

2. Keep informed of academic deadlines and changes in academic policies as printed in the General Information and University Regulations Booklets.

3. Consult with their adviser early in their academic career, during registration periods and at other times when it is needed.

Responsibilities of the Faculty Advisor

The faculty in the Department of Animal Sciences is strongly committed to quality academic advisement. All faculty advisers are expected to:

- be available for conferences during their posted office hours, or by appointment
- provide accurate information about academic regulations and procedures, course pre-requisites and graduation requirements
- assist students in planning their academic programs and developing career objectives
- discuss appropriate course choices in fulfilling curriculum requirements and the possible consequences of various alternative course choices
- inform their advisees when the advisee's proposed course selections conflict with University academic or curricular regulations
- assist advisees in dealing with University rules and regulations; for example, adds, drops, transfer credits, not-pass courses, etc.
- refer their advisees to appropriate University staff for special testing or counseling as needed
- assist their advisees in considering the appropriateness of academic adjustments where these become necessary in cases of serious illness or personal tragedy

Responsibilities of the Undergraduate Coordinator

The Department of Animal Sciences has an undergraduate coordinator, Dr. Mark A. Diekman, LILY 2-111, telephone: 765-494-4829, mdiekman@purdue.edu. The Undergraduate Programs secretary is Marlene Miller, LILY 2-109, telephone: 765-494-4863, marlenem@purdue.edu.

In the Department of Animal Sciences, the undergraduate coordinator is responsible for:

- Assigning and supervising faculty advisers.
- Providing up-to-date course curriculum information for advisers and students.
- Providing guidance to students desiring to transfer credits to their academic record at Purdue.
- Reassigning advisers per students' requests.
- Clarifying the process for students who desire to enroll in distance learning courses.
- Assisting any student who desires to CODO into Animal Sciences.
- Serving as the advisor for anyone obtaining a minor in Animal Sciences.
- Assisting faculty advisors and students in interpreting requirements for minors outside the College of Agriculture.
- Conducting junior and senior audits to ensure that students are fulfilling requirements for graduation.
- Certifying student’s eligibility for candidancy to graduate.
- Serving as the chair of the Undergraduate Programs Committee.
- Preparing ANSC document for Curriculum and Student Relations Committee (CSRC).
- Informing the faculty of all matters that affect ANSC undergraduate students.

Layi Adeola, Ph.D.
Professor
Animal Nutrition; Swine Nutrition

B.S., University of Ife, Nigeria; M.S. and Ph.D., University of Guelph, Canada

Post-doctoral training: University of Guelph, Canada

Sabbatical: University of Saskatchewan, Canada

Email: ladeola@purdue.edu Phone: (765) 494-4848 Office: LILY 2-117

Teaching Assignments

- ANSC 52200 - Monogastric Nutrition
- ANSC 62000 - Proteins and Amino Acids in Nutrition

Research Activities

My research program emphasizes amino acid nutrition of nonruminant animal species and utilization of plant minerals by nonruminants. The areas of emphasis include amino acid availability and amino acid-energy relationships, efficiency of amino acid utilization, nutritional evaluation of non-traditional feedstuffs, and mineral metabolism and excretion in pigs. The total program is aimed at improving the efficiency of lean meat production in nonruminant animals and minimizing the flow of potentially detrimental levels of nutrients through animal waste to the environment.

Counseling Philosophy

Enable students to attain their personal and academic potential and become productive members of society.

Hobbies/Interests

Watching sports - basketball, football, soccer, and tennis

Kolapo Ajuwon, Ph.D.
Assistant Professor
Biology of Obesity

B.S., Obafemi Awolowo University, Nigeria; M.S. and Ph.D., Purdue University

Post-doctoral training: Purdue University
Previous Employment: Southern Illinois University

Email: kajuwon@purdue.edu Phone: (765) 494-4822 Office: LILY 3-236

Teaching Assignments

- ANSC 53700 – Adipocyte Biology

Research Activities

The focus of the research in my laboratory is to determine factors that mediate the insulin resistant phenotype that occurs in the adipose tissue as it transitions from an insulin sensitive tissue to the insulin resistant state in obesity, and how nutritional manipulation can be used to prevent this transformation. Specifically, we are interested in characterizing endogenous factors that mediate adipose tissue inflammation. Current areas that are being investigated include the role of extracellular matrix factors, fatty acids and lipoproteins in the inflammatory process in adipose tissue. Obesity leads to extensive adipose tissue remodeling with significant alterations in the extracellular matrix (ECM) architecture. Accompanying this process is the increase in the levels of certain matrix degrading proteins such as matrix metalloproteinase (MMP) 2, 3 and 12 and extracellular proteins such as collagen I, III, VI, and biglycan. We are currently investigating the interaction of these ECM proteins with the adipocyte to characterize their role in obesity-induced inflammation. Interestingly, adipose tissue remodeling in obesity is suppressed by certain polyunsaturated fatty acids, but the mechanisms involved are unclear. Therefore, one major area of our research is to define the mechanisms that govern the antiinflammatory actions of polyunsaturated fatty acids in adipose tissue. We employ cell biology, molecular biology techniques and whole animal approaches in the conduct of these investigations and our findings have practical relevance to solving obesity, type 2 diabetes and coronary artery disease problems in humans as well as optimizing animal growth.

Counseling Philosophy

Assist students to make the best class selection that will prepare them to attain their future goals.

Hobbies/Interests

Biking and car racing

Rodney D. Allrich, Ph. D.
Associate Professor
Reproductive Physiology

B.S. and M.S., North Dakota State University; Ph.D., University of Nebraska

Post-doctoral Training: Purdue University

Sabbatical: Indiana University School of Medicine, Department of Microbiology and Immunology.

Email: rallrich@purdue.edu Phone: (765) 494-4844 Office: LILY 2-112

Teaching Assignments

- ANSC 10600 - Biology of Companion Animals
- ANSC 33200 - Environmental Physiology of Domestic Animals
- ANSC 34500 – Animal Health Management
- ANSC 44600 – Companion Animal Management

Counseling Philosophy

Help students reach their full potential.

Hobbies/Interests

Reading, foreign films, pets, all outdoor activities and learning how to learn

Todd J. Applegate, Ph.D.
Professor
Extension Poultry Specialist

B.S. and M.S., Iowa State University; Ph.D., The Ohio State University

Post-doctoral training: University of Maryland, College Park

Email: applegt@purdue.edu Phone: (765) 496-7769 Office: LILY 2-114

Research and Extension Activities

My program centers around lessening the impact of the poultry industry on the environment, through dietary and management strategies. Key extension audiences include the livestock and poultry industries as well as the regulatory community. Our areas of emphasis include improving the digestibility and metabolism of key minerals (calcium, phosphorus, copper, and zinc) to lessen the impact of manure on water quality. Other work has focused on reductions of air emissions through improvements in diet formulation, ingredient selection and further understanding of endogenous losses in the gastro-intestinal tract. As the gastro-intestinal tract is one of the primary barriers, nutrients in the digestive tract are drivers to intestinal turnover and overall intestinal health. A portion of our research is focusing on how to maximize both nutrient utilization and intestinal barrier function.

Counseling Philosophy

My counseling role is to help students make informed decisions that will help them build a solid foundation for a successful career.

Hobbies/Interests

Family, hiking, running, gardening and landscaping

Christopher A. Bidwell, Ph.D.
Professor
Molecular Genetics

B.S. and M.S., Purdue University; Ph.D., University of California, Davis

Sabbatical: CSIRO Livestock Industries and Sheep Genomics, Australia

Email: cbidwell@purdue.edu Phone: (765) 494-8016 Office: POUL 117

Teaching

- ANSC 51400 - Animal Biotechnology

Research Interests

Dr. Bidwell's research program is focused on studying the regulation of skeletal muscle growth using the callipyge trait in sheep. Callipyge sheep have altered carcass composition with extreme muscle hypertrophy of the loin and hindquarters and reduced fat. The callipyge trait is caused by a regulatory mutation in an imprinted gene cluster on sheep chromosome 18. The lab is using molecular genetics and functional genomics to study the effect of the mutation on the expression of the surrounding genes and the mechanism of muscle hypertrophy.

Colleen Brady, Ph.D.
Associate Professor, Courtesy Appt.
Horses and Companion Animals

B.S., M.S., and Ph.D., Michigan State University

Email: bradyc@purdue.edu Phone: (765) 494-8441 Office: AGAD 225

Research Activities

The focus of my research program is two-fold; the impact of animals on learning in children, and assessment of the needs of volunteers in the Indiana 4-H program relative to subject matter knowledge.

Extension Activities

Responsible for youth programming in horse and companion animal program areas. These responsibilities include overseeing of the Indiana State 4-H programs in these areas, as well as collaborating with participants in the Indiana FFA program. More than 35,000 youth in Indiana are involved in educational programming through the Indiana Horse Council, as well as county extension offices.

Ryan Cabot, Ph.D.
Associate Professor
Reproductive Physiology and Molecular Biology

B.S. and Ph.D., University of Missouri-Columbia

Post-doctoral training: Adolf-Butenandt-Institute at the Ludwig Maximilians University, Munich, Germany

Email: rcabot@purdue.edu Phone: (765) 494-1746 Office: LILY 3-228

Teaching Activities

- ANSC 33300 – Reproductive Physiology

Research and Extension Activities

The research conducted in our laboratory is focused on identifying the cellular factors that direct the process of nuclear reprogramming following nuclear transfer. When animal cloning is performed by using the nuclear transfer procedure, the DNA found in a mammalian oocyte is removed and replaced by the nuclear DNA found in a donor cell. For an embryo created through the use of nuclear transfer to result in the birth of a healthy, live-born animal, the donor cell's DNA must change its behavior (i.e., its transcription profile) and exhibit the behavior of a nucleus found in an early embryo. Nuclear reprogramming refers to the changes that occur to a donor cell's nuclear DNA following transfer into an oocyte's cytoplasm that ultimately cause a change in the transcription profile (or developmental program) of the nuclear DNA in the cloned embryo, allowing development to proceed.

Current projects in the lab are aimed at examining the role ATP-dependent chromatin remodeling machines play in the process of nuclear reprogramming following nuclear transfer and attempting to develop a reporter system with which we can evaluate nuclear reprogramming in cloned pig embryos.

Counseling Philosophy

As a counselor, I encourage all students to challenge themselves academically and strive for excellence.

Heng-wei Cheng, Ph.D., M.D.
Adjunct Associate Professor
Animal Well-being

M.D., Medical School, Dongnan University, China; M.S., Medial School, Harbin University, China; Ph.D., Medical School, Wayne State University, USA

Post-doctoral training: University of Southern California, CA, USA

Email: hwcheng@purdue.edu Phone: (765) 494-8022 Office: POUL 216

Research Activities

The goal of my research is to study the cellular and molecular mechanisms of stress response in poultry, swine, and dairy cows. The areas of emphasis include genetic variation in stress-induced neuronal plasticity, hormonal and immunological characteristics, and behavioral adaptation. The aims are: 1) to develop neuroanatomical and neurophysiological quantitative indicators of animal well-being and 2) to develop alternatives of husbandry managements to improve animal welfare and production.

Counseling Philosophy

Assist students in identifying their personal potential in sciences, and encourage students to develop their academic career and become active members of various societies.

Hobbies/Interests

Gardening, traveling, and fishing

Matthew C. Claeys
Livestock Judging Coach, Extension Specialist
Beef Cattle

B.S., University of Illinois; M.S., Auburn University

Email: mclaeys@purdue.edu Phone: (765) 494-4834 Office: LILY 3-223

Teaching Assignments

- ANSC 37000 – Livestock Evaluation
- ANSC 47000 – Livestock Judging

Extension Activities

- Extension appointment involves production and management factors that ultimately affect beef quality. Provide leadership and collaborative planning for the direction of the beef extension programs for the Purdue University Beef Team. The two programs of major responsibility are the IQ+Beef and Farm Fresh Beef.
- National Animal Identification and premise identification program.
- Web-based programs for quality assurance for beef and small ruminants.
- Distiller's Grain storage research initiated in conjunction with Animal Sciences and Agricultural Engineering professors.
- Served as co-author and Genetics Action Team Chairman for the Five State Beef Initiative (FSBI).
- Other extension programs include the Animal Sciences Workshop for Youth, Hoosier Beef Congress, Hoosier Carcass Contest, ILBA and support and leadership for county educators and agriculture teachers.

Paul R. Collodi, Ph.D.
Professor
Growth and Development

B.S., Mount Union College; M.S., University of Alaska; Ph.D., University of Pittsburgh

Post-doctoral training: Oregon State University

Email: pcollodi@ansc.purdue.edu Phone: (765) 494-9280 Office: SMTH 203A

Teaching Assignment

- ANSC 55500 - Growth and Development

Research Activities

The research in our laboratory involves the use of the zebrafish as a model to study embryonic development. Favorable characteristics of the zebrafish such as transparent embryos that are available daily and that complete embryonic development rapidly outside of the mother make this organism an ideal experimental model for these studies. The focus of our lab is to study how proteins such as peptide growth factors regulate cell differentiation in the zebrafish embryo. Some of the techniques that we use to study this problem include the production of transgenic fish and the study of embryo cells in culture. One of the goals or our work is to understand the basic mechanisms of vertebrate development but the information gained from this research can also be applied to improve fish growth and survival and enhance aquaculture production.

Counseling Philosophy

My role as counselor is to provide the students with the information necessary for them to make appropriate decisions as they work to complete their degree. My goal is to give the students the opportunity to become self-reliant and confident in their decisions; traits that will be valuable throughout their careers.

Hobbies/Interests

Gardening, reading and running

Candace C. Croney, Ph.D.
Associate Professor

B.S., Cook College at Rutgers; M.S. and Ph.D., State University of New Jersey

Email: ccroney@purdue.edu Phone: (765) 496-6665 Office: POUL 207

Research Activities

My research interests include the interactions between animal behavior, cognition, and well-being; the effects of rearing environments and enrichment on animal behavior and welfare; the ethical implications of animal care and use decisions; and public perceptions of animal agriculture.

Barry Delks
Coordinator of Career Services & Alumni Relations

B.S. and M.S., Purdue University

Email: delks@purdue.edu Phone: (765) 496-7234 Office: LILY 3-101

Teaching Assignments

- ANSC 18100 – Orientation to Animal Sciences
- ANSC 28100 – Career Planning in Animal Sciences
- ANSC 48100 – Contemporary Issues in Animal Sciences

Counseling Philosophy

Encourage students to identify their strengths, interest, goals, and values that will lead to a successful career path.

Hobbies/Interests

Hiking, biking, watching sons play sports and church

Mark A. Diekman, Ph.D.
Professor
Reproductive Physiology, Swine

A.S. Vincennes University; B.S. and M.S., Purdue University; Ph.D., Colorado State University

Post-doctoral Training: Iowa State University

Email: mdiekman@purdue.edu Phone: (765) 494-4829 Office: LILY 2-111

Teaching Assignments

- AGR 11400 – Orientation to Academic Programs in Animal Sciences
- ANSC 33300 - Physiology of Reproduction
- ANSC 33400 - Physiology of Reproduction Lab

Research Activities

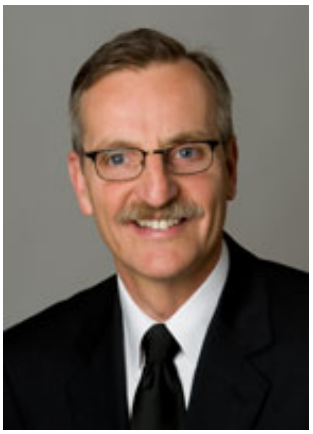
My laboratory utilizes a balanced approach of applied and basic research techniques to elucidate underlying physiological mechanisms associated with reproductive processes in farm animals with a particular emphasis on attainment of puberty in swine. Experiments are being conducted to determine: (1) the mechanisms whereby swine reared in environmentally controlled buildings attain puberty, (2) the importance of air quality and photoperiod in altering reproduction in swine, and (3) the mechanisms whereby the mycotoxin zearalenone disrupts early pregnancy in swine.

Counseling Philosophy

Of all the jobs, duties and functions that a faculty member has in their respective department in the School of Agriculture, counseling undergraduate students is perhaps the most rewarding and most challenging. For an advisor to effectively counsel students, the counselor must be apprised of the rules and regulations of the curriculum, be accountable for actions taken for the counselee and be accessible for interactions with their counselees.

Hobbies/Interests

Golf, softball, basketball, umpiring and house repairs



Shawn S. Donkin, Ph.D.
Professor
Ruminant Nutrition and Physiology

B.S., McGill University; M.S., The Pennsylvania State University; Ph.D., University of Wisconsin-Madison

Post-doctoral Training: The Pennsylvania State University; University of Wisconsin-Madison

Sabbatical: Liggins Institution, University of Auckland, New Zealand

Email: sdonkin@purdue.edu Phone: (765) 494-4847 Office: LILY 3-228

Teaching Assignments

- ANSC 62600 – Nutritional Biochemistry and Physiology II

Research Activities

The goal or research conducted in my laboratory is to determine factors which constrain the productive efficiency of livestock at the level of nutrient metabolism and to devise methods to circumvent such factors. In essence, we are seeking ways to produce milk and/or meat with fewer inputs. The liver, because of its anatomical positioning, exerts a tremendous influence on the profile and supply of absorbed nutrients which may be used for productive processes. Nutrients must first pass through the liver before they reach tissues where they are used for milk production or muscle synthesis. The degree of nutrient breakdown, or catabolism, by liver potentially limits energy and/or amino acids for animal production. Conversely, adequate synthesis of glucose, proteins, and transformation of other substances by liver is necessary to support efficient production of animal products. Our research approach integrates cell biology, molecular biology techniques and whole animal approaches to understand the processes which determine the fate of metabolizable nutrients with a goal of devising practices/technologoies to enhance the efficiency of animal growth and/or milk production. Emphasis is placed on control of liver function and nutrient-gene interactions in late gestational and lactating dairy cattle and replacement heifers.

Counseling Philosophy

Help students make informed choices regarding courses, internships, and extracurricular activities to enhance their intellectual growth and influence their career opportunities in a positive manner.

Hobbies/Interests

Furniture refinishing, carpentry, biking, roller blading, music, coaching soccer, playing with kids and cows

Paul D. Ebner, Ph.D.
Associate Professor
Microbiology

B.A., Kalamazoo College; M.S. and Ph.D., The University of Tennessee

Email: pebner@purdue.edu Phone: (765) 494-4820 Office: LILY 3-230

Research Activities

- Identification and characterization of class 1 integrons in bacteria isolated from livestock.
- The IR4 regulatory protein of EHV interacts with cellular TATA-box binding protein.
- Genetic and phenotypic complexity of EHV defective interfering particles.
- Hybrid proteins unique to EHV defective interfering particles mediate interference with standard virus replication.

Extension Activities

- CAFOs and public health

Susan D. Eicher, Ph.D.
USDA-ARS
Adjunct Associate Professor

B.A and M.S.E., University of Kansas; M.S. and Ph.D., Kansas State University

Post-doctoral training: Kansas State University

Email: spruiett@purdue.edu Phone: (765) 496-3665 Office: POUL 219

Research Activities

Food animal production is at a point that scientific evidence is needed to make management decisions to address animal well-being concerns and pending legislation. The food industries that are answering the animal rights concerns are asking for scientific evidence to support their demands made of producers. This provides the opportunity for the U.S. to become a world leader in establishing animal husbandry legislation based on scientific evidence. The totality of my knowledge, leadership, research program, and communication abilities have been instrumental in helping determine future directions of animal well-being in the U.S. and Canada. The overall goal of my research program (100% research assignment in USDA-ARS) is to utilize immunological, behavioral, and physiological measures to define stress is swine, poultry, and cattle, and to use those measures to determine the most "welfare friendly" environments and management practices. Present research interests include methods to reduce the incidence of dairy lameness, methods to enhance calf survival and health after routine transportation, the benefits of including a rest stop for pigs transported 16 hours, and immunomodulating effects of yeast cell-wall beta-glucans and ascorbic acid fed to calves and pigs. My research program goals have been accomplished through collaborative efforts with other USDA-ARS scientist, Purdue faculty, and faculty from other universities across the nation. Results of this research have been disseminated through Purdue extension personnel, peer reviewed journals, national meetings, personal communications with other scientists interested in this research area, and postings on the Livestock Behavior Research Unit's Web Page.

Hobbies/Interests

Gardening, music, and traveling

Dale M. Forsyth, Ph.D.
Associate Professor
Nonruminant Nutrition, Swine

B.S., Iowa State University; Ph.D., Cornell University

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Teaching Assignments

- ANSC 22100 - Principles of Animal Nutrition
- ANSC 22100 – Principles of Animal Nutrition (online)

Extension Activities

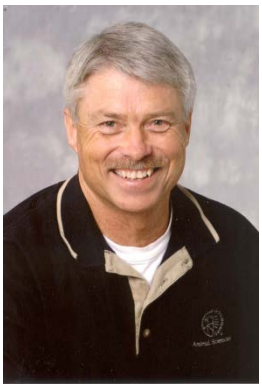
One of the most significant developments of the last half of the current century is likely to be recorded as development of communications via the World Wide Web, likened to the invention of the printing press, radio and television as communication mediums. We are often cited as being "in the information age," and Purdue University is in the information business, through teaching, extension, and discovery of new information by research. As the Departmental Website Coordinator and Webmaster, the following computer programs have been developed: PUBEEF, PUHORSE, PUDAIRY, PUSHEEP, PUSWINE, SUBVALUE, TDN2NETE, and FATVALUE.

Counseling Philosophy

My goal is to assist students to attain their own educational objectives. I attempt to advise students so that they have the greatest chance for success. That includes keeping workloads within reason, planning for course prerequisites, and meeting requirements. I encourage advisees to contact me at any time I can be helpful; I may not always have the answer but can help find it.

Hobbies/Interests

Handball, squash, biking, computer interests



Steven A. Hendress
Instructor
Asst. Mgr. Dairy Research Farm

B.S., Purdue University

Email: hendress@purdue.edu Phone: (765) 583-2526 Office: Dairy Research Farm

Teaching Assignments

- ANSC 37100 – Dairy Cattle Evaluation
- ANSC 47100 – Dairy Cattle Judging

Department/Research Farm Responsibilities

I coach the Competitive Dairy Judging Team that competes at several national collegiate competitions each year. I provide educational dairy judging clinics for 4-H/FFA members during the summer.

At the research farm, my duties include teaching labs and work day visits for ANSC 102, 245, 303, and 444 students and general farm tours for Animal Sciences, Food Science, Vet School, local schools and scheduled farm visitors. I am also responsible for the genetic selection, breeding and improvement of the Holstein and Brown Swiss cattle. I work with the vet school and monitor the reproductive health of the herd with regular checks. I also screen requests for animals that are provided for Tot's Day, Ag Day, Boilermaker Barnyard, judging contests, and the State Fair.

Guidance Philosophy

I coach the competitive Dairy Judging Team at the national level. They have the opportunity to experience excellent farms and cattle, make valuable contacts within the industry while developing personal skills in decision making and oral communication. I am an advisor for the Purdue Dairy Club. I help direct and support their activities for educational enhancement and fund raising. Supporting this very active group is fun and exciting during their educational trips, judging invitational, and the Boilermaker Heifer Sale fund raiser. Students are given the opportunity to function as a club in organizing, directing, supporting and celebrating their success.

Hobbies/Interests

Judging dairy cattle shows at the county, district, state, national and international levels; exhibiting Brown Swiss Cattle; and following my daughter's Kent State University gymnastics team.

Patricia (Scotti) Y. Hester, Ph.D.
Professor
Physiology, Poultry

B.S. and Ph.D., North Carolina State University

Sabbaticals: Cuddy International, Canada; University of Guelph, Canada

Email: phester@purdue.edu Phone: (765) 494-8019 Office: POUL 104

Teaching Assignments

- ANSC 44500 - Commercial Poultry Management
- ANSC 53500/BMS 52800 - Avian Physiology

Research Activities

Our research program focuses on the effect of the environment on poultry performance and physiology, which includes stress, disease, and nutritional interactions. As examples, we have identified lighting programs and nutritional regimens that turkey producers may implement into their production systems to reduce lameness among toms. Another environmental factor that our laboratory is currently studying is microgravity. Specifically, we have conducted flight experiments on the shuttle and Space Station MIR using chick and quail embryos. We have observed premature death of avian embryos exposed to microgravity and are planning future experiments to determine if microgravity is the cause. A long-term goal of our research program is to determine if a complete life cycle (egg to egg) can be achieved in the space environment.

Counseling Philosophy

A counselor should be readily accessible to the students, be a good listener, provide advice when needed (career paths, resumes, and applications), assist with internships and job placement.

Hobbies/Interests

Reading and sports

Shihuan Kuang, Ph.D.
Assistant Professor
Developmental Biology

B.Sc., Nanchang University, Nanchang, China; M.Sc., Institute of Oceanology, Chinese Academy of Sciences, Qingdao, China; Ph.D., University of Alberta, Edmonton, Canada

Post-doctoral Training: Washington University School of Medicine, St. Louis; Ottawa Health Research Institute, Canada

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Teaching Assignments

- ANSC 59500 – Stem Cell Biology

Research Activities

Muscle development and regeneration: Skeletal muscles have a remarkable regenerative capacity due to myogenic differentiation of satellite cells. We have recently shown that the satellite cell niche contains heterogeneous subpopulations of committed myogenic progenitors and non-committed stem cells. This hierarchical composition of readily differentiating progenitors and self-renewable stem cells assures the extraordinary regenerative capacity of skeletal muscles while maintaining a sustainable pool of satellite cells. One focus of my lab is to explore the signaling mechanisms that differentially regulate these subpopulations of satellite cells and how such mechanisms are employed in muscle regeneration.

Adult stem cell biology: A balance between self-renewal and differentiation is crucial for stem cell maintenance and tissue homeostasis. However, mechanisms governing stem cell fate are poorly understood. One goal of our research is to address this question using muscle satellite cells as a model system. Several recent studies have revealed an important role of asymmetric division in satellite cell self-renewal. We are particularly interested in the mechanisms involved in the asymmetric division of muscle satellite cells.

Neuromuscular diseases: Many degenerative neuromuscular diseases are due to defective motor neurons and/or muscle fibers. One potential treatment of these pathological conditions is stem cell-based therapies. Currently, several limitations, including poor survival, poor migration and host rejection, are associated the use of satellite cells and other muscle stem cells in the treatment of muscular diseases. We are interested in the identification, isolation and manipulation of highly efficient myogenic stem cells for successful stem cell-based therapies to treat neuromuscular diseases.

Donald C. Lay, Jr., Ph.D.
Research Leader & Location Coordinator
Livestock Behavior Research Unit, ARS-USDA
Assistant Adjunct Professor

B.S., Virginia Polytechnic Institute, M.S. and Ph.D., Texas A&M University

Email: layd@purdue.edu Phone: (765) 496-7750 Office: POUL 218

Research Goal and Philosophy

The ultimate goal of my research program is to discover information that will allow for both optimum animal welfare and animal production. Society, animal researchers, and livestock producers are concerned about the stress to which animals are subjected, and they all wish to have this stress minimized. Yet we still struggle to define stress and interpret animal behavior in order to assess the state of our livestock. Decreasing animal stress and increasing animal welfare is a noble goal and a surmountable challenge. My research program is designed to meet this challenge and to produce a lasting contribution to both science and society.

Hobbies/Interests

All animals, both domestic and wild, biking, hiking, backpacking, diving, travel, and gardening

Ronald P. Lemenager, Ph.D.
Professor
Ruminant Nutrition and Management, Beef

B.S., University of Illinois; M.S. and Ph.D., Oklahoma State University

Email: rpl@purdue.edu Phone: (765) 494-4817 Office: LILY 3-108

Teaching Assignments

- ANSC 39300 – Animal Industry Travel Course
- ANSC 44100 – Beef Management

Research Activities

Research has been focused on determining the protein (MP) and net energy requirements (NE Δ) for weight and body condition score change in beef cows to optimize reproductive performance and maximize profit. Equations have been developed that allow producers to program the feeding of both energy and protein to primiparous and mature cows to obtain a target body condition score. Future research will focus on nutritional and management factors controlling and affecting marbling and tenderness of the end product.

Extension Activities

- Development of a regionally coordinated (IL, IN, KY, MI, OH) beef production and marketing system that will consistently meet consumer expectations for high quality beef and increase producer profits.

- IQ+Beef is a preconditioning/quality assurance program that will add value to feeder calves in the state. It has requirements for vaccinations, castration, dehorning, weaning and deworming before calves can be IQ+ certified. The program involves producer and veterinarian certification, verification of the process and a phased-in genetics requirement.

Counseling Philosophy

To help students become prepared for a successful career in animal agriculture.

Hobbies/Interests

Being with family and friends, and raising beef cattle

Amy C. Lossie, Ph.D.
Assistant Professor
Genomics

B.S., University of Michigan; Ph.D., University of Florida

Email: alossie@purdue.edu Phone: (765) 496-6664 Office: POUL 101B

Teaching Assignments

- ANSC 68100 – Graduate Student Seminar

Research Activities

Most genes behave according to Mendelian rules of inheritance – both alleles are either active or silenced in any given cell. However, some genes are only active on one of the parental alleles. This phenomenon, called genomic imprinting, plays a major role in embryonic development. Defects in DNA methylation, a key component of imprinting, cause severe birth defects. The goal of my postdoctoral research was to identify genes involved in DNA methylation, and use the mouse to elucidate the biological function. I analyzed DNA methylation imprints in 50 mouse lines with embryonic abnoralities. I identified two early embryonic mutants that lacked a DNA methylation imprint at *U2af1-rs1* (Lossie and Justice, in prep.), and was the first to use imprinted DNA methylation to detect new genes involved in epigenetic gene regulation.

Zoltan Machaty, Ph.D.
Associate Professor
Developmental Biology & Reproductive Physiology

B.S., University of Debrecen; M.S. and Ph.D., Szent Istvan University, Hungary

Post-doctoral Training: University of Missouri-Columbia

Past Employment: University of Missouri-Columbia; Alexion Pharmaceuticals, Inc.

Email: zmachaty@purdue.edu Phone: (765) 494-8008 Office: LILY 3-233

Teaching Assignments

- ANSC 53400 - Advanced Reproductive Physiology

Research Activities

The primary objective of my research program is to characterize cellular and molecular mechanisms that control early embryonic development. Our main effort in the laboratory has been directed towards understanding the signal transduction pathway that is involved in oocyte activation. Characterization of the pathway that plays a critical role in the initiation of embryonic development will allow us to manipulate the process and also, to develop effective methods for parthenogenetic activation of oocytes. This would have implications in assisted reproductive technologies, primarily in nuclear transfer. The ultimate goal of our research is to improve embryonic development in order to generate animals of special value for agricultural and biomedical purposes.

Counseling Philosophy

As a counselor, I strive to help students achieve their academic goals and investigate career opportunities.

Hobbies/Interests

Hiking, reading, photography

Jeremy Marchant-Forde, Ph.D.
Adjunct Assistant Professor
Applied Ethology

B.S., University of Bristol, U.K.; Ph.D., University of Cambridge, U.K.

Post-doctoral training: University of Cambridge, U.K.

Email: marchant@purdue.edu Phone: (765) 494-6358 Office: POUL 219

Research Activities

Current commercial husbandry systems present many challenges to both the animals and the stockperson. Increasing intensification and scale of production has lead to welfare concerns about the way we raise animals for food. Close confinement and barren environments are perceived negatively by the consumer and demands are being made for alternative systems that safeguard the welfare of the animals yet remain commercially-viable for the farmer. The ultimate goals of my research are to develop and refine methods of welfare assessment and to produce real science-based solutions to problems encountered in the development of alternative farming systems. I work predominantly with swine and dairy cattle and have interests in maternal and social behavior, vocal communication, housing system design and human-animal interactions.

Counseling Philosophy

To build a student's confidence in their own abilities, to foster critical thinking and problem solving and offer support throughout their broader university experience.

Hobbies/Interests

Spending time with my family, following England's rugby, cricket and soccer teams, scuba diving and hiking.

Alan G. Mathew, Ph.D.
Head and Professor of Animal Sciences
Intestinal Microbiology, Pre-Harvest Food Safety

B.S., M.S. and Ph.D., Purdue University

Post-doctoral training: Purdue University
Previous Employment: University of Tennessee

Email: agmathew@purdue.edu Phone: (765) 494-4806 Office: LILY 3-114

Research Activities

A number of bacteria with the potential to cause foodborne illness can live in livestock without causing harm to their animal hosts, thus going undetected in livestock systems. Pre-harvest food safety is thus the science of finding ways to reduce the occurrence of such potential pathogens in livestock systems, thus lowering the risk of contaminating agricultural products and foods. Among the most common foodborne pathogens are various types of *Salmonella*, and *E. coli*, including types O157:H7, and non-O157 shiga-toxin producing *E. coli* (STEC) strains, including O91:H21, which sometimes reside in cattle and other ruminant animals. Additional health risks may be posed if these organsims carry genes or attributes that increase their resistance to human antibiotics.

Our research focuses on identifying husbandry practices, nutritional programs, and/or intervention strategies to reduce numbers of foodborne pathogens in livestock systems, including swine and cattle. Additionally, we are conducting studies to characterize bacterial genetic elements that code for antibiotic resistance, including "integrons" which are large genetic sequences that simultaneously code for resistance to multiple antibiotics, and additionally self-promote their transfer to other bacteria, including to similar or even unrelated microbial species, thus spreading antibiotic resistance to a larger pool of microogranisms.

Scott E. Mills, Ph.D.
Associate Professor
Growth and Development

B.S., College of Charleston; M.S., Clemson University; Ph.D., Iowa State University

Post-doctoral Training: University of Texas Health Science Center, Dallas

Sabbatical: Hannah Research Institute, Scotland

Email: smills@purdue.edu Phone: (765) 494-4845 Office: LILY 2-120

Teaching Assignment

- ANSC 23000 - Physiology of Domestic Animals
- ANSC 29500 – Anatomy/Physiology Honors Lab
- ANSC 62600 - Nutritional Biochemistry and Physiology II

Research Activities

Our interest is on the cellular signals regulating the growth of adipose and muscle tissue for the purpose of identifying tools to modify body composition for productive purposes. We also have interest in fat and meat quality with the goal of improving product quality in lean pigs. Much of our work has focused on how endocrine signals may be modified between adipose and muscle tissue to partition nutrients toward muscle growth and away from adipose growth. In recent years, we have embarked upon cloning the family of porcine beta-adrenergic receptors in order to dissect the mechanisms responsible for growth modification and to develop pig-specific agonist.

Counseling Philosophy

Assist students will class selection and extracurricular activities that will prepare each for future challenges.

Hobbies/Interests

Outdoor activities, cycling and golf

Michael K. Neary, Ph.D.
Extension Sheep Specialist
Ruminant Nutrition, Sheep

B.S., University of Nebraska; M.S. and Ph.D., Mississippi State University

Email: mneary@purdue.edu Phone: (765) 494-4849 Office: LILY 2-121

Teaching Assignments
- ANSC 24500 - Applied Animal Management
- ANSC 44200 - Sheep Management

Research Activities
Lamb Carcass Composition Research
- Evaluation of electronic technology to assess carcass composition.
- Carcass component growth as influenced by nutrition and genotype.

Grazing Systems Research
- Sheep and agroforestry grazing systems

Extension Activities
- Organize workshops and meetings associated with sheep production.
- Speak at educational meetings for both youth and adults interested in the sheep industry.
- Prepare written materials (popular press and extension publications) dealing with sheep production.
- Coordinate the sheep@purdue website.
- Work with the Indiana Junior Sheep Association.
- Coordinate sheep performance testing programs.
- Staff advisor for the Block and Bridle Club

Counseling Philosophy
Students are my first priority in both teaching and extension.

Hobbies/Interests
Help raise two children

Tamilee D. Nennich, Ph.D.
Assistant Professor
Dairy Cattle Nutrition and Nutrient Management

B.S., University of Minnesota, Crookston; M.S., University of Minnesota; Ph.D., Washington State University

Email: tnennich@purdue.edu Phone: (765) 494-4823 Office: LILY 3-225

Extension Activities

My extension activities focus on improving the environmental sustainability of dairy cattle operations through improved management strategies.

Extension activities include:
- Regional Dairy Meetings
- Tri-State Dairy Nutrition Conference
- Indiana Young Dairy Producers

Research Activities

The goals of my research are to evaluate management strategies that increase the utilization of nutrients, especially nitrogen, phosphorus, and potassium, and reduce the amount of nutrients imported to the farm while maintaining or improving animal health and performance. Current research projects are focusing on the evaluation of co-product feeds in the diets of dairy heifers and evaluating water usage and nutrient flows on dairy operations.

Hobbies/Interests

Traveling, ice skating, and inline skating

John A. Patterson, Ph.D.
Associate Professor
Ruminant Nutrition, Microbiology

B.S., Clemson University; M.S., University of Florida; Ph.D., University of Illinois

Industry Experience: Smith Kline Corporation

Email: jpatters@purdue.edu Phone: (765) 494-4826 Office: POUL 115

Teaching Assignments

- ANSC 53600 – Digestive Systems in Health and Physiology
- ANSC 69000/FS 69000 – Special Topics in Food Science

Research Activities

There are over 10 billion microbial cells per gram of intestinal contents in most warm-blooded animals, more than the total number of animal cells. These microorganisms have important impacts of food digestion and utilization, production of beneficial and toxic compound, animal health and human food safety. My research addresses microbial interactions and how changes in microbial populations and activities influence the aforementioned aspects of animal production. Current studies address selectively enriching for beneficial bacterial populations (lactobacilli and bifidobacteria) which in turn suppress pathogenic bacteria and production of odors.

Counseling Philosophy

Students are entering a critical point of their life and it is my role as counselor to help each individual develop and achieve their goals. Students should broaden both social and academic horizons while also preparing for the career of their choosing.

Hobbies/Interests

Helping and watching my children grow, family activities, and hiking

Karen I. Plaut, Ph.D.
Professor
Mammary Biology

B.S., University of Vermont; M.S., Penn State University; Ph.D., Cornell University

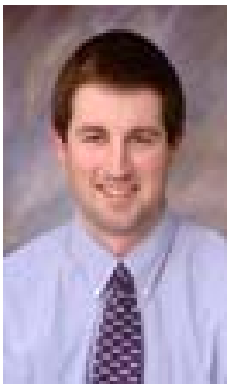
Post-doctoral training: National Cancer Institute at NIH

Sabbatical: NASA Biological Research Project

Email: kplaut@purdue.edu Phone: (765) 494-8362 Office: AGAD 126

Research Activities

The overall objective of our lab is to understand how cells, growth factors, hormones, organ systems and the environment interact to regulate mammary development and lactation. Presently our research is focused in two main areas: understanding the role of epithelial and stromal interactions in mammary development and neoplasia; and understanding how changes in physiology and metabolism are coordinated across multiple tissues during the periparturient period to prepare for and maintain lactation.



John S. Radcliffe, Ph.D.
Associate Professor
Swine

B.S., M.S.,and Ph.D., Virginia Polytechnic Institute and State University

Previous Employment: Virginia Tech University

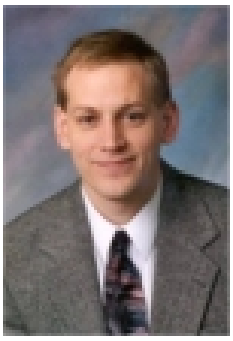
Email: jradclif@purdue.edu Phone: (765) 496-7718 Office: POUL 103

Teaching Assignments

- ANSC 32400 – Applied Animal Nutrition

Research Activities

The primary goal of Dr. Radcliffe's research is to maximize swine production efficiency while minimizing environmental impacts. A secondary goal of his research is to develop the pig as a model for studying gastrointestinal health and regulation of nutrient absorption. Results from Dr. Radcliffe's research program have demonstrated that significant reductions in nutrient excretions and emissions from swine facilities can be achieved through alterations in nutrition. In basic research, Dr. Radcliffe's laboratory has identified an active transport mechanism for P in the gastrointestinal tract of the pig, and is investigating how this transporter is regulated. In addition, his laboratory is investigating the potential use of antibiotic alternatives and their effects on control of pathogenic organisms, gastrointestinal development, nutrient absorption characteristics and immune competency. Use of antibiotics in feed has become a national issue and threatens efficacy of antibiotics in humans.



Brian Richert, Ph.D.
Associate Professor
Swine Extension

B.S., South Dakota State University; M.S. and Ph.D., Kansas State University

Email: brichert@purdue.edu Phone: (765) 494-4837 Office: POUL 103A

Research Activities

Research emphasis has been diverse to address current issues in swine nutrition and management. Focus areas: dietary manipulation to reduce odor and nutrient excretion from swine manure and facilities; use of specialty grains in swine production; nutrition for the young pig and sow; nutritional impacts on pork quality; alternatives to antibiotics; and the optimal use of Paylean in grow-finish pigs. These research and extension areas are conducted in a team approach.

Extension Activities

Programs that were distance delivery – short courses focusing on breeding, gestation and farrowing phases of production delivered state wide as well as face-to-face programs on current swine production issues. CAFO environmental and regulatory issues for swine producers in the state of Indiana. Nationally, work on the national feed management curriculum for swine and serve as the national program leader for the nutrition section of the Pig Information Gateway.

Marcos H. Rostagno, D.V.M., M. P. V.M., Ph.D.
Adjunct Assistant Professor

DVM, Federal University of Vicosa, Brazil; M.P.V.M. and Ph.D., Federal University of Minas Gerais, Brazil

Post-doctoral training: USDA, ARS, National Animal Disease

Email: rostagno@purdue.edu Phone: (765) 496-7946 Office: POUL 219C

Research Activities

Food safety is a defining issue in the global pork market. Carriage and transmission of foodborne pathogens and antimicrobial resistance constitute major concerns for the modern swine industry. Sound knowledge about the ecology and epidemiology of foodborne pathogens and antimicrobial resistance is essential to be able to strategically develop and implement intervention strategies that will minimize food safety risk. My research program is focused on the interaction between host stress and pathogen biology. I am interested in determining how production factors or variables (such as common management practices and stressors) affect the risk of pork and pork products contamination with foodborne pathogens, and the dynamic of antimicrobial resistance in gastrointestinal microbial populations. The ultimate goal of my research program is to develop effective pre-harvest intervention strategies for reduction of foodborne pathogens and antimicrobial resistance in market pigs entering the abattoirs.

Mark A. Russell, Ph.D.
Professor
Equine Nutrition & Management

Courtesy Appointment in Veterinary Clinical Sciences, Purdue School of Veterinary Medicine

B.S., Cornell University; M.S. and Ph.D., University of Illinois

Sabbatical: Visiting Professor of Rural Sciences, University of New England, New South Wales, Australia.

Email: mrussell@purdue.edu Phone: (765) 494-7677 Office: POUL 119

Teaching Assignments

- ANSC 10200 – Introductory to Animal Sciences
- ANSC 37200 - Horse Evaluation
- ANSC 38100 – Leadership for a Diverse Workplace
- ANSC 44000 – Horse Management
- ANSC 47200 - Horse Judging
- VCS 53600 - Clinical Equine Nutrition

Extension Activities

I serve the horse industry by providing horse management education by answering questions from Cooperative Extension Service Educators, writing extension publications, working with veterinarians, farriers, and feed manufacturers, and conducting Indiana Horse Council (IHC) Horse Owner Workshops. I also conduct applied research as part of solving practical industry problems in the horse industry.

Counseling Philosophy

My three goals as a counselor is to: 1) help make the transition from high school to Purdue as smooth and successful as possible, 2) help students discover themselves and the relationships that will make them successful at Purdue and throughout life, and 3) encourage students to broaden their horizons and open mindedness to experience and people unknown.

Hobbies/Interests

Judging Appaloosa, Paint and Quarter Horse shows. Watching my three children in sports, drama, music and dance, and at the horse shows. Down-hill skiing, and staying married to the same woman till I die.

Allan Schinckel, Ph.D.
Professor
Swine Genetics, Pig Growth Modeling

B.S., Iowa State University; M.S. and Ph.D., University of Nebraska

Email: aschinck@purdue.edu Phone: (765) 494-4836 Office: LILY 3-231

Teaching Assignments

- ANSC 44300 – Swine Management
- ANSC 51300 - Advanced Applied Animal Breeding

Research Activities

Dr. Schinckel has had a three-way appointment in research, teaching and extension. Dr. Schinckel has conducted research in five areas: (1) development of the means to predict farm specific compositional growth curves and predict nutrient requirements; (2) impact of genetic selection for increased carcass lean percentage on the quality of the lean and fat tissues; (3) impact of dietary changes on the fatty acid profile and fat quality of pigs of different genetic populations; (4) modeling of the impact of Ractopamine on pig compositional growth, efficiency of growth and carcass measurements; (5) development of stochastic models of pig compositional growth parameterized for populations of pigs.

Counseling Philosophy

Enable students to attain their personal and academic potential and become productive members of society.

Hobbies/Interests

Volleyball, ultimate Frisbee, and watching Purdue sports

Jon Schoonmaker, Ph.D.
Assistant Professor
Beef Cattle Nutrition

B.S., University of Wisconsin-Madison; M.S. and Ph.D., The Ohio State University

Post-doctoral Training: Iowa State University

Email: jschoonm@purdue.edu Phone: (765) 494-4860 Office: LILY 3-228

Teaching Assignments

- ANSC 52400 – Ruminant Nutrition and Physiology

Research Activities

Lifetime nutritional factors affecting intramuscular fat deposition, muscle growth, health status, and production efficiency in beef cattle.

Michael M. Schutz, Ph.D.
Professor
Animal Breeding and Genetics, Dairy

B.S. and M.S., University of Minnesota; Ph.D., Iowa State University

Post-doctoral Training: United States Department of Agriculture; National Association of Animal Breeders

Industry Experience: Canadian Beef Improvement, Inc.

Email: mschutz@purdue.edu Phone: (765) 494-9478 Office: POUL 105

Teaching Assignments
- ANSC 44400 – Dairy Management
- ANSC 48500 – Dairy Farm Evaluation

Research Activities
The current focus of research is to determine the relationships among mastitis, somatic cell counts in milk, and milk yield in first-calf heifers. Somatic cell counts in milk serve as an indicator of udder health and are elevated during mastitis infections. Research has indicated that somatic cells in milk are elevated when heifers first freshen, although clinical symptoms may or may not be present. The relative roles of pre-calving infections, or even calfhood infections, environmental stressors, or onset of lactation in causing elevated cells counts is not clear. We are attempting to model lost milk production following mastitis infection by studying patterns of daily somatic cell counts and milk yield. The dilution of cell counts by varying milk volume is also being studied. Other research interests include conformation and health traits in breeding programs, investigation of disease prevalence in dairy heifers, and use of infrared thermography for disease detection.

Extension Activities
- Milker Training Workshops
- Milk Quality Assurance Programs
- Artificial Insemination versus Natural Service Bulls
- Milk Pricing
- Risk Management for Dairy Producers
- Indiana Professional Dairy Producers

Counseling Philosophy
Students are the most important part of Purdue's community. My goal is to help students find the many opportunities available at Purdue so that they can set and achieve their unique goals.

Hobbies/Interests
Reading biographies, traveling in the U.S. and abroad, tending to my plants and flower garden

Terry S. Stewart, Ph.D.
Professor
Breeding and Genetics, Swine and Beef

B.S. and M.S., University of Florida; Ph.D., Texas A&M University

Sabbaticals: University of New England, Australia; Waite Institute, Australia; McMaster Fellow, CSIRO, Australia

Email: tstewart@purdue.edu Phone: (765) 494-0138 Office: LILY 3-234

Teaching Assignment

- ANSC 31100 - Animal Breeding

Research Activities

Development of Decision Support tools for livestock production. This involves integrating genetic technologies and animal performance data into a framework that can assist livestock producers in selecting animals and designing mating systems that will optimize production. Research in this area involves use of computer simulation models, expert systems, statistics, and economics as well as genetics. While the research is focused on swine and beef cattle, work has also been done with poultry, horses, sheep and fish.

Counseling Philosophy

As a counselor, my first role is to be a student's advocate, not only someone that helps them understand the degree requirements but someone that they know is on their side to help them succeed. My goal is to help students prepare for a productive and fulfilling career. If that means a degree in Animal Science, that's great, but if it means helping them find a different path to the goal, that's great too. The important thing is to help them succeed.

Hobbies/Interests

Our family enjoys traveling and outdoor activities like skiing and fishing, gardening and good times with friends. I am always ready for a game of squash with anyone that wants to play; an interest I picked up while living in Australia.

Jolena N. Waddell, Ph.D.
Lecturer
Growth & Development, Muscle Biology, Meat Science, Molecular Genetics, Functional Genomics

B.S. and M.S., Texas Tech University; Ph.D., Purdue University

Post-doctoral training: Purdue University

Email: jnwaddell@purdue.edu Phone: (765) 494-3276 Office: POUL 205

Teaching Assignments

- ANSC 10200 - Introduction to Animal Agriculture
- ANSC 30100 - Animal Growth, Development and Evaluation
- ANSC 31100 - Animal Breeding
- ANSC 35100 - Meat Science

Teaching Philosophy

I believe my role as a teacher is to present information to my students in a way that they will be able to go into any related field of science and use knowledge from my class to critically evaluate and reason through contemporary issues. I push my students to think beyond their current knowledge and consider new challenges by applying their basic skills learned in class. I want to drive my students to develop beyond simple recall and comprehension to actual analysis and application of the information presented to them. Because technology is constantly evolving, students will be faced with future challenges and opportunities we can only imagine. With the foundation of genetics, biology, and animal growth paired with critical thinking, our students will hopefully serve as leaders to our future animal science community.

Hobbies/Interests

Quilting, gardening, furniture refinishing

Ashley Welchans
Director of Academic Advising & Student Services

B.S. Purdue University; M.S. Ball State University

Email: welchans@purdue.edu Phone: (765) 494-4843 Office: LILY 3-107

Duties

- Coordinate and play an integral role in student advising activities.
- Support and coordinate the advising faculty.
- Provide appropriate knowledge and tools for student academic success.
- Promote leadership and self-development skills for student career success.

Counseling Philosophy

To mentor students and be a readily-available resource which they may utilize in their journey to success. Students are our future and it is my goal to help them succeed to their fullest potential.

Hobbies/Interests

Spending time with family, traveling, gardening, and photography

Curricula in Animal Sciences

A student in Animal Sciences at Purdue University can earn a Bachelor of Science degree (B.S.) by completing a minimum of 130 credit hours. To earn a baccalureate degree, a student shall enroll at Purdue for at least two semesters and the completion of at least 32 credit hours of upper level courses. In the College of Agriculture, upper level is defined as 30000 level or higher courses at Purdue or one of its regional campuses. Even though courses designated as 30000+ at other universities will satisfy curricula requirements, the course would not apply towards the minimum of 32 hours needed at Purdue. In addition, the graduation candidate must achieve a minimum average of 2.00 in graded ANSC courses and a cumulative GPA in all courses of $\geq$ 2.00.

College of Ag Core (59 hours)
(As applicable to the Department of Animal Sciences)

Orientation Courses	**Credits**
AGR 10100 (Orientation to COA)	.5
AGR 11400 (Orientation to ANSC)	.5
Mathematics and Sciences	
Biological Sciences	8
Calculus	3
General Chemistry	6
Statistics	3
Additional Mathematics and Sciences	8
Minimum Total	28
Written and Oral Communications	
ENGL 10600/10800	4/3
COM 11400	3
Written or Oral Communication elective	3
Additional Written Communication elective	3
Minimum Total	13/12
Social Sciences and Humanities	
Economics	3
Social Sciences	3
Humanities	6
Additional Humanities or Social Sciences	6
Minimum Total	18
College of Ag Core Requirements	59
Departmental Requirements	71
Total	130*

*As part of the 130 minimum hours required for graduation, the student must complete a minimum of 9 hours of international understanding credits, a minimum of 3 hours of a multicultural awareness experience and a capstone experience (ANSC 48100 plus production/management course).

AGEC 20300 Introductory Microeconomics for Food and Agribusiness Sem. 1 and 2. Class 3, cr. 3.

This course introduces the application of microeconomics as used by farms and agribusiness firms. The behavior of individual firms is evaluated as price and output are determined in various market structures (pure competition, pure monopoly, monopolistic competition, and oligopoly). Other topics include pricing and employment of resources, market failure and the social control of industry (government, economics policy, and regulation), cost and production theory.

AGEC 21700 Economics Sem. 1 and 2. SS. Class 3, cr. 3.

National economic problems such as unemployment, recessions, inflation, taxation, bank interest rates, the growth of government, monetary systems, and a rising national debt are discussed along with the principles, policies, and institutions for solving these macroeconomic problems. Credit for both AGEC 21700 and ECON 21000 cannot be granted.

AGR 10100 Introduction to the School of Agriculture and Purdue University. Sem. 1. Class 1, cr. .5. Course meets during weeks 1-8.

An introduction to the dimensions, issues, and professional opportunities of the food, agricultural, and natural resource system. Perspectives will be provided by invited representatives from various academic programs of the system.

AGR 11400 Orientation to Academic Programs in Animal Sciences. Sem. 1. Class 1, cr. .5. Course meets during weeks 1-8.

An introduction to the academic programs offered in the Department of Animal Sciences. Topics include, but are not limited to undergraduate plans of study, courses, experiential programs, internships, student organizations, career opportunities, academic policies, scholarships, and student services.

AGRY 32000 Genetics Sem. 1 and 2. Class 3, cr. 3. Prerequisite: BIOL 11000 and 11100.

The transmission of heritable traits; probability; genotypic-environmental interactions; chromosomal aberrations; polyploidy; gene mutations; genes in populations; the structure and function of nucleic acids; biochemical genetics; molecular genetics; coding.

AGRY 32100 Genetics Laboratory Sem. 1 and 2. Lab. 3, cr.1. Prerequisite or corequisite: AGRY 32000.

Experiments and demonstrations with higher plants, mammals, insects, and bacteria to elucidate the basic principles of classical and modern genetics.

BIOL 11000 Fundamentals of Biology I Sem. 1. Lec. 2, rec. 1, lab. 2, cr. 4.

Principles of biology, focusing on diversity, ecology, evolution, and the development, structure and function of organisms.

BIOL 11100 Fundamentals of Biology II Sem. 2. Lec. 2, rec. 1, lab. 2, cr. 4. Prerequisite: BIOL 11000.

Principles of biology, focusing on cell structure and function, molecular biology and genetics.

COM 11400 Fundamentals of Speech Communication Sem. 1 and 2. SS. Class 3, cr. 3.

A study of communication theories as applied to speech; practical communicative experiences ranging from interpersonal communication and small group process through problem identification and solution in discussion to informative and persuasive speaking in standard speaker-audience situations.

CHM 11100 General Chemistry Sem. 1 and 2. Class 2, lab. 3, cr. 3.

Metric and S.I. Units; dimensional analysis; density; the atomic concept; elements, compounds, and mixtures; the mole concept; equations and stoichiometry; atomic structure, spectra; the periodic table; chemical bonding, gases; descriptive chemistry of the common elements.

CHM 11200 General Chemistry Sem. 2. Class 2, lab. 3, cr. 3. Prerequisite: CHM 11100.

Continuation of CHM 11100. Liquids and solids; solutions; chemical kinetics; equilibrium; acids and bases; oxidation and reduction; electrochemistry; descriptive chemistry of the metals and nonmetals; introduction to organic chemistry; nuclear chemistry.

CHM 11500 General Chemistry Sem. 1 and 2. Class 3, lab. 3, cr. 4. Prerequisite: MA 15100 or placement into a calculus sequence (MA 16100 or 22300). One year of high school chemistry or one semester of college chemistry required.

Stoichiometry; atomic structure; periodic properties; ionic and covalent bonding; molecular geometry; gases, liquids, and solids; crystal structure; thermochemistry; descriptive chemistry of metals and non-metals.

CHM 11600 General Chemistry Sem. 1 and 2. Class 3, lab. 3, cr. 4. Prerequisite: CHM 11500.

A continuation of CHM 11500. Solutions; quantitative equilibria in aqueous solution; introductory thermodynamcis; oxidation-reduction and electrochemistry; chemical kinetics; qualitative analysis; further descriptive chemistry of metals and nonmetals.

ECON 21000 Principles of Economics Sem. 1 and 2. SS. Class 3, cr. 3.

Economics is the study of decision making under conditions of scarcity. This course looks at the behavior of the individual consumer and firm and their interaction with the government. The second half of the course studies the macroeconomy and focuses on the causes of inflation, unemployment, and interest rate changes. The international economy also will be studied. Credit for both ECON 21000 and AGEC 21700 cannot be granted.

ENGL 10600 First-Year Composition Sem. 1 and 2. SS. Class 4, cr. 4.

Extensive practice in writing clear and effective prose. Instruction in organization, audience, style, and research-based writing.

ENGL 10800 Accelerated First-Year Composition Sem. 1 and 2. Class 3, cr. 3.

An accelerated composition course for advanced students, or students who have already attained a level of first-year writing proficiency. In many respects, English 10800 is similar to English 10600; however it emphasizes a more rigorous approach with higher expectations on your ability to work more quickly and more independently. To meet all the goals of this course, you should expect to produce approximately 8,000 words of polished writing or the equivalent. Some of this text production may be done using multimedia, and some of it may be given through short assignments. Your writing topics may include personal experiences as well as research-based arguments. You may also be asked to write on topics that are related to your major field of study.

MA 15200 College Algebra Sem. 1 and 2. SS. cr. 3. Prerequisite: Demonstrated competence in intermediate algebra.

This is a course in college algebra for students who do not need the technical skills required for those who are planning to continue with calculus. There will be an emphasis on applied problems and graphing techniques. Topics covered: real numbers, linear functions, solving linear equations and systems of linear equations, absolute value equations and inequalities, rational expressions, complex numbers, proportions, solving quadratic equations, exponential and logarithmic functions, circle and parabola equations, and the mathematics of finance including compound interest and annuities. Students receiving an "A" or "B" in MA 15200 may continue with MA 15400.

MA 15300 Algebra and Trigonometry Sem. 1 and 2. SS. Class 3, cr. 3.

Exponents and radicals; algebraic and fractional expressions. Equations and inequalities, systems of linear equations. Polynomial, exponential, and logarithmic functions. Not open to students with credit in MA 15900.

MA 15400 Algebra and Trigonometry II Sem. 1 and 2. SS. Class 3, cr. 3. Prerequisite: MA 15300.

The trigonometric functions. Analytic geometry. Laws of sines and cosines; vectors and the dot product. Conic sections. Rational functions. Not open to students with credit in MA 15900. Open to students with an "A" or "B" in MA 15200.

MA 15800 Precalculus Sem. 1 and 2. Class 3, cr. 3.

Algebra and trigonometry topics designed to prepare students for calculus.

MA 22000 Introduction to Calculus Sem. 1 and 2. Class 3, cr. 3. Prerequisite: MA 15300.

A survey of differential and integral calculus. Applications to the agricultural life, managerial, and social sciences.

MA 22300 Introductory Analysis I Sem. 1 and 2. SS. Class 3, cr. 3. Prerequisite: MA 15100.

Differential calculus with applications to management and economics.

MA 22400 Introductory Analysis II Sem. 1 and 2. SS. Class 3, cr. 3. Prerequisite: MA 22300.

Integral calculus; partial derivatives; differentials; introduction to differential equations. Applications to management and economics.

MA 23100 Calculus for the Life Sciences I

Limits, continuity, differentiation of functions including trig, log, and exponential functions, chain rule, higher order derivatives, applications including max., min., and exponential growth and decay, integration by substitution, and fundamental theorem of calculus. Credit by examination is not available.

MA 23200 Calculus for the Life Sciences II

Techniques of integration, differentiation and integration of functions of several variables, method of least squares, first order differential equations, difference equations, matrices, determinants, eigenvalues and eigenvectors. Credit by examination is not available.

STAT 30100 Elementary Statistical Methods Sem. 1 and 2. SS. Class 3, cr. 3. Prerequisite: college algebra. Credit should be allowed in no more than one of STAT 30100, 30500, 35000, 43300, 50100, 50300 or 51100.

A basic introductory statistics course with applications shown to various fields and emphasis placed on assumptions, applicability, and interpretations of various statistical techniques. Subject matter includes frequency distributions, descriptive statistics, elementary probability, normal distribution applications, sampling distributions, estimation, hypothesis testing, linear regression. The MINI-TAB computing system is used.

Mathematics and Sciences Approved Courses (28 credits)

The objectives of the mathematics and sciences component of the core curriculum are for students to acquire a foundation of knowledge in mathematics, chemistry, and the biological and physical sciences, an understanding of the scientific method, and the ability to apply their knowledge and problem solving skills to relevant issues.

To fulfill the biological sciences core requirements, all students must complete at least two hours of laboratory credit in biological sciences each week for 32 weeks, or the equivalent. Completion of course sequences is recommended. Courses with an (*) have a laboratory component.

Biological Sciences (8 credits)

(4) BIOL 11000 (Fundamentals of Biology I)*
(4) BIOL 11100 (Fundamentals of Biology II)*
(2) BIOL 12100 (Biology I: Diversity, Ecology, and Behavior)
(3) BIOL 13100 (Biology II: Development, Structure and Function of Organisms)
(1) BIOL 13600 (Quantitative and Problem Solving Skills)
(1) BIOL 13700 (Handling Cells and Tissues, Microscopy)
(1) BIOL 13800 (Information and Communication Skills)
(1) BIOL 13900 (Measurements and Basic Solution Chemistry)
(2) BIOL 19500 (First-Year Biology Laboratory)*
(4) BIOL 20300 (Human Anatomy and Physiology)*
(4) BIOL 20400 (Human Anatomy and Physiology)*
(4) BIOL 22100 (Introduction to Microbiology)*
(3) BIOL 23000 (Biology of the Living Cell)
(3) BIOL 23100 (BIOL III: Cell Structure and Function)
(2) BIOL 23200 (Laboratory in BIOL III: Cell Structure and Function)*
(1) BIOL 29500 (Quantitative Biology of the Living Cell)
(4) BTNY 11000 (Introduction to Plant Science)*
(4) HORT 30100 (Plant Physiology)*

*Course includes at least two hours of laboratory.

General Chemistry (6 credits)

(3) CHM 11100 (General Chemistry) and (3) CHM 11200 (General Chemistry)
(4) CHM 11500 (General Chemistry) and (4) CHM 11600 (General Chemistry)

Calculus (3 credits)

(5) MA 16100 (Plane Analytic Geometry and Calculus I)
(4) MA 16500 (Analytical Geometry and Calculus I)
(3) MA 22000 (Introduction to Calculus)
(3) MA 22300 (Introductory Analysis I)
(3) MA 23100 (Calculus for the Life Sciences I)

Statistics (3 credits)

(3) STAT 30100 (Elementary Statistical Methods)
(3) STAT 50100 (Experimental Statistics I)
(3) STAT 50300 (Statistical Methods for Biology)
(3) STAT 51000 (Statistical Methods)

Additional Mathematics or Sciences (8 credits)

(3) AGEC 35200 (Quantitative Techniques for Firm Decision Making)
(3) AGEC 45100 (Applied Econometrics)
(3) AGRY 25500 (Soil Science)
(3) AGRY 27000 (Forest Soils)
(3) AGRY 32000 (Genetics)
(1) AGRY 32100 (Genetics Laboratory)
(3) AGRY 33500 (Weather and Climate)
(3) ANSC 22100 (Principles of Animal Nutrition)
(4) ANSC 23000 (Physiology of Domestic Animals)
(3) BCHM 30700 (Biochemistry)
(1) BCHM 30900 (Biochemistry Laboratory)
(4) BIOL 22100 (Introduction to Microbiology)
(3) BIOL 23100 (Biology III: Cell Structure and Function)
(2) BIOL 23200 (Laboratory in Biology III: Cell Structure and Function)
(3) BIOL 24100 (Biology IV: Genetics and Molecular Biology)
(2) BIOL 24200 (Laboratory in Biology IV: Genetics and Molecular Biology)
(2) BIOL 27000 (Cell Structure and Function)
(2) BIOL 27100 (Laboratory in Cell Structure and Function)
(2) BIOL 28000 (Genetics and Molecular Biology)
(2) BIOL 28100 (Laboratory in Genetics and Molecular Biology)
(2) BIOL 28600 (Introduction to Ecology)
(4) BTNY 11000 (Introduction to Plant Science)
(3) BTNY 21100 (Plants and the Environment)
(3) BTNY 30100 (Introductory Plant Pathology)
(3) BTNY 30500 (Fundamentals of Plant Classification)
(4) BTNY 31600 (Plant Anatomy)
(3) BTNY 35000 (Biotechnology in Agriculture)
(4) CHM 22400 (Introductory Quantitative Analysis)
(3) CHM 25500 (Organic Chemistry)
(1) CHM 25501 (Organic Chemistry Laboratory)
(3) CHM 25600 (Organic Chemistry)
(1) CHM 25601 (Organic Chemistry Laboratory)
(4) CHM 25700 (Organic Chemistry)
(1) CHM 25701 (Organic Chemistry Laboratory)
(3) CHM 26100 (Organic Chemistry)
(3) CHM 26200 (Organic Chemistry)
(1) CHM 26300 (Organic Chemistry Laboratory)
(1) CHM 26400 (Organic Chemistry Laboratory)
(3) CS 15600 (C Programming)
(4) CS 18000 (Programming I)
(3) EAS 11100 (Physical Geology)
(3) EAS 11200 (Earth Through Time)
(3) EAS 22100 (Survey of Atmospheric Science)
(2) ENTM 20600 (General Applied Entomology)
(1) ENTM 20700 (General Entomology Laboratory)
(3) ENTM 21000 (Introduction to Insect Behavior)
(4) HORT 30100 (Plant Physiology)
(5) MA 16200 (Plane Analytic Geometry and Calculus II)
(4) MA 16600 (Analytic Geometry and Calculus II)

(3) MA 22400 (Introductory Analysis II)
(3) MA 23200 (Calculus for Life Sciences II)
(3) MA 26100 (Multivariate Calculus)
(3) NRES 23000 (Survey of Meteorology)
(3) NRES 25500 (Soil Science)
(4) PHYS 15200 (Mechanics)
(3) PHYS 21400 (The Nature of Physics)
(4) PHYS 22000 (General Physics)
(4) PHYS 22100 (General Physics)
(3) PHYS 24100 (Electricity and Optics)
(3) STAT 50200 (Experimental Statistics II)
(3) STAT 51100 (Statistical Methods)
(3) STAT 51200 (Applied Regression Analysis)

Written and Oral Communication Approved Options

Option 1 (Beginning Freshmen – Regular Credentials)
(3) COM 11400 (Fundamentals of Speech Communication)
(4) ENGL 10600 (First-Year Composition)
(3) From American Sign Language (ASL), Communication (COM 20000+), English (ENGL 20000+), (3) AGR 20100 (Communicating Across Culture), or (3) YDAE 44000 (Methods of Teaching Agricultural Education)

Option 2 (Beginning Freshmen – Advanced Credentials)
(3) COM 11400 (Fundamentals of Speech Communication)
(3) ENGL 10800 (Accelerated First-Year Composition)*
(3) From American Sign Language (ASL), Communication (COM 20000+), English (ENGL 20000+), (3) AGR 20100 (Communicating Across Culture), or (3) YDAE 44000 (Methods of Teaching Agricultural Education)

Option 3 (Transfer Students – Three Credits of English Completed)†
(3) COM 11400 (Fundamentals of Speech Communication)
(3) Transfer credits in freshman English composition, excluding courses equivalent to or similar to ENGL 10000.
(3) From American Sign Language (ASL), Communication (COM 20000+), English (ENGL 20000+), (3) AGR 20100 (Communicating Across Culture), or (3) YDAE 44000 (Methods of Teaching Agricultural Education)

Option 4 (Transfer Students – Six Credits of English Completed)†
(3) COM 11400 (Fundamentals of Speech Communication)
(6) Transfer credits in freshman English composition, excluding courses equivalent to or similar to ENGL 10000.
(3) From American Sign Language (ASL), Communication (COM 20000+), English (ENGL 20000+), (3) AGR 20100 (Communicating Across Culture), or (3) YDAE 44000 (Methods of Teaching Agricultural Education)

*Students who earn an “A” or “B” in ENGL 10800 are exempt one credit of Written and Oral Communication requirements and total graduation requirements. Those who do not earn an “A” or “B” in ENGL 10800 must complete six credits from American Sign Language (ASL), Communication

(COM 20000+), English (ENGL 20000+), (3) AGR 20100 (Communicating Across Culture), or (3) YDAE 44000 (Methods of Teaching Agricultural Education).
†Ten credits are required to fulfill Written and Oral Communication requirements for the baccalaureate degree. The additional two credits may be used in the plan of study at the discretion of the department offering the major.

Additional Written Communication Electives
Minimum: 3 credits

I. ANSC 38100 – Leadership for a Diverse Workplace

II. ENGL – Any course 20000 or higher

III. Following COM courses
- COM 20400 – Critical Perspectives on Communication
- COM 25200 – Journalistic Writing
- COM 43600 – Script Writing
- COM 45000 – Public Relations Writing
- COM 45100 – Magazine Journalism
- COM 45300 – Reporting of Science News
- COM 45500 – Advocacy Journalism
- COM 45600 – Advertising Writing
- COM 45700 – Advanced Reporting Methods
- COM 45900 – Publications Editing

IV. AGR 20100 – Communicating Across Culture
YDAE 46000 – Agricultural Publishing

Economics, Humanities and Social Sciences (HSSE)

A minimum of 18 credits is needed to satisfy Economics, Humanities and Social Sciences electives for a B.S. degree in Agriculture. Twelve credits must be earned outside the COA and 3 credits of HSSE electives must be 30000+. For Animal Sciences, the requirements are:

Economics (3)
Humanities (6)
Social Sciences (3)
Humanities or Social Science (6)

*Economics**
(3) AGEC 20300 (Introductory Microeconomics for Food and Agribusiness)
(3) AGEC 20400 (Introduction to Resource Economics and Environmental Policy)
(3) AGEC 21700 (Economics)
(3) ECON 21000 (Principles of Economics)
(3) ECON 25100 (Microeconomics)
(3) ECON 25200 (Macroeconomics)
*Plan of study may include AGEC 21700 or ECON 21000, but not both.

Humanities
Agriculture (limited to AGR 20100)
Band (a maximum of three credits may be used to fulfill humanities requirements)
Educational Leadership and Cultural Foundations (limited to EDST 20000)
English Literature (limited to ENGL 22700, 23000, 23100, 23200, 23500, 23700, 23800, 23900, 24000, 24100, 25000, 25700, 26200, 26400, 26600, 26700, 27600, 27900, 33100, 33300, 33500, 33700, 35000, 35100, 35600, 36000, 36400, 37200, 37300, 37500, 37700, 37900, 38100, 38200, 38300, 38600, 38700, 39600, 41100, 41200, 41300, 41400, 44100, 44200, 44400, 46200, 46300, 46800, 46900, 49200)

Foreign Languages and Literatures - A minimum of six credits of the same foreign language must be earned to be included in a plan of study to meet Humanities or International Understanding requirements. If only three credits of a foreign language are earned, they may only be used in a plan of study as an elective.
(FLL, Arabic, Chinese, Classics, French, German, Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish)

History

Honors – Course selection is limited to HONR 19900 (Science and Pseudoscience) and HONR 29900 (Insects in Literature and Art).

Interdisciplinary Studies (IDIS)
Asian Studies
Comparative Literature
Film Studies
Italian Studies
Jewish Studies
Linguistics
Medieval Studies
Religious Studies
Science and Culture
Women's Studies

Philosophy

Visual and Performing Arts (Art and Design, Dance, Music, Theatre)

Social Sciences

Agricultural Economics (limited to six credits from AGEC 25000, 30005, 34000, 40600, 41000, 41500, 45000 or 49800)
Agriculture (limited to AGR 20100)
Agronomy (limited to AGRY 39900: Afghanistan)
Anthropology
Economics
Forestry and Natural Resources (limited to FNR 37500)
Political Science
Psycho-educational Studies (limited to EDPS 23500 and 26500)
Psychological Sciences
Sociology

International Understanding

(If a course appears on the International Understanding list and Multicultural list, the course can only be used to satisfy one requirement.)

(1-4) All foreign languages and foreign literature courses
(3) AGEC 25000 (Economic Geography of World Food and Resources)
(3) AGEC 34000 (International Economic Development)
(3) AGEC 45000 (International Agricultural Trade)
(3) AGEC 49800 (Afghanistan Development Challenges)
(1-3) AGR 49300 (Special Topics in International Agriculture)
(0) AGR 49500 (International Prof. Exp. in Ag., Food, and Natural Resources)
(3) AGRY 28500 (World Crop Adaptation and Distribution)
(1-3) AGRY 35000 (Global Awareness)
(3) AGRY 39900 (Afghanistan Development Challenges)
(3) AGRY 39900 (Exploring Intl. Agricultural)
(3) AGRY 57000 (Agronomy in Intl. Development)
(3) AGRY 59800 (African Development Challenges)
(3) ANSC 29400 (Exploring Intl. Animal Agriculture)
(3) ANTH 10000 (Introduction to Anthropology)
(3) ANTH 20500 (Human Cultural Diversity)
(3) ANTH 57800 (Peoples of Middle America)
(3) BTNY 20100 (Plants and Civilization)
(3) CMPL 26600 (World Literature: From the Beginnings to 1700 A.D.)
(3) CMPL 26700 (World Literature: From 1700 A.D. to the Present)
(3) COM 42400 (Communication in International Organizations)
(3) ECON 37000 (International Trade)
(3) ECON 46600 (International Economics)
(3) ENGL 26600 (World Literature: From the Beginnings to 1700 A.D.)
(3) ENGL 26700 (World Literature: From 1700 A.D. to the Present)
(3) FNR 23000 (The World's Forests and Society)
(3) FNR 46000 (International Natural Resources Summer Program)
(3) FNR 48800 (Global Environmental Issues)
(3) HIST 24000 (East Asia and Its Historic Transition)
(3) HIST 24100 (East Asia in the Modern World)
(3) HIST 24300 (South Asian History and Civilizations)
(3) HIST 24500 (Introduction to Middle East History and Culture)
(3) HIST 27100 (Latin American History to 1824)
(3) HIST 27200 (Latin American History from 1824)
(3) HIST 30200 (History of Horticulture)
(3) HIST 32300 (German History)
(3) HIST 32400 (Modern France)
(3) HIST 34000 (Modern China)
(3) HIST 34100 (History of Africa South of the Sahara)
(3) HIST 34200 (Africa and the West)
(3) HIST 34300 (Traditional Japan)
(3) HIST 34400 (History of Modern Japan)
(3) HIST 44100 (Africa in the Twentieth Century)
(3) HIST 47200 (History of Mexico)
(3) HONR 19900 (Malaria: First World Science v. Third World Disease: A Moral Dilemma?)
(3) HORT 30600 (History of Horticulture)
(3) HORT 40300 (Tropical Horticulture)
(3) HORT/LA 45000 (In the English Landscape: Integrating History, Horticulture and Landscape Architecture)
(3) LA 16600 (History and Theory of Landscape Architecture)
(3) PHIL 11000 (Introduction to Philosophy)
(3) PHIL 33000 (Religions of the East)
(3) PHIL 33100 (Religions of West)
(3) POL 13000 (Intro. To International Relations)
(3) POL 14100 (Governments of the World)
(3) POL 23200 (Contemporary Crises in International Relations)
(3) POL 23500 (International Relations among Rich and Poor Nations)
(3) POL 23700 (Modern Weapons and International Relations)
(3) POL 29000 (Russia: Yesterday, Today, and Tomorrow)
(3) POL 30400 (Israel and World Politics)
(3) POL 32700 (Global Green Politics)

(3) POL 34400 (Introduction to the Politics of the Third World)
(3) POL 34500 (West European Democracies in the Post-Industrial Era)
(3) POL 34800 (East Asian Politics)
(3) POL 43300 (International Organization)
(3) POL 43400 (United States Foreign Policy, Central America and the Caribbean)
(3) POL 43500 (International Law)
(3) POL 44200 (Government and Politics in Russia)
(3) POL 44400 (Introduction to African Politics)
(3) POL 44500 (Politics in France and Germany)
(3) POL 44700 (The British Political System and the Commonwealth of Nations)

Summary of courses or combination of courses that do not count towards graduation in all ANSC options:

The following courses are not applicable as credit toward graduation: CHM 10000; ENGL 10000, 10900; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400; PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000. Of MA 15200, 15300, 15400 and 15900, only one course can be used as an elective.

Only eight credits from BIOL 11000, 11100, 12100, 13100, 13600-13900, 20100, 20200, 20300, 20400, 21100, and 21200 can be used towards graduation.

Multicultural Awareness Requirement – 3 credits

All undergraduate plans of study leading to the degree of Bachelor of Science, Bachelor of Science in Agricultural and Biological Engineering, Bachelor of Science in Forestry, or Bachelor of Science in Landscape Architecture must include a minimum of three credits of multicultural awareness electives.

Students must broaden their awareness of the United States domestic, multicultural environment. The objective of the multicultural awareness component of the core curriculum is to stimulate students to become aware of self and others to be better prepared for the workplace and participatory citizenship.

This requirement may be fulfilled through:

- (3) **AGR 20100** (Communicating Across Culture). The AGR 20100 course coordinator and lead instructor will be the Assistant Dean and Director of the College of Agriculture Office of Diversity Programs. The course coordinator is responsible for validating the competency of faculty members responsible for laboratory sections. AGR 20100 credits may be used to fulfill written and oral communication, social science and humanities, or departmental requirements.

- Selection from the multicultural electives course list. All courses must go through a validation process to be added to the list. Courses that include multicultural awareness components developed by College of Agriculture departments will follow this process.

- **AGR 49600 (**Multicultural Professional Experience). Successful completion of an approved non-credit multicultural awareness work experience (AGR 49600) of a minimum of 4 weeks duration may be used in lieu of three credits of multicultural awareness electives to fulfill the

multicultural awareness requirement. The Assistant Dean for Diversity will be the instructor of record for AGR 49600. Course proposals that address the learning objectives of the experience and define how the culture in which the immersion will take place is different from their native culture will be evaluated for approval by the Assistant Dean for Diversity. Approval is required as a condition for registration.

Multicultural Awareness Electives

Additional courses may be added to this list via approval by the Agricultural Faculty Curriculum and Student Relations Committee of the course syllabus, to determine that it meets the objective of the multicultural requirement in the College of Agriculture. "The objective of the multicultural awareness component of the core curriculum is to stimulate students to become aware of self and others to be better prepared for the workplace and participatory citizenship." Students are encouraged to explore coursework outside their own culture.

Multicultural Awareness Course Elective List
(If a course appears on the Multicultural Awareness list and the International Understanding list, the course can be used to meet only one requirement.)
(3) **AAS 27100** (Introduction to Afro-American Studies)
(3) **AAS 27700** (African American Pop Culture)
(3) **AAS 37000** (Black Women Rising)
(3) **AAS 37100** (The African American Experience)
(3) **AAS 37500** (The Black Family)
(3) **AAS 37600** (The Black Male)
(3) **AAS 37700** (African American Sexuality and Society)
(3) **AGR 20100** (Communicating Across Culture)
(0) **AGR 49600** (Multicultural Professional Experience)
(3) **ANTH 20500** (Human Cultural Diversity)
(3) **ANTH 23000** (Gender Across Cultures)
(3) **ANTH 30300** (Gender Across Cultures)
(3) **ANTH 37900** (Indians of North America)
(3) **ANTH 48200** (Sexual Diversity in Global Perspective)
(3) **ANTH 57800** (Peoples of Middle America)
(3) **ASAM 24000** (Introduction to Asian American Studies)
(3) **CDFS 30100** (Families in a Multicultural Society)
(3) **COM 32800** (Diversity at Work: A Rhetorical Approach)
(3) **COM 30300** (Intercultural Communication)
(3) **COM 36800** (Sociolinguistic Study of African American English)
(3) **COM 37600** (Communication and Gender)
(3) **COM 38100** (Gender and Feminist Studies in Communication)
(3) **EDCI 28500** (Multiculturalism and Education)
(3) **ENGL 25700** (Literature of Black America)
(3) **ENGL 35400** (Asian American Literature)
(3) **ENGL 35800** (Black Drama)
(3) **ENGL 36000** (Gender and Literature)
(3) **ENTR 47000** (Women and Leadership)

(3) **HIST 35400** (Women in America to 1870)
(3) **HIST 36500** (Women in America)
(3) **HIST 36600** (Hispanic Heritage of the United States)
(3) **HIST 37500** (Women in America Since 1870)
(3) **HIST 37700** (History & Culture of Native America)
(3**) HIST 39600** (The Afro-American to 1865)
(3) **HIST 39800** (The Afro-American since 1865)
(3) **HK 22600** (Contemporary Women's Health)
(3) **IDIS 27100** (Introduction to Afro-American Studies)
(3) **IDIS 27700** (African American Pop Culture)
(3) **IDIS 28000** (Women's Studies: An Introduction)
(3) **IDIS 33000** (Introduction to Jewish Studies)
(3) **IDIS 37000** (Black Women Rising)
(3) **IDIS 37500** (Black Family)
(3) **IDIS 37600** (African American Male)
(3) **IDIS 38000** (Gender and Multiculturalism)
(3) **IDIS 48100** (Women of Color in the United States)
(3) **JWST 33000** (Introduction to Jewish Studies)
(3) **OLS 49900** (Women and Work)
(3) **PHIL 22500** (Philosophy of Women)
(3) **PHIL 24200** (Philosophy, Culture and the African American Experience)
(3) **PHIL 33000** (Religions of the East)
(3) **PHIL 33100** (Religions of the West)
(3) **POL 22200** (Women, Politics and Public Policy)
(3) **POL 32600** (Black Political Participation in America)
(3) **POL 36000** (Women and the Law)
(3) **POL 45600** (African American Political Thought)
(3) **PSY 22500** (Stereotyping and Prejudice)
(3) **PSY 23900** (The Psychology of Women)
(3) **PSY 33500** (Stereotyping and Prejudice)
(3) **PSY 36800** (Children's Development in Cross-Cultural Perspective)
(3) **REL 23000** (Religions of the East)
(3) **REL 23100** (Religions of the West)
(3) **SOC 22000** (Social Problems)
(3) **SOC 31000** (Racial and Ethnic Diversity)
(3) **SOC 35600** (Hate and Violence)
(3) **SOC 36700** (Religion in America)
(3) **SOC 45000** (Gender Roles in Modern Society)
(3) **SPAN 23500** (Mexican and Latino Culture)*
(3) **WOST 28000** (Women's Studies: An Introduction)
(3) **WOST 38000** (Gender & Multiculturalism)
(3) **WOST 38100** (Women of Color in the United States)
(3) **WOST 38300** (Women and Work)
(3) **WOST 48000** (Feminist Theory)
(3) **WOST 48200** (Interdisciplinary Studies in Sexuality: Scholarship on Lesbian and Gay Issues)

(2-3) **YDAE 38500** (Urban Service-Learning)

Animal Sciences Capstone Experience

ANSC 48100 and one of the species management classes (ANSC 44000-44600) are required for the Animal Sciences capstone experience.

A). ANSC 48100 Contemporary Issues in Animal Sciences Sem. 1. Class 1, cr. 1. Junior or senior classification.

Industry-led and student discussion and debate of current issues facing animal industries. Topics include environmental impact, animal care and well-being, ethics, use of biotechnology, world
food supply, and international agricultural trade. Industry representatives will share their experiences of the importance of good communication skills as well as technical knowledge of issues that are of concern to animal industries. Professor Mathew and Mr. Delks.

B). Species Management (ANSC 44000-44600) Sem. 1 or 2. Class 3, cr. 3. Junior or senior classification.

A species management course (companion, horse, beef, sheep, swine, dairy, poultry) is required for an ANSC major to graduate regardless of his/her option. A major component of each of these courses (approximately 20-25% of grade) is to give the student practical experience in aspects of planning and operating an animal enterprise as a member of a team or consultant group. Economic evaluation of the enterprise is an integral part of the project. Written reports and/or verbal presentations of the enterprise will be evaluated (Drs. Allrich, Lemenager, Neary, Russell, Schinckel, Schutz or Hester).

Concentrations in Animal Sciences

Animal Agribusiness (ANAG)

Opportunities

Sales and service of animal health products, feed, production and equipment firms, livestock representatives for banks and other lending organizations, insurance companies and public relations.

Desirable Interests

You may be well suited for Animal Agribusiness if you enjoy meeting people, have reasonably good oral communication skills as well as proficiency in writing. Experience in raising livestock is essential since you would be expected to be working with managers of animal production units. An interest in economics and business management is desirable.

Academic Preparation

Students pursuing this option are required to take a basic core of 33 credits in Animal Sciences courses in addition to 22 credits in business management and economics. Courses are also available in Agricultural Economics, Agronomy and Ag Mechanization, which provide a breadth of information desirable for careers in the business world.

Suggested Plans of Study Sequence

MAJOR: ANIMAL SCIENCES (ASCI)
CONCENTRATION: AGRIBUSINESS (ANAG)
Credits required for graduation: 130

Freshman Year

First Semester	*Second Semester*
(0.5) **AGR 10100** (Introduction to the College of Agriculture and Purdue University)	(1) **AGEC 20200** (Spreadsheet Use In Agricultural Business)
(0.5) **AGR 11400** (Introduction to Animal Sciences Academic Programs)	(1) **ANSC 18100** (Orientation to Animal Sciences)
(4) **BIOL 11000** (Fundamentals of Biology I)	(4) **BIOL 11100** (Fundamentals of Biology II)
(3) **CHM 11100** (General Chemistry)	(3) **CHM 11200** (General Chemistry II)
(4) **ENGL 10600** (First-Year Composition)	(3) **COM 11400** (Fundamentals of Speech Communication)
(3) **MA 22000** (Introduction to Calculus)	(3) Economics selective
(3) Animal sciences selective	(3) Humanities selective
(18)	(18)

Sophomore Year

Third Semester	*Fourth Semester*
(3) **AGEC 20300** (Introductory Microeconomics For Food and Agribusiness)	(3) **AGEC 33000** (Management Methods For Agricultural Business)
(3) **AGEC 31100** (Accounting for Farm Business Planning) or **MGMT 20000** (Introductory Accounting)	(3) **AGRY 32000** (Genetics)
(3) **ANSC 22100** (Principles of Animal Nutrition)	(4) **ANSC 23000** (Physiology of Domestic Animals)
(3) Chemistry or physics selective	(3) Additional written communication selective
(3) Written or oral communication selective	(1) Animal sciences selective
(15)	(3) Social science selective
	(17)

Junior Year

Fifth Semester	*Sixth Semester*
(3) **STAT 30100** (Elementary Statistical Methods)	(3) Agricultural economics, economics or management selective
(3) Agricultural economics, economics or management selective	(4) Animal genetics selective
(3) Animal nutrition selective	(3) Animal physiology selective
(3) Animal products selective	(3) Humanities or social science selective
(3) Humanities selective	(2) Mathematics and science selective
(15)	(15)

Senior Year

Seventh Semester	*Eighth Semester*
(1) **ANSC 48100** (Contemporary Issues in Animal Sciences)	(3) Agricultural economics, economics or management selective
(3) Agricultural economics, economics or management selective	(2) Animal sciences selective
(3) Animal production/management selective	(10) Electives
(2) Animal sciences selective	
(3) Humanities or social science selective (30000+)	
(5) Electives	
(17)	(15)

Major: Animal Sciences (ASCI) Fall 2012
Concentration: Agribusiness[1] (ANAG)

Name: _____

Date:_____ Advisor: _____

(.5) AGR 10100 - Ag Orientation[2] _____

(.5) AGR 11400 - ANSC Orientation[2] _____

(12-13) Written and Oral Communication[3]

ENGL 10800/10600	(3-4)	_____
COM 11400	(3)	_____
Written or Oral Com Elective (ENGL/COM 20000+)	(3)	_____
Add. Written Com Elective (See list)	(3)	_____

(18) Social Sciences and Humanities*[4]

Economics Elective		
AGEC 21700	(3)	_____
Humanities Electives	(6)	
_____		_____
_____		_____
Social Science Elective	(3)	_____
_____		_____
Add. Humanities or soc. sci.	(6)	
_____	( )	_____
_____	( )	_____

*A minimum of three credits must be 30000+ level and a minimum of 12 credits must be outside College of Ag.

(28) Math & Basic Sciences[5]

BIOL 11000	(4)	_____
BIOL 11100	(4)	_____
CHM 11100	(3)	_____
CHM 11200*	(3)	_____
MA 22000	(3)	_____
STAT 30100[6]	(3)	_____
AGRY 32000	(3)	_____
Chemistry/Physics Elective	(3)	_____
Math & Science Elective	(2)	_____

*If CHM 11200 and 11600 are taken, only CHM 11600 can be used towards graduation.

Multicultural Awareness Requirement[10]

_____ (0) _____

(51) Departmental Requirements

ECON/MGMT[7]	[22]	
AGEC 20200	[1]	_____
AGEC 20300	[3]	_____
AGEC 33000	[3]	_____
MGMT 20000 or AGEC 31100	[3]	_____
_____	[ ]	_____
_____	[ ]	_____
_____	[ ]	_____
_____	[ ]	_____
Required ANSC Courses	[9]	
ANSC 18100[2]	(1)	_____
ANSC 22100	(3)	_____
ANSC 23000	(4)	_____
ANSC 48100	(1)	_____
ANSC Restricted Electives[8]	[(24)]**	
Genetics	[2-4]	_____
Nutrition	[3]	_____
Physiology	[2-3]	_____
Production/Mgmt	[3]	_____
Products	[3-4]	_____
ANSC Electives[9]	(7-11)	
_____	( )	_____
_____	( )	_____
_____	( )	_____
_____	( )	_____

**Eighteen (18) of ANSC credits must be $\geq$ 30100.

(15) Electives

_____	( )	_____
_____	( )	_____
_____	( )	_____
_____	( )	_____
_____	( )	_____

International Understanding Requirement[11]

_____	(0)	_____
_____	(0)	_____
_____	(0)	_____

Capstone Experience[12]

_____ (0) _____

[1]Thirty-two credits must be 30000+ level at Purdue or regional campuses. Additional detail is on the reverse side.

Agribusiness (ANAG)

Opportunities: Sales and service of animal health products, feed, production and equipment firms, livestock representatives for banks and other lending organizations, insurance companies and public relations.

1. Minimum number of credits required for graduation is 130. For ANSC majors, all ANSC courses must be taken for a grade except for ANSC 29300/49300. Cumulative GPA for ANSC courses must be ≥ 2.00 to graduate. All ANSC courses taken for a grade will be part of the ANSC index regardless of whether it can be used in the plan of study. A minimum of 32 credits must be 30000+ level taken at Purdue University or its regional campuses. If credit from another university is transferred to Purdue and posted as 30000+, it does not count toward the 30000 level requirement. The following are not applicable as credit toward graduation: CHM 10000; ENGL 10000, 10900; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 490A. Of MA 15200, 15300, 15400 and 15800, only one course can be used as an selective.
2. All ANSC students classified as 1 are required to take AGR 10100 and AGR 11400. ANSC students classified as 1 or 2 are required to take ANSC 18100. Transfers are not required to take AGR 10100 or ANSC 18100. Credit is not waived; 130 hours is the minimum to graduate.
3. Students who earn an "A" or "B" in ENGL 10800 are exempt from one credit of Written and Oral Communication requirements and total graduation requirements. Those who do not earn an "A" or "B" in ENGL 10800 must complete six credits of American Sign Language (ASL), Communication (COM 20000+), English (ENGL 20000+) or (3) EDCI 44000 (Methods of Teaching Agricultural Education) to fulfill the Ag core requirements. To complete the ANSC Communication requirements, an additional 3 credits of written communication elective must be taken from a list. AGR 20100 can be used as a written or oral communication elective or as an additional written communication elective. ANSC 38100 can be used as an additional written communication elective.
4. A minimum of 18 credit hours are needed to satisfy the Social Sciences and Humanities requirement. A minimum of 3 credits must be 30000+ level and a minimum of 12 credits must be outside College of Ag.

   *Economics - 3 Credits**

   (3) AGEC 20400 (Introduction to Resource Economics and Environmental Policy)
   (3) AGEC 21700 (Economics)
   (3) ECON 21000 (Principles of Economics)
   (3) ECON 25100 (Microeconomics)
   (3) ECON 25200 (Macroeconomics)

   *AGEC 21700 is preferred; plan of study may include either AGEC 21700 or ECON 21000, but not both.

   Humanities - 6 Credits

   Agriculture (Limited to AGR 20100)
   Band (Limited to 3 credits)
   Classics
   Educational Leadership and Cultural Foundations (Limited to EDST 20000)
   English Literature**
   Foreign Languages and Literature***
   History
   Interdisciplinary Studies
   Philosophy
   Visual and Performing Arts

   **See approved list of literature courses.

   ***A foreign language is not required for a B.S. degree in the COA. A minimum of 6 credits of a foreign language must be earned to be included in a plan of study to meet Humanities or International Understanding requirements. If only 3 credits of a foreign language are earned, they may be only used in a plan of study as an elective.

   Social Sciences - 3 Credits

   Agricultural Economics****
   Agriculture (Limited to AGR 20100)
   Agronomy (Limited to AGRY 39900 – Afghanistan)
   Anthropology
   Economics
   Political Science
   Psychological Sciences
   Psyco-educational Studies (Limited to EDPS 23500 and 26500)
   Sociology

   ****Limited to six credits of AGEC 25000, 30500, 34000, 40600, 41000, 41500, 45000, or 49800.
5. See approved list of Mathematics and Sciences. Only 8 credits from BIOL 11000, 11100, 12100, 13100, 13600-13900, 20100, 20200, 20300, 20400, 21100 and 21200 can be used towards graduation.
6. Statistics may include STAT 30100, 50100 or 50300.
7. ECON/MGMT Requirements: AGEC 20200, 20300 and 33000; MGMT 20000 or AGEC 31100, but not both. Twelve (12) additional hours must be completed from the following courses: ≥ MGMT 20100; ≥ ECON 21900; AGEC 22000 or AGEC ≥ 30500. Highly Recommended: AGEC 33100.
8. Animal Science Restricted Electives. At least 1 course in each of the 5 areas must be completed. Eighteen of the ANSC credits in ANSC restricted electives plus ANSC electives must be ≥ 30100. F = fall semester; S = spring semester.

Genetics	Nutrition	Physiology	Production/Mgmt	Products
ANSC 31100 (F,S)	ANSC 32400 (S)	ANSC 33200 (S)	ANSC 44000 (F)	ANSC 30100 (F)
ANSC 51100 (F)	ANSC 52200 (F)	ANSC 33300 (F,S)	ANSC 44100 (F)	ANSC 35100 (S)
ANSC 51400 (F)	ANSC 52400 (S)	ANSC 53500 (S)	ANSC 44200 (S)	FS 36800 (F)
BIOL 41500 (F)		ANSC 55100 (S)	ANSC 44300 (S)	
		ANSC 55500 (S)	ANSC 44400 (F)	
			ANSC 44500 (S)	
			ANSC 44600 (F)	

9. Recommended: ANSC 49100/ANSC 49300. Both ANSC 10200 and 10600 can be used as an ANSC elective. Combination of ANSC 37000, 37100, 37200, 47000, 47100 and 47200 cannot exceed 3 credits towards ANSC electives.
10. Multicultural Awareness Requirement: This requirement may be met by taking AGR 20100, an appropriate course from the multicultural elective list or successful completion of a work experience (AGR 49600).
11. International Understanding: A minimum of 9 credits may be taken from the International Understanding list, equivalent study abroad programs, international work experiences or international travel course. Courses that satisfy international understanding criteria can be used at appropriate places for credit in the POS.

    Capstone experience: ANSC 48100 plus one course from production/management block (ANSC 44000-44600).

Agribusiness (ANAG)

AGEC 20200 Spreadsheet Use in Agricultural Business Sem. 1 and 2. lab 2, cr. 1.

Use of computer spreadsheets in business and financial analysis. Students gain capability to use financial, statistical, and logical spreadsheet functions and a wide variety of other spreadsheet capabilities. Accounting, finance, and management principles are put into practice in a spreadsheet environment. Mr. Cook.

AGEC 20300 Introductory Microeconomics for Food and Agribusiness Sem. 1 and 2. Class 3, cr. 3.

This course introduces the application of microeconomics as used by farms and agribusiness firms. The behavior of individual firms is evaluated as price and output are determined in various market structures (pure competition, pure monopoly, monopolistic competition, and oligopoly). Other topics include pricing and employment of resources, market failure and the social control of industry (government, economic policy, and regulation), cost and production theory.

AGEC 20400 Introduction to Resource Economics and Environmental Policy Sem. 2. Class, cr. 3.

The course provides an overview of microeconomic theory and its application to issues related to evaluating resource economic issues and environmental policy. Topics discussed include efficiency, sustainability, valuation, externalities, governmental policies, and benefit cost analysis.

AGEC 22000 Economics of Agricultural Markets Sem. 1 and 2. Class 3, cr. 3. Prerequisite: AGEC 20300 or AGEC 20400 or ECON 25100.

Types of markets; middlemen and their services; the relationship of production and consumption; price determining factors. Consideration given to major marketing issues, such as decentralization, integration, costs and margins, government regulations, marketing orders, promotion, grades and standards, and cooperatives.

AGEC 25000 Economic Geography of World Food and Resources Sem. 1 and 2. Class 3, cr. 3.

A study of the important issues and economic decisions about worldwide resource use for food and fiber production as influenced by geography, climate, history, social institutions, national self-interest, and the environment.

AGEC 30500 Agricultural Prices Sem. 1. Class 3, cr. 3. Prerequisite: AGEC 22000, ECON 25100 and STAT 30500.

Analysis of prices and the movement of farm product prices; relations of farm product prices to farm input and other prices; conceptual and statistical analysis of agricultural supply and demand relationships; application of price analysis, price forecasting, agricultural outlook, agricultural policy; adjustment of farming to new price conditions.

AGEC 31000 Farm Organization Sem. 1 and 2. Class 2, lab 2, cr. 3.

Economic factors controlling success in farming; types of farming; business records and analysis; adjustment in organization to meet changing economic conditions; organization and management of successful farms.

AGEC 31100 Accounting for Farm Business Planning Sem. 1 and 2. Class 2, lab 2, cr. 3.

This course emphasizes the development of procedures for providing and using data in decision making. Methods will be addressed for finding and organizing both financial and physical data to provide the business information needed in planning and control. Topics discussed include budgeting, reporting unit costs of production, measuring profitability and wealth accumulation, estimating credit needs and income tax liability, and evaluating the strengths and weaknesses of the business as the basis for improving the business. A computerized commercial farm business accounting package will be thoroughly presented.

AGEC 32100 Principles of Commodity Marketing Sem. 1. Class 3, cr. 3. Prerequisite: AGEC 20300 or AGEC 20400 or ECON 25100.

An in-depth background on the origin, operation, and application of futures and options in risk management for agriculture. Covers grain, livestock, and yield futures and options. Applications of futures and options to price and yield risk management is provided. Comparison of expected results from various risk managemnt alternatives and decision making processes to use in selecting a risk management strategy.

AGEC 32700 Principles of Food and Agribusiness Marketing Sem. 1. cr. 3

This course is a study of the major components of marketing decisions made by food and agribusiness firms. The course examines the marketing process, market research, marketing opportunities, and marketing strategies. Students will work on developing skills for evaluating and making marketing decisions.

AGEC 33000 Management Methods for Agricultural Business Sem. 1 and 2. Class 3, cr. 3.

Management of nonfarm, agriculturally related businesses. Topics include tools for management decision making, legal forms of business organization, basics of accounting, and important financial management techniques. Case studies and computer simulation game.

AGEC 33100 Principles of Selling in Agricultural Business* Sem. 1 and 2. Class 3, cr. 3.

The principles of salemanship and their application to the agricultural business. Topics include attitudes and value systems, basic behavioral patterns, the purchase decision process, relationship of sales to marketing, selling strategies, preparing for sales calls, making sales presentations, handling objections, and closing sales. Emphasis is placed on application of principles to real-world situations and on building selling skills through class projects.

AGEC 33300 Food Distribution - A Retailing Perspective Sem. 2 Class 3, cr. 3.

Distribution factors that affect the food industry. Particular attention to the food wholesaling and retailing sectors. Presentation of economic tools to evaluate performance in the food industry. Discussion of the relative importance of each of the major departments in the modern supermarket. Discussion of current and future industry prototypes. Student teams will work in local supermarkets conducting and presenting traffic study information to store management.

AGEC 34000 Introduction to World Agricultural Development Sem. 1. Class 3, cr. 3

An introduction to the problems and opportunities in agricultural development, including current demand and supply conditions in world agriculture, the development of production technology and marketing institutions, the role of international trade and trade policy, and the interdependence of the U.S. and other countries. Emphasis is placed on the analytical tools needed to understand and anticipate economic change, and the interaction of governments and markets.

AGEC 35200 Quantitative Techniques for Firm Decision Making Sem. 1. Class 3, cr. 3. Prerequisite: STAT 30100.

Introduction to mathematical programming and computing as an aid to agricultural decision-making by firms, linear programming, game theory and strategy, simulation, the waiting-line problem, the equipment replacement decision, and multiproduct scheduling methods.

AGEC 40600 Natural Resource and Environmental Economics (FNR 40600) Sem. 1. Class 3, cr. 3. Prerequisite: AGEC 20300 or AGEC 20400 or ECON 25100.

Introduction to economic models of renewable and nonrenewable natural resources and the use of these models in the analysis of current resource use and environmental issues.

AGEC 41000 Agricultural Policy Sem. 1. Class 3, cr. 3. Prerequisite: AGEC 21700 and ECON 25100.

Economic analysis of U.S. food and agricultural policy; current and past farm legislation; international trade; agricultural policies in selected countries; domestic and foreign food assistance; structural change; agricultural research policy; macroeconomic linkages with the agricultural sector; and emerging environmental policy issues, land and water use.

AGEC 41100 Farm Management Sem. 1. Class 2, lab 4, cr. 4. Prerequisite: AGEC 31000 and (AGEC 31100 or MGMT 20000).

Principles of farm organization and management, farmer interviews, and the application of computerized farm decision-making methods.

AGEC 41500 Community and Resource Development Sem. 2. Class 3, cr. 3.

Principles and structures of group decision making for improving income and quality of living for people, including analysis of private and public interest in economic and social planning.

AGEC 42100 Advanced Commodity Marketing Sem. 2. Class 3, cr. 3. Prerequisite: AGEC 32100.

Application of commodity marketing principles to grain, livestock, and other commodity sectors. Applications include hedging, speculation, risk management, and fundamental and technical price analysis. Examination and testing of pricing strategies and the development of commodity marketing plans.

AGEC 42400 Financial Management of Agricultural Business Sem. 1. Class 3, lab 2, cr. 4. Prerequisite: MGMT 20000.

A study of the major types of financial decisions made by agriculturally related firms, including investment in inventory, receivables and case, property, plant, and equipment; sources and types of short-term, intermediate, and long-term capital; legal patterns of the business organization, emphasis on implementation involving agribusiness case problems.

AGEC 42500 Estate Planning and Property Transfer Sem. 1. Class 2, cr. 2.

The ownership and transfer of farm business property. Includes tax and other implications of life estates, trust arrangements, sale of property, and charitable contributions.

AGEC 42700 Advanced Agribusiness Marketing Sem. 1. Class 3, cr. 3. Prerequisite: AGEC 32700 or MGMT 32300.

Application of marketing principles to market planning, research, and analysis. Development of strategic marketing plans for agribusiness.

AGEC 42800 Vertical Coordination Sem. 2. Class 3, cr. 1. Prerequisite: AGEC 22000 and 32100. Course meets during weeks 6-10.

Study of the vertical relationships between firms and/or individuals in the agricultural marketing chain. The focus is on firm and individual decision making in the context of a broad view of the U.S. and world food systems. Contracting, alliances, and vertical integration will be studied with extensive use of cases to illustrate the concepts. Students will be challenged to evaluate alternative coordination arrangements with respect to cost, income distribution, risk, and responsiveness to changing consumer preferences.

AGEC 42900 Agribusiness Marketing Workshop Sem. 2. Class 2, cr. 2. Prerequisite: AGEC 42700.

Research, development, and presentation of a strategic agribusiness marketing plan.

AGEC 43000 Agricultural and Food Business Strategy Sem. 1 and 2. Class 3, cr. 3. Prerequisite: [AGEC 42400 or MGMT 31000] and [AGEC 32700 or MGMT 32300].

An advanced course in business planning and strategy for potential agribusiness and food firm managers. Focuses on development of viable business strategy in the context of the firm's market and its internal condition. Makes extensive use of case studies that document management dilemmas of agribusiness firms, ranging from those providing inputs to agricultural producers to firms involved in the retail distribution of food.

AGEC 43100 Advanced Agri-Sales and Marketing* Sem. 1. Class 4, cr. 4. Prerequisite: AGEC 33100 and 42600. For sales and marketing majors classified 7 or 8.

Advanced techniques of salesmanship, field application of selling techniques, improving communication skills, study of agribusiness marketing strategies, interaction with industry agri-marketers, and strategies for career development in agri-marketing.

AGEC 45000 International Agricultural Trade Sem. 1. Class 3, cr. 3. Prerequisite: AGEC 21700.

Study of U.S. agricultural trade with emphasis on international trade theory, exchange rates and their determination, relationships between domestic agricultural policies and trade policies and analysis of institutional arrangements for world trade in agricultural products.

AGEC 45100 Applied Econometrics Sem. 2. Class 3, cr. 3. Prerequisite: STAT 30100.

Application of strategies to economic problems. Simple and multiple regression, dummy variables, logit analysis, time series, and forecasting.

AGEC 45500 Agricultural Law Sem. 1. Class 3, cr. 3.

Selected general legal topics (courts, contracts, torts, property and commercial law) with emphasis on farming problems (e.g., landowner-tenant, grain contracts, fences, and animal liability), and cases.

AGEC 45600 Federal Income Tax Law Sem. 2. Class 3, cr. 3.

Introduction to the federal income tax laws applicable to individuals and small business with emphasis on the farming business. The course includes management implications and the policy basis for the tax law system. Techniques and practice for the preparation of selected forms will be included. There will be limited exposure to taxation of partnerships, corporations, estates, and to federal gift and estate tax law.

AGEC 49800 (AGRY 39900) Afghanistan: Development Challenges Sem. 1. Class 3, cr. 3.

The social and economic challenges Afghanistan faces as the country tries to initiate programs to promote social and economic development while emerging from years of war and instability will be discussed.

CHM 25700 Organic Chemistry Sem. 1 and 2. Class 4, cr. 4. Prerequisite: CHM 11200 or 11600.

Introductory organic chemistry. Emphasis is on structure, nomenclature, reactions, and theory as applied to simple organic compounds. This course is designed for students who may be planning to take additional chemistry, especially biochemistry.

ECON 25100 Microeconomics Sem. 1 and 2. SS. Class 3, cr. 3.

Price theory and resource allocation. Emphasis is on developing a detailed understanding of the principles of microeconomic analysis and their application to market behavior and public policy issues.

ECON 25200 Macroeconomics Sem. 1 and 2. SS. Class 3, cr. 3.

Introduction to macroeconomic theory. The course develops a theoretical framework permitting an analysis of the forces affecting national income, employment, interest rates, and the rate of inflation. Emphasis is placed upon the role of government fiscal and monetary policy in achieving full employment and stable prices.

ECON 34000 Intermediate Microeconomic Theory Sem. 1 and 2. Class 3, cr. 3. Prerequisite: ECON 25100 and at least two calculus courses or consent of instructor.

Consumer behavior and demand, decisions under uncertainty, production and cost, factor demand, market structure, general equilibrium and welfare. Emphasis on the tools used to analyze the behavior of individual economic units.

MGMT 20000 Introductory Accounting Sem. 1 and 2. SS. Class 3, cr. 3.

The objectives of the course are to help students: (1) understand what is in financial statements and what the statements say about a business, (2) identify the business activities that were responsible for the amounts that appear in the statements, and (3) understand how, when, and at what amount the effects of manager and employee actions will appear in the statements.

MGMT 44500 Investment Management Sem. 1 and 2. Class 3, cr. 3. Prerequisite: MGMT 20000.

Examination of investment alternatives relevant to the individual and/or family-unit investor. Operations of the markets in which securities are traded. Theory and application of security valuation, portfolio construction, capital markets, and performance evaluation. Particular attention given to fixed income securities, common stocks, options, investment companies, and other popular investment alternatives.

MGMT 45500 Legal Background for Business I Sem. 1 and 2. SS. Class 3, cr. 3.

Nature and place of law in our society, national and international, social and moral bases of law enactment, regulation of business, legal liability, and enforcement procedures. Special emphasis on torts, contracts, and agency.

PHYS 21400 The Nature of Physical Science I Sem. 1 and 2. Class 3, cr. 3.

Development of basic concepts and theories in physical science; a terminal course.

Major: Animal Sciences (ASCI)
Concentration: Behavior/Well-being (BEHV)

Opportunities

Students desiring a balance of animal production, behavioral sciences, and well-being are best served by this option.

Desirable Interests

Careers are available as managers of animal production units (e.g., beef cow-calf or feed lot manager, flock supervisor, swine manager, or horse trainer and breeder). Limited career opportunities may be available as an animal trainer, zoo environment enhancement specialist, companion animal consultants, breed association animal well-being specialist, and pet safety education specialist for a humane society. Those students interested in advanced studies could become animal behavior consultants or scientists at universities.

Academic Preparation

In addition to taking a basic core of 33 credits in Animal Sciences subjects, students take advanced courses in inorganic chemistry, two semesters of organic chemistry with laboratory, and a course in biochemistry with laboratory. To fulfill requirements for the behavior/well-being electives, students can choose from a list that includes courses in biology, philosophy, veterinary medicine and animal sciences. These courses emphasize behavior of small and large animals and ethics of animal use.

MAJOR: ANIMAL SCIENCES (ASCI)
CONCENTRATION: BEHAVIOR/WELL-BEING (BEHV)
Credits required for graduation: 130

Freshman Year

First Semester	*Second Semester*
(0.5) **AGR 10100** (Introduction to the School of Agriculture and Purdue University)	(1) **ANSC 18100** (Orientation to Animal Sciences)
(0.5) **AGR 11400** (Introduction to Animal Sciences Academic Programs)	(4) **BIOL 11100** (Fundamentals of Biology II)
(4) **BIOL 11000** (Fundamentals of Biology I)	(4) **CHM 11600** (General Chemistry)
(4) **CHM 11500** (General Chemistry)	(3) **COM 11400** (Fundamentals of Speech Communication)
(4) **ENGL 10600** (First-Year Composition)	(3) **MA 22400** (Introductory Analysis II)
(3) **MA 22300** (Introductory Analysis I)	(3) Animal sciences selective
(16)	(18)

Sophomore Year

Third Semester	*Fourth Semester*
(3) **ANSC 22100** (Principles of Animal Nutrition)	(3) **AGRY 32000** (Genetics)
(3) **CHM 25500** (Organic Chemistry)	(1) **AGRY 32100** (Genetics Laboratory)
(1) **CHM 25501** (Organic Chemistry Laboratory)	(4) **ANSC 23000** (Physiology of Domestic Animals)
(3) Economics selective	(3) **CHM 25600** (Organic Chemistry)
(3) Behavior/Well-being selective	(1) **CHM 25601** (Organic Chemistry Laboratory)
(3) Written or oral communication selective	(3) Humanities selective
(16)	(15)

Junior Year

Fifth Semester	*Sixth Semester*
(3) **ANSC 40400** (Animal Welfare)	(4) Animal genetics selective
(3) **BCHM 30700** (Biochemistry)	(3) Animal nutrition selective
(3) **STAT 30100** (Elementary Statistical Methods)	(3) Behavior/Well-being selective
(3) Animal physiology selective	(3) Humanities selective
(3) Animal products selective	(3) Additional written or oral communication selective
(3) Social science selective	
(18)	(16)

Senior Year

Seventh Semester	*Eighth Semester*
(1) **ANSC 48100** (Contemporary Issues in Animal Sciences)	(2) Animal sciences selective
(3) Animal production/management selective	(3) Social science or humanities selective (30000+)
(3) Animal sciences selective	(10) Electives
(3) Social science or humanities selective	
(3) Behavior/Well-being selective	
(3) Elective	
(16)	(15)

Major: Animal Sciences (ASCI)
Concentration: Behavior/Well-being (BEHV) [1]

Fall 2012

(.5) AGR 10100 - Ag Orientation[2] _____

(.5) AGR 11400 – ANSC Orientation[2] _____

(12-13) Written and Oral Communication[3]

ENGL 10800/16800	(3-4)	____
COM 11400	(3)	____
Written or Oral Com Elective	(3)	____
Add. Written Com Elective	(3)	____

(18) Social Sciences and Humanities*[4]

Economics Elective	(3)	
_____		_____
Humanities Electives	(6)	
_____	( )	_____
_____	( )	_____
Social Science Elective	(3)	_____
_____		_____
Add. Humanities or soc. sci.	(6)	
_____	( )	_____
_____	( )	_____

*A minimum of three credits must be 30000+ level and a minimum of 12 credits must be outside College of Ag.

(29) Mathematics & Sciences[5]

BIOL 11000			(4)	_____
BIOL 11100			(4)	_____
CHM 11500 (4) ____		CHM 11100	(3)	_____
CHM 11600 (4) ____	or	CHM 11200✪	(3)	_____
		CHM 11600	(4)	_____
MA 22300			(3)	_____
MA 22400			(3)	_____
STAT 30100[6]			(3)	_____
AGRY 32000 or BIOL 24100			(3)	_____
AGRY 32100 or BIOL 24200			(1-2)	_____

✪CHM 11200 (3) can not be used for credit after CHM 11600 is taken. When CHM 11100, 11200 and 11600 are taken, only seven credits count towards graduation. CHM 11100, 11500 and 11600 will also satisfy inorganic chemistry requirements.

Multicultural Awareness Requirement[10]

_____ (0) ___

(56) Departmental Requirements

CHM 25500	(3)	_____
CHM 25501	(1)	_____
CHM 25600	(3)	_____
CHM 25601	(1)	_____
BCHM 30700	(3)	_____
Behavior/Well-being Electives[7]	[12]	
ANSC 40400	[3]	_____
_____	[ ]	_____
_____	[ ]	_____
_____	[ ]	_____
_____	[ ]	_____
Required ANSC Courses	[9]	
ANSC 18100[2]	(1)	_____
ANSC 22100	(3)	_____
ANSC 23000	(4)	_____
ANSC 48100	(1)	_____
ANSC Restricted Electives[8]	[(24)]**	
Genetics	[3-4]	_____
Nutrition	[3]	_____
Physiology	[2-3]	_____
Production/Mgmt	[3]	_____
Products	[2-4]	_____
ANSC Electives[9]	(7-11)	
_____	( )	_____
_____	( )	_____

**Eighteen ANSC credits must be ≥ 30100.

(13-14) Electives

_____	( )	_____
_____	( )	_____
_____	( )	_____

International Understanding Requirement[11]

_____	(0)	_____
_____	(0)	_____
_____	(0)	_____

Capstone Experience[12]

_____ (0) _____

[1]Thirty-two credits must be 30000+ level at Purdue or regional campuses.

Behavior/Well-being (BEHV)

Opportunities: Students desiring a balance of animal production, behavioral sciences, and well-being are best served by this option. Careers are available as managers of animal production units (e.g., beef cow-calf or feed lot manager, flock supervisor, swine manager, or horse trainer and breeder). Limited career opportunities may be available as an animal trainer, zoo environment enhancement specialist, companion animal consultants, breed association animal well-being specialist, and pet safety education specialist for a humane society. Those students interested in advanced studies could become animal behavior consultants or scientists at universities.

1. Minimum number of credits required for graduation is 130. For ANSC majors, all ANSC courses must be taken for a grade except for ANSC 29300/49300. Cumulative GPA for ANSC courses must be $\geq$ 2.00 to graduate. All ANSC courses taken for a grade will be part of the ANSC index regardless of whether it can be used in the plan of study. A minimum of 32 credits must be 30000+ level taken at Purdue University or its regional campuses. If credit from another university is transferred to Purdue and posted as 30000+, it does not count toward the 30000 level requirement. The following are not applicable as credit toward graduation: CHM 10000; ENGL 10000, 10900; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000. Of MA 15200, 15300, 15400 and 15800, only one course can be used as a selective.
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   *Economics - 3 Credits**

   (3) AGEC 20300 (Introductory Microeconomics for Food and Agribusiness) or AGEC 20400 (Introduction to Resource Economics and Environmental Policy)
   (3) AGEC 21700 (Economics)
   (3) ECON 21000 (Principles of Economics)
   (3) ECON 25100 (Microeconomics)
   (3) ECON 25200 (Macroeconomics)

   *Plan of study may include either AGEC 21700 or ECON 21000, but not both.

   Humanities - 6 Credits

   Agriculture (Limited to AGR 20100)
   Band (Limited to 3 credits)
   Classics
   Educational Leadership and Cultural Foundations (Limited to EDST 20000)
   English Literature**
   Foreign Languages and Literature***
   History
   Honors (limited to HONR 19900 and 29900)
   Interdisciplinary Studies
   Philosophy
   Visual and Performing Arts

   **See approved list of literature courses.

   *** A foreign language is not required for a B.S. degree in the COA. A minimum of 6 credits of the same foreign language must be earned to be included in a plan of study to meet Humanities and International Understanding requirements. If only 3 credits of a foreign language are earned, they may be only used in a play of study as an elective.

   Social Sciences - 3 Credits

   Agricultural Economics****
   Agriculture (Limited to AGR 20100)
   Agronomy (Limited to AGRY 39900 – Afghanistan)
   Anthropology
   Economics
   Forestry & Natural Resources (Limited to FNR 37500)
   Political Science
   Psychological Sciences
   Psyco-educational Studies (Limited to EDPS 23500 and 26500)
   Sociology

   ****Limited to six credits of AGEC 25000, 30500, 34000, 40600, 41000, 41500, 45000 or 49800.
5. See approved list of Mathematics and Sciences. Only 8 credits from BIOL 11000, 11100, 12100, 12200, 13100, 13600-13900, 20100, 20200, 20300, 20400, 21100 and 21200 can be used towards graduation.
6. Statistics may include STAT 30100, 50100 or 50300.
7. Behavior/Well-being electives: (ANSC 40400 plus 9 credits)

   ANSC 30300 (3) Anim Behav or VCS 41100 (2) Anim Behav
   ANSC 49100/49300 (1-3) Behavior/Well-being Topic
   ANSC 59500 (2) Rec Adv in Animal Welfare
   ANTH 33500 (3) Primate Behavior
   ANTH 53600 (3) Primate Ecology
   BIOL 49300/PSY 49400 (3) Introduction to Ethology
   BIOL 59200 (3) The Evolution of Behavior
   CPB 48000 (2) Seminars in Animal Welfare & Human Animal Interaction
   CPB 49500/CDFS 49500 (1-3) Human and Animal Well-Being
   CPB 59000 (1-3) Special Topics in Animal Welfare and Human-Animal Interactions
   CPB 59500 (2) Animal Issues and the Media
   PHIL 27000 (3) Biomedical Ethics
   PHIL 28000 (3) Ethics and Animals
   PHIL 29000 (3) Environmental Ethics
   PSY 22000 (3) Brain Behavior Introduction
   PSY 33100 (3) Behavior Genetics and Evolution
   VCS 26100 (2) Large Animal Health Management
   VCS 41800 (2) Applied Small Animal Behavior
   VCS 80400 (1) Behavior in Domesticated Animals
8. Animal Science Restricted Electives. Majors are required to complete at least 1 course in each of the 5 areas. Eighteen of the ANSC credits in ANSC restricted electives and ANSC electives must be $\geq$ 30100. F = fall semester; S = spring semester.

Genetics	Nutrition	Physiology	Production/Mgmt	Products
ANSC 31100 (F,S)	ANSC 32400 (S)	ANSC 33200 (S)	ANSC 44000 (F)	ANSC 30100 (F)
ANSC 51100 (F)	ANSC 52200 (F)	ANSC 33300 (F,S)	ANSC 44100 (F)	ANSC 35100 (S)
ANSC 51400 (F)	ANSC 52400 (S)	ANSC 53500 (S)	ANSC 44200 (S)	FS 36800 (F)
BIOL 41500 (F)		ANSC 55100 (S)	ANSC 44300 (S)	
		ANSC 55500 (S)	ANSC 44400 (F)	
			ANSC 44500 (S)	
			ANSC 44600 (F)	

9. Recommended: ANSC 49100/ANSC 49300. Both ANSC 10200 and 10600 can be used as an ANSC elective. Combination of ANSC 37000, 37100, 37200, 47000, 47100, and 47200 cannot exceed 3 credits toward ANSC electives.
10. Multicultural Awareness Requirement: This requirement may be met by taking AGR 20100, an appropriate course from the multicultural elective list or successful completion of a work experience (AGR 49600).
11. International Understanding Requirement: A minimum of 9 credits may be taken from the International Understanding list, equivalent study abroad programs, international work experiences or international travel course. Courses that satisfy international understanding criteria can be used anywhere in the plan of study.
12. Capstone experience: ANSC 48100 plus one course from production/management block (ANSC 44000-44600).

Major: Animal Sciences (ASCI)
Concentration: Biosciences (BISC)

Opportunities

Careers in research in nutrition, growth and development, animal genetics, reproduction, management. Students who aspire to careers in research and teaching in colleges and universities should enroll in this option. It can also be used in preparation for professional careers such as medical doctors, dentists, and employment with pharmaceutical industries.

Desirable Interests

Curiosity and an interest in discovery are essential. There are always new frontiers waiting for exploration. If you enjoyed high school biology, chemistry, mathematics, and physics, you will be challenged by the demands of this option.

Academic Preparation

In addition to taking a basic core of 33 credits in Animal Sciences subjects, students take advanced courses in inorganic chemistry, two semesters of organic chemistry with laboratory, and a course in biochemistry with laboratory. To fulfill requirements for science electives, students often take physics, microbiology or other biology courses. Students should be prepared to take courses in areas such as analytical chemistry and statistics.

MAJOR: ANIMAL SCIENCES (ASCI)
CONCENTRATION: BIOSCIENCES (BISC)
Credits required for graduation: 130

Freshman Year

First Semester	*Second Semester*
(0.5) **AGR 10100** (Introduction to the College of Agriculture and Purdue University)	(1) **ANSC 18100** (Orientation to Animal Sciences)
(0.5) **AGR 11400** (Introduction to Animal Sciences Academic Programs)	(4) **BIOL 11100** (Fundamentals of Biology II)
(4) **BIOL 11000** (Fundamentals of Biology I)	(4) **CHM 11600** (General Chemistry II)
(4) **CHM 11500** (General Chemistry I)	(3) **COM 11400** (Speech)
(4) **ENGL 10006** (First-Year Composition)	(3) **MA 22400** (Introductory Analysis II)
(3) **MA 22300** (Introductory Analysis I)	(3) Animal sciences selective
(16)	(18)

Sophomore Year

Third Semester	*Fourth Semester*
(3) **ANSC 22100** (Principles of Animal Nutrition)	(3) **AGRY 32000** (Genetics)
(3) **CHM 25500** (Organic Chemistry)	(1) **AGRY 32100** (Genetics Laboratory)
(1) **CHM 25501** (Organic Chemistry Laboratory)	(4) **ANSC 23000** (Physiology of Domestic Animals)
(3) Written or oral communication selective	(3) **CHM 25600** (Organic Chemistry)
(3) Economics selective	(1) **CHM 25601** (Organic Chemistry Laboratory)
(3) Science selective	(3) Humanities selective
(16)	(15)

Junior Year

Fifth Semester	*Sixth Semester*
(3) **BCHM 30700** (Biochemistry)	(4) Animal genetics selective
(1) **BCHM 30900** (Biochemistry Laboratory)	(3) Animal nutrition selective
(3) **STAT 30100** (Elementary Statistical Methods)	(3) Humanities selective
(3) Animal physiology selective	(3) Science selective
(3) Animal products selective	(3) Additional written or oral communication selective
(3) Social science selective	
(16)	(16)

Senior Year

Seventh Semester	*Eighth Semester*
(1) **ANSC 48100** (Contemporary Issues in Animal Sciences)	(2) Animal sciences selective
(3) Animal management selective	(3) Humanities or social science selective (30000+)
(3) Animal sciences selective	(3) Science selective
(3) Humanities or social science selective	(9) Electives
(3) Science selective	
(3) Elective	
(16)	(17)

Major: Animal Sciences (ASCI)
Concentration: Biosciences (BISC) [1]

Fall 2012

(.5) AGR 10100 - Ag Orientation[2] _____
(.5) AGR 11400 – ANSC Orientation[2] _____

(12-13) Written and Oral Communication[3]

ENGL 10800/10600	(3-4)	_____
COM 11400	(3)	_____
Written or Oral Com Elective	(3)	_____
Add. Written Com Elective	(3)	_____

(18) Social Sciences and Humanities*[4]

Economics Elective	(3)	
_____		_____
Humanities Electives	(6)	
_____		_____
_____		_____
Social Science Elective	(3)	_____
_____		_____
Add. Humanities or soc. sci.	(6)	
_____	( )	_____
_____	( )	_____

*A minimum of three credits must be 30000+ level and a minimum of 12 credits must be outside College of Ag.

(29) Mathematics & Sciences[5]

BIOL 11000	(4)	_____
BIOL 11100	(4)	_____
CHM 11500 (4) ____	CHM 11100 (3)	_____
CHM 11600 (4) ____ or	CHM 11200✪ (3)	_____
	CHM 11600 (4)	_____
MA 22300	(3)	_____
MA 22400	(3)	_____
STAT 30100[6]	(3)	_____
AGRY 32000 or BIOL 24100	(3)	_____
AGRY 32100 or BIOL 24200	(1-2)	_____

✪Both CHM 11200 and 11600 can not be used for credit. When CHM 11100, 11200 and 11600 are taken, only seven credits count towards graduation. CHM 11100, 11500 and 11500 also will satisfy inorganic CHM requirements.

Multicultural Awareness Requirement[10]

_____ (0) _____

(57) Departmental Requirements

CHM 25500	(3)	_____
CHM 25501	(1)	_____
CHM 25600	(3)	_____
CHM 25601	(1)	_____
BCHM 30700	(3)	_____
BCHM 30900	(1)	_____
Science Electives[7]	[12]	
_____	[ ]	_____
_____	[ ]	_____
_____	[ ]	_____
_____	[ ]	_____
_____	[ ]	_____
Required ANSC Courses	[9]	
ANSC 18100[2]	(1)	_____
ANSC 22100	(3)	_____
ANSC 23000	(4)	_____
ANSC 48100	(1)	_____
ANSC Restricted Electives[8]	[(24)]**	
Genetics	[3-4]	_____
Nutrition	[3]	_____
Physiology	[2-3]	_____
Production/Mgmt	[3]	_____
Products	[2-4]	_____
ANSC Electives[9]	(7-11)	
_____	( )	_____
_____	( )	_____
_____	( )	_____
_____	( )	_____
_____	( )	_____

**Eighteen ANSC credits must be ≥ 30100.

(12) Electives

_____	( )	_____
_____	( )	_____
_____	( )	_____
_____	( )	_____

International Understanding Requirement[11]

_____	(0)	_____
_____	(0)	_____
_____	(0)	_____

Capstone Experience[12]

_____ (0) _____

[1]Thirty-two credits must be 30000+ level at Purdue or regional campuses. Additional detail is on the reverse side.

Biosciences (BISC)

1. Minimum number of credits required for graduation is 130. For ANSC majors, all ANSC courses must be taken for a grade except for ANSC 29300/49300. Cumulative GPA for ANSC courses must be ≥ 2.00 to graduate. All ANSC courses taken for a grade will be part of the ANSC index regardless of whether it can be used in the plan of study. A minimum of 32 credits must be 30000+ level taken at Purdue University or its regional campuses. If credit from another university is transferred to Purdue and posted as 30000+, it does not count toward the 30000 level requirement. The following are not applicable as credit toward graduation: CHM 10000; ENGL 10000, 10900; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000. Of MA 15200, 15300, 15400 and 15800, only one course can be used as a selective.
2. All ANSC students classified as 1 are required to take AGR 101 and AGR 11400. ANSC students classified as 1 or 2 are required to take ANSC 18100. Transfers are not required to take AGR 10100 or ANSC 18100. Credit is not waived; 130 hours is the minimum to graduate.
3. Students who earn an "A" or "B" in ENGL 10800 are exempt from one credit of Written and Oral Communication requirements and total graduation requirements. Those who do not earn an "A" or "B" in ENGL 10800 must complete six credits of American Sign Language (ASL), Communication (COM 20000+), English (ENGL 20000+) or (3) EDCI 44000 (Methods of Teaching Agricultural Education) to fulfill the Ag core requirements. To complete the ANSC Communication requirements, an additional 3 credits of written communication selective must be taken from a list. AGR 20100 can be used as a written or oral communication elective or as an additional written communication elective. ANSC 38100 can be used as an additional written communication elective.
4. A minimum of 18 credit hours are needed to satisfy the Social Sciences and Humanities requirement. A minimum of 3 credits must be 30000+ level and a minimum of 12 credits must be outside College of Ag.

   *Economics - 3 Credits**

   (3) AGEC 20300 (Introductory Microeconomics for Food and Agribusiness) or AGEC 20400 (Introduction to Resource Economics and Environmental Policy)

   (3) AGEC 21700 (Economics) — (3) ECON 25100 (Microeconomics)

   (3) ECON 21000 (Principles of Economics) — (3) ECON 25200 (Macroeconomics)

   *Plan of study may include either AGEC 21700 or ECON 21000, but not both.

   Humanities - 6 Credits

   Agriculture (Limited to AGR 20100)
   Band (Limited to 3 credits)
   Classics
   Educational Leadership and Cultural Foundations (Limited to EDST 20000)
   English Literature**
   Foreign Languages and Literature***
   History
   Honors (limited to HONR 19900 and 29900)
   Interdisciplinary Studies
   Philosophy
   Visual and Performing Arts

   **See approved list of literature courses.

   ***A foreign language is not required for a B.S. degree in the COA. A minimum of 6 credits of the same foreign language must be earned to be included in a plan of study to meet Humanities and International Understanding requirements. If only 3 credits of a foreign language are earned, they may be only used in a play of study as an elective.

   Social Sciences - 3 Credits

   Agricultural Economics****
   Agriculture (Limited to AGR 20100)
   Agronomy
   Anthropology
   Economics
   Forestry & Natural Resources (Limited to FNR 37500)
   Political Science
   Psychological Sciences
   Psyco-educational Studies (Limited to EDPS 23500 and 26500)
   Sociology

   ****Limited to six credits of AGEC 25000, 30500, 34000, 40600, 41000, 41500, 45000 or 49800.
5. See approved list of Mathematics and Sciences. Only 8 credits from BIOL 11000, 11100, 12100, 13100, 13600-13900, 20100, 20200, 20300, 20400, 21100 and 21200 can be used towards graduation.
6. Statistics may include STAT 30100, 50100 or 50300.
7. Science Electives. Twelve (12) credits must be selected from the following:

BCHM 22100	FS 34100	MA > 22400	CHM 22400 or CHM 29000, CHM ≥ 32100, but not CHM 50000, 50200 or 51300.
BCHM ≥ 32200	FS 36200	MCMP 44200	Credit for both CHM 33300 and BCHM 30700 can not be granted.
BIOL ≥ 21200	FS 44200	PHIL 42100	Physics other than PHYS 16000, 21400 or 27000
CS ≥ 14500	HSCI 56000	PHPR 20200	
C&IT 22700	IT 22600, 22700	STAT > 50000	(Exception: STAT 50300 is duplicate of STAT 30100.)
ENTM 52500	IT 34200		

8. Animal Science Restricted Electives. At least 1 course in each of the 5 areas must be completed. Eighteen of the ANSC credits in ANSC restricted electives plus ANSC electives must be ≥ 30100. F = fall semester; S = spring semester.

Genetics	Nutrition	Physiology	Production/Mgmt	Products
ANSC 31100 (F,S)	ANSC 32400 (S)	ANSC 33200 (S)	ANSC 44000 (F)	ANSC 30100 (F)
ANSC 51100 (F)	ANSC 52200 (F)	ANSC 33300 (F,S)	ANSC 44100 (F)	ANSC 35100 (S)
ANSC 51400 (F)	ANSC 52400 (S)	ANSC 53500 (S)	ANSC 44200 (S)	FS 36800 (F)
BIOL 41500 (F)		ANSC 55100 (S)	ANSC 44300 (S)	
		ANSC 55500 (S)	ANSC 44400 (F)	
			ANSC 44500 (S)	
			ANSC 44600 (F)	

9. Highly recommended: ANSC 49100/ANSC 49900. Both ANSC 10200 and 10600 can be used as an ANSC elective. Combination of ANSC 37000, 37100, 37200, 47000, 47100, and 47200 cannot exceed 3 credits towards ANSC electives.
10. Multicultural Awareness Requirement: This requirement may be met by taking AGR 20100, an appropriate course from the multicultural elective list or successful completion of a work experience (AGR 49600).
11. International Understanding Requirement: A minimum of 9 credits may be taken from the International Understanding list, equivalent study abroad programs, international work experiences or international travel course. Courses that satisfy international understanding criteria can be used anywhere in the plan of study.
12. Capstone experience: ANSC 48100 plus one course from production/management block (ANSC 44000-44600).

Major: Animal Sciences (ASCI)
Concentration: Pre-Veterinary Medicine (PRMD)

Opportunities

This option meets the requirements necessary for application to the School of Veterinary Medicine at Purdue University. With proper planning, a student can qualify for the 3+1 Program and receive their B.S. in Animal Sciences after the successful completion of their first year of veterinary school.

Desirable Interests

Veterinary medicine is the science and art that deals with recognition, treatment, control and prevention of disease among animals. It enhances the well-being and production of food and performance animals, and the facilitation of the bond between animals and humans. The veterinary medical profession bears the major responsibility for the health of the nation's livestock and the companion animal population. The role of the veterinarian in public health is very important because human health depends in many respects upon the health of animals in the environment.

Academic Preparation

In addition to taking a basic core of 33 credits in Animal Sciences, students take advanced courses in inorganic chemistry, two semesters of organic chemistry with laboratory, a course in biochemistry and two semesters of physics. Additional courses that are required to be eligible to apply for veterinary school include communication, humanities and genetics with laboratory. Students should be prepared to take courses in areas such as microbiology and statistics.

MAJOR: ANIMAL SCIENCES (ASCI)
CONCENTRATION: PRE-VETERINARY MEDICINE (PRMD)
Credits required for graduation: 130

Freshman Year

First Semester	*Second Semester*
(0.5) **AGR 10100** (Introduction to the College of Agriculture and Purdue University)	(1) **ANSC 18100** (Orientation to Animal Sciences)
(0.5) **AGR 11400** (Introduction to Animal Sciences Academic Programs)	(4) **BIOL 11100** (Fundamentals of Biology II)
(4) **BIOL 11000** (Fundamentals of Biology I)	(4) **CHM 11600** (General Chemistry)
(4) **CHM 11500** (General Chemistry)	(4) **ENGL 10600** (First-Year Composition)
(3) **COM 11400** (Fundamentals of Speech Communication)	(3) **MA 22400** (Introductory Analysis II)
(3) **MA 22300** (Introductory Analysis I)	(1) **VM 10200** (Careers in Veterinary Medicine)
(3) Animal sciences selective	
(18)	(17)

Sophomore Year

Third Semester	*Fourth Semester*
(3) **ANSC 22100** (Principles of Animal Nutrition)	(3) **AGRY 32000** (Genetics)
(3) **BIOL 23100** (Biology III: Cell Structure and Function)	(1) **AGRY 32100** (Genetics Laboratory)
(2) **BIOL 23200** (Laboratory in Biology III: Cell Structure and Function)	(4) **ANSC 23000** (Physiology of Domestic Animals)
(3) **CHM 25500** (Organic Chemistry)	(3) **CHM 25600** (Organic Chemistry)
(1) **CHM 25501** (Organic Chemistry Laboratory)	(1) **CHM 25601** (Organic Chemistry Laboratory)
(3) Economics selective	(3) Humanities selective
(3) Humanities selective	
(18)	(15)

Junior Year

Fifth Semester	*Sixth Semester*
(3) **BCHM 30700** (Biochemistry)	(4) **PHYS 22100** (General Physics)
(4) **PHYS 22000** (General Physics)	(4) **BIOL 22100** (Microbiology)
(3) **STAT 30100** (Elementary Statistical Methods)	(3) Animal nutrition selective
(3) Animal physiology selective	(2) Animal sciences selective
(3) Social science selective	(3) Written or oral communication selective
(16)	(16)

Senior Year

Seventh Semester	*Eighth Semester*
(1) **ANSC 48100** (Contemporary Issues in Animal Sciences)	(3) Animal sciences selective
(4) Animal genetics selective	(3) Animal production/management selective
(3) Animal products selective	(3) Humanities or social science selective (30000+)
(3) Humanities or social science selective	(5) Electives
(3) Additional written or oral communication selective	
(3) Electives	
(17)	(14)

Major: Animal Sciences (ASCI)
Concentration: Pre-Veterinary Medicine (PRMD) [1]

Fall 2012

(.5) AGR 10100 - Ag Orientation[2] _____

(.5) AGR 11400 – ANSC Orientation[2] _____

(12-13) Written and Oral Communication[3]

ENGL 10800/10600	*(3-4)*	_____
COM 11400	*(3)*	_____
Written or Oral Com Elective	(3)	_____
Add. Written Com Elective	*(3)*	_____

(18) Social Sciences and Humanities*[4]

Economics Elective	(3)	
_____		_____
Humanities Electives	(6)	
_____		_____
_____		_____
Social Science Elective	(3)	_____
_____		_____
Add. Humanities or soc. sci.	(6)	
_____		_____
_____		_____

*A minimum of three credits must be 30000+ level and a minimum of 12 credits must be outside College of Ag.

(29) Mathematics & Sciences[5]

BIOL 11000	***(4)***	_____
BIOL 11100	***(4)***	_____
CHM 11500 *(4)* ____ / ***CHM 11600*** *(4)* ____ *or*	***CHM 11100*** *(3)* _____ / ***CHM 11200*** ✪ *(3)* _____ / ***CHM 11600*** *(4)* _____	
MA 22300	**(3)**	_____
MA 22400	**(3)**	_____
STAT 30100[6]	(3)	_____
AGRY 32000 **or** ***BIOL 24100***	(3)	_____
AGRY 32100 **or** ***BIOL 24200***	(1-2)	_____

✪ Both CHM 11200 and 11600 can not be used for credit. When CHM 11100, 11200 and 11600 are taken, only seven credits count towards graduation. CHM 11100, 11500 and 11500 also will satisfy inorganic CHM requirements.

Multicultural Awareness Requirement[10]

_____ (0) _____

(62) Departmental Requirements

BIOL 22100	***(4)***	_____
BIOL 23100	***(3)***	_____
BIOL 23200	***(2)***	_____
CHM 25500 + 25501	***(3) + (1)***	_____
CHM 25600 + 25601	***(3) + (1)***	_____
BCHM 30700	***(3)***	_____
PHYS 22000	***(4)***	_____
PHYS 22100	***(4)***	_____
VM 10200	***(1)***	_____
Required ANSC Courses	[9]	
ANSC 18100[2]	(1)	_____
ANSC 22100	***(3)***	_____
ANSC 23000✶	*(4)*	_____
ANSC 48100	(1)	_____
ANSC Restricted Electives[7]	[(24)]**	
Genetics✶	*[3-4]*	_____
Nutrition✶	*[3]*	_____
Physiology✶	*[2-3]*	_____
Production/Mgmt✶	*[3]*	_____
Products✶	*[2-4]*	_____
ANSC Electives[8]	(7-11)	
_____	( )	_____
_____	( )	_____
_____	( )	_____
_____	( )	_____

**Eighteen ANSC credits must be ≥ 30100.

(6-7) Electives[9]

_____	( )	_____
_____	( )	_____
_____	( )	_____
_____	( )	_____

International Understanding Requirement[11]

_____	(0)	_____
_____	(0)	_____
_____	(0)	_____

Capstone Experience[12]

_____ (0) _____

*Courses in **bold** required to apply for veterinary school.*

[1]Thirty-two credits must be 30000+ level at Purdue campuses.

✶ Additional animal science course requirements for 3 + 1 Program. Minimum total of 100 credits.

Pre-Veterinary Medicine (PRMD)

Opportunities: This option meets the requirements necessary for application to the School of Veterinary Medicine at Purdue University. Courses in bold are required to apply for veterinary school. Additional courses needed to satisfy requirements for the 3+1 Program in ANSC are indicated by the symbol ✶.

1. Minimum number of credits required for graduation is 130. For ANSC majors, all ANSC courses must be taken for a grade except for ANSC 29300/49300. Cumulative GPA for ANSC courses must be ≥ 2.00 to graduate. All ANSC courses taken for a grade will be part of the ANSC index regardless of whether it can be used in the plan of study. A minimum of 32 credits must be 30000+ level taken at Purdue University or its regional campuses. If credit from another university is transferred to Purdue and posted as 30000+, it does not count toward the 30000 level requirement. The following are not applicable as credit toward graduation: CHM 10000; ENGL 10000, 10900; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000. Of MA 15200, 15300, 15400 and 15800, only one course can be used as a selective.
2. All ANSC students classified as 1 are required to take AGR 10100 and AGR 11400. ANSC students classified as 1 or 2 are required to take ANSC 18100. Transfers are not required to take AGR 10100 or ANSC 18100. Credit is not waived; 130 hours is the minimum to graduate.
3. Students who earn an "A" or "B" in ENGL 10800 are exempt from one credit of Written and Oral Communication requirements and total graduation requirements. Those who do not earn an "A" or "B" in ENGL 10800 must complete six credits of American Sign Language (ASL), Communication (COM 20000+), English (ENGL 20000+) or (3) EDCI 44000 (Methods of Teaching Agricultural Education) to fulfill the Ag core requirements. To complete the ANSC Communication requirements, an additional 3 credits of written communication selective must be taken from a list. AGR 20100 can be used as a written or oral communication elective or as an additional written communication elective. ANSC 38100 can be used as an additional written communication elective.
4. A minimum of 18 credit hours are needed to satisfy the Social Sciences and Humanities requirement. A minimum of 3 credits must be 30000+ level and a minimum of 12 credits must be outside College of Ag.

   *Economics - 3 Credits**

   (3) AGEC 20300 (Introductory Microeconomics for Food and Agribusiness) or AGEC 20400 (Introduction to Resource Economics and Environmental Policy)

   (3) AGEC 21700 (Economics)
   (3) ECON 21000 (Principles of Economics)
   (3) ECON 25100 (Microeconomics)
   (3) ECON 25200 (Macroeconomics)

   *Plan of study may include either AGEC 21700 or ECON 21000, but not both.

   Humanities - 6 Credits

   Agriculture (Limited to AGR 20100)
   Band (Limited to 3 credits)
   Classics
   Educational Leadership and Cultural Foundations (Limited to EDST 20000)
   English Literature**
   Foreign Languages and Literature***
   History
   Honors (Limited to HONR 19900 and 29900)
   Interdisciplinary Studies
   Philosophy
   Visual and Performing Arts

   **See approved list of literature courses.

   ***A foreign language is not required for a B.S. degree in the COA. A minimum of 6 credits of the same foreign language must be earned to be included in a plan of study to meet Humanities or International Understanding requirements. If only 3 credits of a foreign language are earned, they may be only used in a play of study as an elective.

   Social Sciences - 3 Credits

   Agricultural Economics****
   Agriculture (Limited to AGR 20100)
   Agronomy (Limited to AGRY 39900 – Afghanistan)
   Anthropology
   Economics
   Forestry & Natural Resources (Limited to FNR 37500)
   Political Science
   Psychological Sciences
   Psyco-educational Studies (Limited to EDPS 23500 and 26500)
   Sociology

   ****Limited to six credits of AGEC 25000, 20500, 34000, 40600, 41000, 41500, 45000 or 49800.
5. See approved list of Mathematics and Sciences. Only 8 credits from BIOL 11000, 11100, 12100, 13100, 13600-13900, 20100, 20200, 20300, 20400, 21100 and 21200 can be used towards graduation.
6. Statistics may include STAT 30100, 50100 or 50300.
7. Animal Science Restricted Electives. Majors are required to complete at least 1 course in each of the 5 areas. Eighteen of the ANSC credits in ANSC restricted electives and ANSC electives must be ≥ 30100. F = fall semester; S = spring semester.

Genetics	**Nutrition**	**Physiology**	**Production/Mgmt**	**Products**
ANSC 311000 (F,S)	ANSC 32400 (S)	ANSC 33200 (S)	ANSC 44000 (F)	ANSC 30100 (F)
ANSC 51100 (F)	ANSC 52200 (F)	ANSC 33300 (F,S)	ANSC 44100 (F)	ANSC 35100 (S)
ANSC 51400 (F)	ANSC 52400 (S)	ANSC 53500 (S)	ANSC 44200 (S)	FS 36800 (F)
BIOL 41500 (F)		ANSC 55100 (S)	ANSC 44300 (S)	
		ANSC 55500 (S)	ANSC 44400 (F)	
			ANSC 44500 (S)	
			ANSC 44600 (F)	

8. Recommended: ANSC 49100/ANSC 49300. Both ANSC 10200 and 10600 can be used as an ANSC elective. Combination of ANSC 37000, 37100, 37200, 47000, 47100 and 47200 can not exceed 3 credits towards ANSC electives.
9. Recommended courses for applicants to veterinary school: animal sciences (including nutrition ANSC 32400); AGEC 21700; BCHM 30900; CHM 22400; CSR 10500, CSR 30900, CSR 34200; ECON 21000, ECON 25100, ECON 25200; ENGL 42000, ENGL 42100; MGMT 20000.
10. Multicultural Awareness Requirement: This requirement may be met by taking AGR 20100, an appropriate course from the multicultural elective list or successful completion of a work experience (AGR 49600).
11. International Understanding Requirement: A minimum of 9 credits may be taken from the International Understanding list, equivalent study abroad programs, international work experiences or international travel course. Courses that satisfy international understanding criteria can be used anywhere in the plan of study.
12. Capstone experience: ANSC 48100 plus one course from production/management block (ANSC 44000-44600).

Checklist for ANSC Pre-Vet Majors
Applying to Vet School at Purdue (70-74 credits)

Name: _____ Advisor: _____ Date: _____

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(1) _____VM 10200

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(4) _____ BIOL 11000 and (4) _____ BIOL 11100
(3) _____ BIOL 23100 and (2) _____ BIOL 23200
(3) _____ AGRY 32000 or (3) _____ BIOL 24100
(1) _____ AGRY 32100 or (2) _____ BIOL 24200

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(4) _____ ENGL 10600 or (3) _____ ENGL 10800
(3) _____ COM 11400

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(3) _____ ANSC 22100

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(4) _____ CHM 11500 or
- (3) ____ CHM 11100
- (3) ____ CHM 11200
- (4) ____ CHM 11600

(Note: CHM 11200 (3) can not be used for credit if CHM 11600 is taken. If CHM 11100, 11200 and 11600 are taken, only seven credits count towards graduation.)

(4) _____ CHM 11600

(3) ____ CHM 25500 + (1) ____ CHM 25501 or (4) ____ CHM 25700 + (1) ____ CHM 25701

(3) ____ CHM 25600
(1) ____ CHM 25601

(3) _____ BCHM 30700 or (3) ____ BCHM 56100 + (3) ____ BCHM 56200 or (3) _____ CHM 33300

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(4) _____ BIOL 22100 or (3) _____ BIOL 43800 and (2) _____ BIOL 43900

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(4) _____ PHYS 22000
(4) _____ PHYS 22100

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(3) _____ MA 22300 or (5) _____ MA 16100 or (4) _____ MA 16500
(3) _____ STAT 30100 or (3) _____ STAT 50300

Humanities/Social Sciences Electives:

(3) _____ _____ (3) _____ _____
(3) _____ _____

Not required, but highly recommended:

_____ Prin. of Economics
_____ ANSC 10200
_____ ANSC 32400
_____ CSR 10500, 30900, 34200
_____ BCHM 30900
_____ ENGL 42000, 42100
_____ AGEC 31100 or MGMT 20000
_____ BIOL 46600
_____ BIOL 53700
_____ CHM 22400

Pre-Vet Curriculum and B.S. in ANSC (3+1 Program)
Minimum: 100 credits

Name: _____ Advisor: _____ Date: _____

(.5) _____ AGR 10100 plus (.5) _____ AGR 11400 and (1) _____ VM 10200

(4) _____ BIOL 11000 and (4) _____ BIOL 11100
(3) _____ BIOL 23100 and (2) _____ BIOL 23200
(3) _____ AGRY 32000 or (3) _____ BIOL 24100
(1) _____ AGRY 32100 or (2) _____ BIOL 24200

(4) _____ ENGL 10600 or (3) _____ ENGL 10800
(3) _____ COM 11400

(3) _____ Economics (AGEC 20300, 20400, 21700 or ECON 21000, 25100 or 25200)

(3) _____ ANSC 22100
(4) _____ ANSC 23000

(4) _____ CHM 11500 or { (3) ____ CHM 11100, (3) ____ CHM 11200, (4) ____ CHM 11600 }
and
(4) ____ CHM 11600

{ (3) ____ CHM 25500, (1) ____ CHM 25501 } or { (4) ____ CHM 25700, (1) ____ CHM 25701 }

{ (3) ____ CHM 25600, (1) ____ CHM 25601 } or (4) _____ CHM 22400

(3) _____ BCHM 30700 or { (3) ____ BCHM 56100, (3) ____ BCHM 56200 } or (3) _____ CHM 33300

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(4) _____ BIOL 22100 or (3) _____ BIOL 43800 and (2) _____ BIOL 43900

(4) _____ PHYS 22000 and (4) _____ PHYS 22100

(3) _____ MA 22300 or (5) _____ MA 16100 or (4) _____ MA 16500
(3) _____ MA 22400 or (5) _____ MA 16200 or (4) _____ MA 16600
(3) _____ STAT 30100 or (3) _____ STAT 50300

Humanities or Social Sciences Electives:
(3) _____ _____
(3) _____ _____

Requirement:
_____ (0) International Understanding
_____ (0) Multicultural Awareness

Agriculture Electives (ANSC courses; 14-17 credits):

(3) _____ Nutrition (ANSC 32400, 52200 or 52400)
(3) _____ Production/Management (ANSC 44000-44600)
(2-3) _____ Physiology (ANSC 33200, 33300, 53500, 55100 or 55500)
(3-4) _____ Genetics (ANSC 31100, 51100, 51400 or BIOL 41500)
(2-4) _____ Products (ANSC 30100, 35100 or 36800)

BCHM 22100 Analytical Biochemistry Sem. 2. Class 2, lab 3, cr. 3. Prerequisite: CHM 11600.

Discussion of qualitative and quantitative analysis of biological compounds including pH measurement and control, spectrophotometry, measurement of radioactivity; theoretical basis of various separation techniques including chromatography and electrophoresis; application of these methods to separation and analysis of biological compounds. Laboratory sessions will provide practical experience in the use of these methods. This course is designed for biochemistry majors.

BCHM 30700 Biochemistry Sem. 1 and 2. Class 3, cr. 3. Prerequisite: CHM 25700.

Introduction to the chemistry, function, and metabolism of compounds found in the living organism.

BCHM 30900 Biochemistry Laboratory Sem. 1 and 2. Lab 3, cr. 1. Prerequisite or corequisite: BCHM 30700.

Experiments that introduce methods for analysis and separation of biological molecules and that illustrate the biochemical and metabolic concepts covered in BCHM 30700.

BCHM 32200 Analytic Biochemistry Sem. 1. Class 1, lab 3, cr. 2. Prerequisite or corequisite: BCHM 22100 and 30700.

Modern biochemical methods are used to isolate, analyze, and study the properties of a great variety of materials, such as amino acids; proteins, including several enzymes; mono, oligo, and polysaccharides; fats; and nucleic acids. Emphasis is on experimentation. The course is designed for biochemistry majors.

BCHM 56100 General Biochemistry I Sem. 1 and 2. Class 3, cr. 3. Prerequisite: CHM 25600 or 26200.

Protein structure and function, properties of enzymes in aqueous solution, mechanisms of enzyme action, basic concepts of metabolism, sugar and fatty acid metabolism, introduction to biological membranes.

BCHM 56200 General Biochemistry II Sem. 1 and 2. Class 3, cr. 3. Prerequisite: BCHM 56100.

Amino acid metabolism, photosynthesis, biosynthesis of membrane lipids and steroids, biosynthesis of nucleotides, structure and function of nucleic acids, protein synthesis, and control of gene expression.

BIOL 23100 Biology III: Cell Structure and Function Sem. 1. Class 3, cr. 3. Prerequisite or corequisite: BIOL 13100 and CHM 11600.

An introduction to modern cell biology through an examination of the physical and chemical properties that lead to an understanding of the molecular basis for cell function.

BIOL 23200 Laboratory in Biology III: Cell Structure and Function Sem. 1. lab 4, cr. 2. Prerequisite or corequisitie: BIOL 23100.

Laboratory exercises designed to illustrate the properties, functions, and growth of prokaryotic and eukaryotic cells and to introduce the student to modern experimental methods used to study cells and their separated components.

BIOL 24100 Biology IV: Genetics and Molecular Biology Sem. 2. Class 2, cr. 2. Prerequisite: BIOL 23100 and CHM 11600; prerequisite or corequisite: CHM 25700.

An introduction to the principles of classical genetics and to molecular genetics. Topics covered are transmission of the genetic material (both in eukaryotes and prokaryotes), changes in the genetic material, structure, and function of the genetic material, and the manipulation of genetic material (recombinant DNA technology).

BIOL 24200 Laboratory in Biology IV: Genetics and Molecular Biology Sem. 2. lab 4, cr. 2. Prerequisite or corequisite: BIOL 24100.

Experiments in classical and modern genetics and exercises to acquaint the students with basic techniques in molecular biology.

BIOL 41100 Laboratory in Molecular Biology Sem. 1. lab 6, cr. 3. Prerequisite: BIOL 24200.

This course is divided into two major sections. In the first section, students will study topics dealing with protein biology and biochemistry such as enzyme action and isolation, molecular evolution, and the detection and molecular basis of human disease. Techniques that will be used for these experiments include electrophoresis (both native and SDS denatured), chromatography (affinity and gel filtration), peptide mapping analysis, and the Western blot procedure. In the second section of the course, students will perform experiments that deal with DNA structure and function. These experiments stress the organization and complexity of the prokaryotic and eukaryotic genomes, gene function and regulation, and the structure of the eukaryotic chromosome. Techniques that will be used in this section include restriction nuclease mapping, isolation of organelles, gene cloning, and Southern blot hybridization procedures. Professor Anderson.

BIOL 41500 Introduction to Molecular Biology Sem. 1. Class 3, cr. 3. Prerequisite: BIOL 23100, 23200 and 24100.

An introduction to modern molecular biology techniques and how they are used to address current topics in gene regulation. Emphasis will be placed on experimental procedures and model systems, such as site-directed mutagenesis of isolated genes and their subsequent introduction into prokaryotic and eukaryotic cells. Topics will address the molecular control mechanisms associated with DNA replication, RNA transcription, RNA processing, and differential gene expression.

BIOL 42000 Eukaryotic Cell Biology Sem. 1. Class 3, cr. 3. Prerequisite: (BIOL 23100 and 24100) and (CHM 25500 and 25700). Corequisite: BCHM 56100.

Composition, structure, regulation, and growth of eukaryotic cells.

BIOL 51500 Molecular Genetics Sem. 1. Class 3, cr. 3. Prerequisite: BIOL 24100 and CHM 33300.

A molecular approach to the problems of structure, duplication, mutation, and phenotypic expression of genetic material.

CHM 22400 Introductory Quantitative Analysis Sem. 2. Class 3, lab 4, cr. 4. Prerequisite: CHM 11200 or 11600.

Introduction to titrimetric, gravimetric, and instrumental methods of analysis.

CHM 25500 Organic Chemistry Sem. 1 and 2. Class 3, cr. 3. Prerequisite: CHM 11200 or 11600.

A study of aliphatic and aromatic hydrocarbons and their simple derivatives in terms of (a) structure, bonding, etc.; (b) general syntheses and reactions; and (c) a logical modern rationale for fundamental phenomena as supported by reactivity orders, orientation effects, stereochemistry, and relative rates.

CHM 25501 Organic Chemistry Laboratory Sem. 1 and 2. lab 3, cr. 1. Prerequisite or corequisite: CHM 25500.

Laboratory experiments to accompany CHM 25500, illustrating methods of separation and the more common techniques and methods for preparing various types of organic compounds.

CHM 25600 Organic Chemistry Sem. 1 and 2. Class 3, cr. 3. Prerequisite: CHM 25500.

A continuation of CHM 25500 with various functional groups such as the carboxyl, amino, etc., and including such polyfunctional natural products as carbohydrates and peptides.

CHM 25601 Organic Chemistry Laboratory Sem. 1 and 2. lab 3, cr. 1. Prerequisite or corequisite: CHM 25600.

A continuation of CHM 25501, but emphasizing methods for identifying organic compounds, including simple unknowns.

CHM 42400 Analytical Chemistry II Sem. 1. Class 3, lab 4, cr. 4. Prerequisite: CHM 32100; prerequisite or corequisite: CHM 37300 and 37400.

Principles and application of optical and electrical methods of chemical analysis, including topics in instrumentation.

CHM 53800 Molecular Biotechnology Sem. 2. Class 3, cr. 3. Prerequisite: CHM 53300.

An examination of modern tools for the characterization, manipulation, and design of nucleic acids and proteins.

PHYS 22000 General Physics Sem. 1 and 2. SS. Class 3, lab 2, cr. 4.

Mechanics, heat, and sound for students not specializing in physics.

PHYS 22100 General Physics Sem. 1 and 2. SS. Class 3, lab 2, cr. 4. Prerequisite: PHYS 22000.

Electricity, light, and modern physics for students not specializing in physics.

VM 10200 Careers in Veterinary Medicine Sem. 2. Class 1, cr. 1.

Overview of the field of veterinary medicine presently and as anticipated for the future. Presentations will include descriptions and discussions of the nature of the professional activity, organization of veterinary medicine, career opportunities, issues confronting the profession, and the admission requirements of the profession.

Major: Animal Sciences (ASCI)
Concentration: Animal Production (ANPR)

Opportunities

Production and management of beef, dairy, fish, horse, poultry, sheep and swine production enterprises. This includes young men and women who own, hope to own, or would like to operate animal production units owned by someone else. Also includes employment as field or service representatives in various commodity organizations, livestock salesmen or buyers for meat processor or commission companies involved with marketing. A limited number of public relations jobs with various breed organizations also are available. Careers as extension agents are possible.

Desirable Interests

If you have been a participant in 4-H activities and have enjoyed those experiences, you may want to explore this option. Interest in and experience working with animals are necessary. Developing interests in more than one species of animals would be helpful.

Academic Preparation

A basic core of 33 credits in Animal Sciences courses can be supplemented with courses in crop and forage production, buildings and machinery, weeds and their control, animal disease and farm management. Other areas for exploration include entomology, crop production, soils and animal marketing strategies.

MAJOR: ANIMAL SCIENCES (ASCI)
CONCENTRATION: PRODUCTION (ANPR)
Credits required for graduation: 130

Freshman Year	
First Semester	***Second Semester***
(0.5) **AGR 10100** (Introduction to the College of Agriculture and Purdue University)	(1) **ANSC 18100** (Orientation to Animal Sciences)
(0.5) **AGR 11400** (Introduction to Animal Sciences Academic Programs)	(4) **BIOL 11100** (Fundamentals of Biology II)
(4) **BIOL 11000** (Fundamentals of Biology I)	(3) **CHM 11200** (General Chemistry II)
(3) **CHM 11100** (General Chemistry I)	(4) **ENGL 10600** (First-Year Composition)
(3) **COM 11400** (Fundamentals of Speech Communication)	(3) Humanities selective
(3) **MA 22000** (Introduction to Calculus)	(3) Elective
(3) Animal sciences selective	
(17)	(18)
Sophomore Year	
Third Semester	***Fourth Semester***
(3) **ANSC 22100** (Principles of Animal Nutrition)	(3) **AGRY 32000** (Genetics)
(4) **CHM 25700** (Organic Chemistry)	(4) **ANSC 23000** (Physiology of Domestic Animals)
(3) Economics selective	(3) **BCHM 30700** (Biochemistry)
(1) Mathematics and science selective	(3) Financial management selective
(3) Social science selective	(3) Humanities selective
(3) Written or oral communication selective	
(17)	(16)
Junior Year	
Fifth Semester	***Sixth Semester***
(4) **BIOL 22100** (Introduction to Microbiology)	(4) Animal genetics selective
(3) **STAT 30100** (Elementary Statistical Methods)	(3) Animal physiology selective
(3) Animal nutrition selective	(3) Enterprise management selective
(3) Animal products selective	(3) Production/Management selective (Non-ANSC)
(3) Humanities or social science selective	(3) Elective
(16)	(16)
Senior Year	
Seventh Semester	***Eighth Semester***
(1) **ANSC 48100** (Contemporary Issues in Animal Sciences)	(3) Animal sciences selective
(3) Animal production/management selective	(3) Production/Management selective (Non-ANSC)
(2) Animal sciences selective	(9) Electives
(3) Enterprise management selective	
(3) Humanities or social science selective (30000+)	
(3) Additional written or oral communication selective	
(15)	(15)

Major: Animal Sciences (ASCI)
Concentration: Animal Production (ANPR) [1]

Fall 2012

(.5) AGR 10100 - Ag Orientation[2] _____

(.5) AGR 11400 – ANSC Orientation[2] _____

(12-13) Written and Oral Communication[3]

ENGL 10800/10600	(3-4)	_____
COM 11400	(3)	_____
Written or Oral Com Elective	(3)	_____
Add. Written Com Elective	(3)	_____

(18) Social Sciences and Humanities*[4]

Economics Elective	(3)	
_____		_____
Humanities Electives	(6)	
_____		_____
_____		_____
Social Science Elective	(3)	_____
_____		_____
Add. Humanities or soc. sci.	(6)	
_____	( )	_____
_____	( )	_____

*A minimum of three credits must be 30000+ level and a minimum of 12 credits must be outside College of Ag.

(28) Math & Basic Sciences[5]

BIOL 11000	(4)	_____
BIOL 11100	(4)	_____
CHM 11100	(3)	_____
CHM 11200*	(3)	_____
CHM 25700	(4)	_____
MA 22000	(3)	_____
STAT 30100[6]	(3)	_____
AGRY 32000	(3)	_____
Math & Science Elective	(1)	_____

*If CHM 11200 and 11600 are taken, only CHM 11600 can be used towards graduation.

Multicultural Awareness Requirement[12]

_____ (0) _____

(55) Departmental Requirements

Financial Mgmt Elective[7]	(3)	
_____		_____
Enterprise Mgmt Electives[8]	(6)	
_____	( )	_____
_____	( )	_____
_____	( )	_____
Production/Mgmt Electives (Non-ANSC)[9]	(6)	_____
_____	( )	_____
_____	( )	_____
BCHM 30700	(3)	_____
BIOL 22100	(4)	_____
Required ANSC Courses	[9]	
ANSC 18100[2]	(1)	_____
ANSC 22100	(3)	_____
ANSC 23000	(4)	_____
ANSC 48100	(1)	_____
ANSC Restricted Electives[10]	[(24)]**	
Genetics	[3-4]	_____
Nutrition	[3]	_____
Physiology	[2-3]	_____
Production/Mgmt	[3]	_____
Products	[2-4]	_____
ANSC Electives[11]	(7-11)	
_____	( )	_____
_____	( )	_____
_____	( )	_____
_____	( )	_____

**Eighteen ANSC credits must be ≥ 30100.

(15) Electives

_____	( )	_____
_____	( )	_____
_____	( )	_____
_____	( )	_____
_____	( )	_____

International Understanding Requirement[13]

_____	(0)	_____
_____	(0)	_____
_____	(0)	_____

Capstone Experience[14]

_____ (0) _____

[1]Thirty-two credits must be 30000+ level at Purdue or regional campuses.

Animal Production (ANPR)

Opportunities: Production and management of beef, dairy, fish, horse, poultry, sheep and swine enterprises. Also includes employment as field or service representatives in various commodity organizations, livestock salesmen or buyers for meat processor or commission companies involved with marketing. A limited number of public relations jobs with various breed organizations also are available. Careers as extension agents are possible.

1. Minimum number of credits required for graduation is 130. For ANSC majors, all ANSC courses must be taken for a grade except for ANSC 29300/49300. Cumulative GPA for ANSC courses must be ≥ 2.00 to graduate. All ANSC courses taken for a grade will be part of the ANSC index regardless of whether it can be used in the plan of study. A minimum of 32 credits must be 30000+ level taken at Purdue University or its regional campuses. If credit from another university is transferred to Purdue and posted as 30000+, it does not count toward the 30000 level requirement. The following are not applicable as credit toward graduation: CHM 10000; ENGL 10000, 10900; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; PHYS 14900; STAT 11300, 11400; and all General Studies courses except for GS 49000. Of MA 15200, 15300, 15400 and 15800, only one course can be used as a selective.
2. All ANSC students classified as 1 are required to take AGR 10100 and AGR 11400. ANSC students classified as 1 or 2 are required to take ANSC 18100. Transfers are not required to take AGR 10100 or ANSC 18100. Credit is not waived; 130 hours is the minimum to graduate.
3. Students who earn an "A" or "B" in ENGL 10800 are exempt from one credit of Written and Oral Communication requirements and total graduation requirements. Those who do not earn an "A" or "B" in ENGL 10800 must complete six credits of American Sign Language (ASL), Communication (COM 20000+), English (ENGL 20000+) or (3) EDCI 44000 (Methods of Teaching Agricultural Education) to fulfill the Ag core requirements. To complete the ANSC Communication requirements, an additional 3 credits of written communication selective must be taken from a list. AGR 20100 can be used as a written or oral communication elective or as an additional written communication elective. ANSC 38100 can be used as an additional written communication elective.
4. A minimum of 18 credit hours are needed to satisfy the Social Sciences and Humanities requirement. A minimum of 3 credits must be 30000+ level and a minimum of 12 credits must be outside the College of Ag.

   *Economics - 3 Credits**

   (3) AGEC 20300 (Introductory Microeconomics for Food and Agribusiness) or AGEC 20400 (Introduction to Resource Economics and Environmental Policy)

   (3) AGEC 21700 (Economics)
   (3) ECON 21000 (Principles of Economics)
   (3) ECON 25100 (Microeconomics)
   (3) ECON 25200 (Macroeconomics)

   *Plan of study may include either AGEC 21700 or ECON 21000, but not both.

   Humanities - 6 Credits

   Agriculture (Limited to AGR 20100)
   Band (Limited to 3 credits)
   Classics
   Educational Leadership and Cultural Foundations (Limited to EDST 20000)
   English Literature**
   Foreign Languages and Literature***
   History
   Honors (limited to HONR 19900 and 29900)
   Interdisciplinary Studies
   Philosophy
   Visual and Performing Arts

   **See approved list of literature courses.

   ***A foreign language is not required for a B.S. degree in the COA. A minimum of 6 credits of the same foreign language must be earned to be included in a plan of study to meet Humanities and International Understanding requirements. If only 3 credits of a foreign language are earned, they may be only used in a plan of study as an elective.

   Social Sciences - 3 Credits

   Agricultural Economics****
   Agriculture (Limited to AGR 20100)
   Agronomy (Limited to AGRY 39900 – Afghanistan)
   Anthropology
   Economics
   Forestry & Natural Resources (Limited to FNR 37500)
   Political Science
   Psychological Sciences
   Psyco-educational Studies (Limited to EDPS 23500 and 26500)
   Sociology

   ****Limited to six credits of AGEC 25000, 30500, 34000, 40600, 41000, 41500, 45000 or 49800.
5. See approved list of Mathematics and Sciences. Only 8 credits from BIOL 11000, 11100, 12100, 13100, 13600-13900, 20100, 20200, 20300, 20400, 21100 and 21200 can be used towards graduation.
6. Statistics may include STAT 30100, 50100 or 50300.
7. Financial Management Elective. One of the following 3-credit courses must be completed: AGEC 31100, AGEC 33000, CSR 34200, MGMT 20000.
8. Enterprise Management Electives. A minimum of 6 credits from the following courses must be completed:

AGEC 20300 (3)	AGEC 33000 (3)	AGEC 42100 (3)	Highly Recommended: AGEC 22000, 32100, and 42100.
AGEC 22000 (3)	AGEC 33100 (3)	AGEC 42400 (4)	
AGEC 30500 (3)	AGEC 33300 (3)	AGEC 42500 (2)	
AGEC 31000 (3)	AGEC 41100 (4)	AGEC 42700 (3)	
AGEC 32100 (3)	AGEC 41200 (1-3)	AGEC 43000 (3)	
AGEC 32700 (3)	AGEC 41400 (2)	AGEC/MGMT 45500 (3)	

9. Production/Management Electives (Non-ANSC). A minimum of 6 credits from the following courses must be completed:

Agricultural Systems	**Agronomy**	**Botany & Plant Pathology**	**Entomology**	**Cross-Listed Courses**
ASM 20100 (3)	AGRY 25500 (3)	BTNY 30400 (3)	ENTM 20600 (2)	BTNY/ENTM 20000 (2)
ASM 22200 (3)	AGRY 36500 (3)		ENTM 20700 (1)	BTNY/AGRY/ENTM 38000 (1)
ASM 24500 (3)	AGRY 37500 (3)		ENTM 52500 (3)	
ASM 33300 (3)	AGRY 50500 (3)			
ASM 33600 (3)				
ASM 42000 (3)				
ASM 57000 (3)				

10. Animal Science Restricted Electives. At least 1 course in each of the 5 areas must be completed. Eighteen of the ANSC credits in ANSC restricted electives and ANSC electives must be ≥ 30100. F = fall semester; S = spring semester.

Genetics	**Nutrition**	**Physiology**	**Production/Mgmt.**	**Products**
ANSC 31100 (F,S)	ANSC 32400 (S)	ANSC 33200 (S)	ANSC 44000 (F)	ANSC 30100 (F)
ANSC 51100 (F)	ANSC 52200 (F)	ANSC 33300 (F,S)	ANSC 44100 (F)	ANSC 35100 (S)
ANSC 51400 (F)	ANSC 52400 (S)	ANSC 53500 (S)	ANSC 44200 (S)	FS 36800 (F)
BIOL 41500 (F)		ANSC 55100 (S)	ANSC 44300 (S)	
		ANSC 55500 (S)	ANSC 44400 (F)	
			ANSC 44500 (S)	
			ANSC 44600 (F)	

11. Recommended: ANSC 49100/ANSC 49300. Both ANSC 10200 and 10600 can be used as an ANSC elective. Combination of ANSC 37000, 37100, 37200, 47000, 47100 and 47200 can not exceed 3 credits towards ANSC electives.
12. Multicultural Awareness Requirement: This requirement may be met by taking AGR 20100, an appropriate course from the multicultural elective list or successful completion of a work experience (AGR 49600).
13. International Understanding Requirement: A minimum of 9 credits may be taken from the International Understanding list, equivalent study abroad programs, international work experiences or international travel course. Courses that satisfy international understanding criteria can be used anywhere in the plan of study.
14. Capstone experience: ANSC 48100 plus one course from production/management block (ANSC 44000-44600).

Animal Production (ANPR)

AGEC 31100 Accounting for Farm Business Planning Sem. 1 and 2. Class 2, lab 2, cr. 3.

This course emphasizes the development of procedures for providing and using data in decision making. Methods will be addressed for finding and organizing both financial and physical data to provide the business information needed in planning and control. Topics discussed include budgeting, reporting unit costs of production, measuring profitability and wealth accumulation, estimating credit needs and income tax liability, and evaluating the strengths and weaknesses of the business as the basis for improving the business. A computerized commercial farm business accounting package will be thoroughly presented.

AGEC 33000 Management Methods for Agricultural Business Sem. 1 and 2. Class 3, cr. 3.

Management of nonfarm, agriculturally related businesses. Topics include tools for management decision making, legal forms of business organization, basics of accounting, and important financial management techniques. Case studies and computer simulation game.

AGRY 25500 Soil Science (NRES 25500) Sem. 1 and 2. Class 1, rec. 1, lab 3, cr. 3. Prerequisite: CHM 11200 or 11600.

Differences in soils, soils genesis; physical, chemical, and biological properties of soils; relation of soils to problems of land use and pollution; soil management relative to tillage, erosion, drainage, moisture supply, temperature, aeration, fertility, and plant nutrition. Introduction to fertilizer chemistry and use.

AGRY 36500 Soil Fertility Sem. 2. Class 2, lab 2, cr. 3. Prerequisite: AGRY 25500 or 27000.

Principles of soil chemistry and physics influencing plant nutrition; emphasis on diagnosis and solution of problems on soil reaction and nutrient status; fertilizer chemistry and use; reaction of pesticides and growth regulators with soils.

AGRY 37500 Crop Production Systems Sem. 1 and 2. Class 3, cr. 3.

Factors affecting management decisions in crop production systems. Development of small grain and row cropping systems. Interaction of factors affecting efficient production systems, including seed selection, tillage, planting management, pest management, and harvesting and storage considerations.

AGRY 50500 Forage Management Sem. 2. Class 3, cr. 3.

The study of the role of economically important crop species in the soil-plant-animal complex. Physiology, utilization, and management of forage species will be emphasized.

ASM 20100 Construction and Maintenance Sem. 1 and 2. Class 2, lab 3, cr. 3.

Fundamental principles in the selection and use of tools for the construction and maintenance of agricultural and related facilities, equipment, and machines. Areas covered include small engines, concrete and masonry, wood, plumbing, electricity, and metal.

ASM 22200 Crop Production Equipment Sem. 1 Class 2, lab 2, cr. 3. Prerequisite: ASM 23100.

Principles of machine performance, capacity, machinery components, and operation. Study of tractors, trucks, utility vehicles, and combines. Equipment topics include chemical application, tillage tools, planters and seeders, hay and forage harvesters, electronic monitors and controllers. Computer-based analysis of equipment sizing and systems selection.

ASM 24500 Materials Handling and Processing Sem. 2. Class 2, lab 2, cr. 3. Prerequisite: ASM 23100.

Principles of materials handling and processing. Physical properties and characteristics of food, fiber, and feed materials as related to harvesting, handling, processing, and storage. Processing of agricultural materials including drying, preservation, size reduction (e.g. grinding, crushing, shredding), mixing and blending, refrigeration, extrusion, and pelleting. Conveying and transport systems with consideration of their effects on damage and quality. The course elements are tied together by a treatment of scheduling and coordination of biologically based systems, which involve production, handling, quality control, and processing.

ASM 33300 Facilities Planning and Management Sem. 2. Class 2, lab 2, cr. 3. Prerequisite: ASM 23100.

Principles of facility (system) planning and management involving buildings, equipment, and materials handling and flow. Student teams select a case firm (problem) with instructor approval. Principles learned week by week are applied to the development of an overall plan for the complex, over the course of the semester. Case examples can include firms handling supplies, seeds, grains, feeds, chemicals, wastes, and farm produce, as well as farming operations producing grain, forage, and/or livestock products. Students will learn to use AutoCAD to develop drawings, without prior computer drafting experience.

ASM 33600 Environmental Systems Management Sem. 1. Class 3, cr. 3.

Analysis of environmental systems with special emphasis on non-urban and agribusiness needs. Technological and sociological solutions to environmental problems. Computer-based tools are used to analyze global environmental issues , chemical use and management, waste disposal and management, water and air quality, soil and water conservation, sustainable agriculture, regulatory and policy issues.

ASM 42000 Electric Power and Controls Sem. 1 and 2. Class 2, lab 2, cr. 3.

Fundamentals and application of electric power for agricultural facilities; safe wiring principles; operation and performance characteristics of electric motors; applications of control systems that include monitors, sensors, relays, and programmable logic controllers.

ASM 57000 Agricultural Structures Sem. 2. Class 2, lab 2, cr. 3. Prerequisite: ASM 33300.

Structural, environmental and functional problems of farm buildings; planning, estimating, and evaluating materials; costs, construction procedures, and practices.

BIOL 22100 Introduction to Microbiology Sem. 1 and 2. Class 3, lab 2, cr. 4. Prerequisite: (BIOL 11000 or 11100) and (CHM 11200 or 11600).

The isolation, growth, structure, function, heredity, identification, classification, and ecology of microorganisms; their role in nature; and significance to man.

CHM 25700 Organic Chemistry Sem. 1 and 2. Class 4, cr. 4. Prerequisite: CHM 11200 or 11600.

Introductory organic chemistry. Emphasis is on structure, nomenclature, reactions, and theory as applied to simple organic compounds. This course is designed for students who may be planning to take additional chemistry, especially biochemistry.

CSR 34200 Personal Finance Sem. 1 and 2. SS. Class 3, cr. 3.

Lectures and discussion on problems of managing one's personal finances. Covers budgeting; use of, and cost of, credit; life and property insurance; income and estate taxation; housing; saving and investments; wills, trusts, and estate planning.

MGMT 20000 Introductory Accounting Sem. 1 and 2. SS. Class 3, cr. 3.

The objectives of the course are to help students: (1) understand what is in financial statements and what the statements say about a business, (2) identify the business activities that were responsible for the amounts that appear in the statements, and (3) understand how, when, and at what amount the effects of manager and employee actions will appear in the statements.

Major: Animal Sciences (ASCI)
Concentration: Animal Products (ANPD)

Opportunities

Product development managers, quality control technicians, process supervisors and sales in milk, egg and meat processing plants; graders and inspectors at the farm or manufacturing level for milk, meat and eggs; animal production evaluation, improvement, and sales; livestock buyers for meat-packing companies. Other opportunities include research and development of animal food products.

Desirable Interests

You should have strong interests in crating, fabricating, merchandising or promoting new and traditional animal products of milk, meat or egg origin. You should also enjoy the challenge of applying basic information to the solution of practical problems as well as the challenge of working in the consumer driven industries.

Academic Preparation

Selected courses in meat, egg and dairy product science, food processing and carcass evaluation would be required. Subjects in food microbiology, food quality control, food chemistry and biochemistry must be taken in addition to 33 core credits in Animal Sciences. You may wish to specialize in one of the commodity areas or tailor your plan of study on a broader base.

MAJOR: ANIMAL SCIENCES (ASCI)
CONCENTRATION: ANIMAL PRODUCTS (ANPD)
Credits required for graduation: 130

Freshman Year	
First Semester	***Second Semester***
(0.5) **AGR 10100** (Introduction to the College of Agriculture and Purdue University)	(1) **ANSC 18100** (Orientation to Animal Sciences)
(0.5) **AGR 11400** (Introduction to Animal Sciences Academic Programs)	(4) **BIOL 11100** (Fundamentals of Biology II)
(4) **BIOL 11000** (Fundamentals of Biology I)	(3) **CHM 11200** (General Chemistry II)
(3) **CHM 11100** (General Chemistry I)	(4) **ENGL 10600** (First-Year Composition)
(3) **COM 11400** (Fundamentals of Speech Communication)	(2) Animal sciences selective
(3) **MA 22000** (Introduction to Calculus)	(3) Humanities selective
(3) Animal sciences selective	
(17)	(17)
Sophomore Year	
Third Semester	***Fourth Semester***
(3) **ANSC 22100** (Principles of Animal Nutrition)	(3) **AGRY 32000** (Genetics)
(4) **CHM 25700** (Organic Chemistry)	(4) **ANSC 23000** (Physiology of Domestic Animals)
(3) Economics selective	(3) **BCHM 307** (Biochemistry)
(3) Social science selective	(1) **BCHM 309** (Biochemistry Laboratory)
(1) Mathematics and science selective	(3) Business management selective
(3) Written or oral communication selective	(3) Humanities selective
(17)	(17)
Junior Year	
Fifth Semester	***Sixth Semester***
(4) **BIOL 22100** (Introduction to Microbiology)	(4) Animal genetics selective
(3) **STAT 301 00**(Elementary Statistical Methods)	(3) Animal physiology selective
(3) Animal nutrition selective	(3) Humanities or social science selective
(3) Animal products selective	(6) Electives
(3) Electives	
(16)	(16)
Senior Year	
Seventh Semester	***Eighth Semester***
(1) **ANSC 48100** (Contemporary Issues in Animal Sciences)	(3) Animal sciences selective
(3) Animal production/management selective	(3) Additional written or oral communication selective
(3) Food science selective	(8) Electives
(3) Humanities or social science selective (30000+)	
(6) Electives	
(16)	(14)

Major: Animal Sciences (ASCI)
Concentration: Animal Products (ANPD) [1]

Fall 2012

(.5) AGR 10100 - Ag Orientation[2] _____

(.5) AGR 11400 – ANSC Orientation[2] _____

(12-13) Written and Oral Communication[3]

ENGL 10800/10600	(3-4)	_____
COM 11400	(3)	_____
Written or Oral Com Elective	(3)	_____
Add. Written Com Elective	(3)	_____

(18) Social Sciences and Humanities*[4]

Economics Elective	(3)	
_____		_____
Humanities Electives	(6)	
_____		_____
_____		_____
Social Science Elective	(3)	_____
_____		_____
Add. Humanities or soc. sci.	(6)	
_____	( )	_____
_____	( )	_____

*A minimum of three credits must be 30000+ level and a minimum of 12 credits must be outside College of Ag.

(28) Mathematics and Sciences[5]

BIOL 11000	(4)	_____
BIOL 11100	(4)	_____
CHM 11100	(3)	_____
CHM 11200*	(3)	_____
CHM 25700	(4)	_____
MA 22000	(3)	_____
STAT 30100[6]	(3)	_____
AGRY 32000	(3)	_____
Math & Science Elective	(1)	_____

*If CHM 11200 and 11600 are taken, only CHM 11600 can be used towards graduation.

Multicultural Awareness Requirement[12]

_____ (0) _____

(47-48) Departmental Requirements

Food Science Elective[7]	(3-4)	
_____		_____
Business/Mgmt Elective[8]	(3)	
_____		_____
BCHM 30700	(3)	_____
BCHM 30900	(1)	_____
BIOL 22100	(4)	_____
Required ANSC Courses	[9]	
ANSC 18100[2]	(1)	_____
ANSC 22100	(3)	_____
ANSC 23000	(4)	_____
ANSC 48100	(1)	_____
ANSC Restricted Electives[9]	[(24)]**	
Genetics	[3-4]	_____
Nutrition	[3]	_____
Physiology	[2-3]	_____
Production/Mgmt	[3]	_____
Products	[2-4]	_____
ANSC Electives[10]	(7-11)	
_____	( )	_____
_____	( )	_____
_____	( )	_____
_____	( )	_____
_____	( )	_____
_____	( )	_____

**Eighteen ANSC credits must be $\geq$ 30100.

(22-23) Electives[11]

_____	( )	_____
_____	( )	_____
_____	( )	_____
_____	( )	_____
_____	( )	_____
_____	( )	_____
_____	( )	_____

International Understanding Requirement[13]

_____	(0)	_____
_____	(0)	_____
_____	(0)	_____

Capstone Experience[14]

_____ (0) _____

[1]Thirty-two credits must be 30000+ level at Purdue or regional campuses.

Animal Products (ANPD)

Opportunities: Product development managers, quality control technicians, process supervisors and sales in milk, egg and meat processing plants; graders and inspectors at the farm or manufacturing level for milk, meat and eggs; animal production evaluation, improvement, and sales; livestock buyers for meat-packing companies. Other opportunities include research and development of animal food products.

1. Minimum number of credits required for graduation is 130. For ANSC majors, all ANSC courses must be taken for a grade except for ANSC 29300/49300. Cumulative GPA for ANSC courses must be ≥ 2.00 to graduate. All ANSC courses taken for a grade will be part of the ANSC index regardless of whether it can be used in the plan of study. A minimum of 32 credits must be 30000+ level taken at Purdue University or its regional campuses. If credit from another university is transferred to Purdue and posted as 30000+, it does not count toward the 30000 level requirement. The following are not applicable as credit toward graduation: CHM 10000; ENGL 10000, 10900; ENGR 19100, 19200, 19300; MA 11100, 12300, 13300, 13400, 15100; PHYS 14900; STAT 11300, 11400; and all General Studies courses except GS 49000. Of MA 15200, 15300, 15400 and 15800, only one course can be used as a selective.
2. All ANSC students classified as 1 are required to take AGR 10100 and AGR 11400. ANSC students classified as 1 or 2 are required to take ANSC 18100. Transfers are not required to take AGR 10100 or ANSC 18100. Credit is not waived; 130 hours is the minimum to graduate.
3. Students who earn an "A" or "B" in ENGL 10800 are exempt from one credit of Written and Oral Communication requirements and total graduation requirements. Those who do not earn an "A" or "B" in ENGL 10800 must complete six credits of American Sign Language (ASL), Communication (COM 20000+), English (ENGL 20000+) or (3) EDCI 44000 (Methods of Teaching Agricultural Education) to fulfill the Ag core requirements. To complete the ANSC Communication requirements, an additional 3 credits of written communication selective must be taken from a list. AGR 20100 can be used as a written or oral communication elective or as an additional written communication elective. ANSC 38100 can be used as an additional written communication elective.
4. A minimum of 18 credit hours are needed to satisfy the Social Sciences and Humanities requirement. A minimum of 3 credits must be 30000+ level and a minimum of 12 credits must be outside the College of Agriculture

   *Economics - 3 Credits**

   (3) AGEC 20300 (Introductory Microeconomics for Food and Agribusiness) or AGEC 20400 (Introduction to Resource Economics and Environmental Policy)

   (3) AGEC 21700 (Economics) — (3) ECON 25100 (Microeconomics)

   (3) ECON 21000 (Principles of Economics) — (3) ECON 25200 (Macroeconomics)

   *Plan of study may include either AGEC 21700 or ECON 21000, but not both.

   Humanities - 6 Credits

   Agriculture (Limited to AGR 20100)
   Band (Limited to 3 credits)
   Classics
   Educational Leadership and Cultural Foundations (Limited to EDST 20000)
   English Literature**
   Foreign Languages and Literature***
   History
   Honors (limited to HONR 19900 and 29900)
   Interdisciplinary Studies
   Philosophy
   Visual and Performing Arts

   **See approved list of literature courses.

   ***A foreign language is not required for a B.S. degree in the COA. A minimum of 6 credits of the same foreign language must be earned to be included in a plan of study to meet Humanities and International Understanding requirements. If only 3 credits of a foreign language are earned, they may be only used in a plan of study as an elective.

   Social Sciences - 3 Credits

   Agricultural Economics****
   Agriculture (Limited to AGR 20100)
   Agronomy (Limited to AGRY 39900 – Afghanistan)
   Anthropology
   Economics
   Forestry & Natural Resources (Limited to FNR 37500)
   Political Science
   Psychological Sciences
   Psyco-educational Studies (Limited to EDPS 23500 and 26500)
   Sociology

   ****Limited to six credits of AGEC 25000, 30500, 34000, 40600, 41000, 41500, 45000 or 49800.
5. See approved list of Mathematics and Sciences. Only 8 credits from BIOL 11000, 11100, 12100, 13100, 13600-13900, 20100, 20200, 20300, 20400, 21100 and 21200 can be used towards graduation.
6. Statistics may include STAT 30100, 50100 or 50300.
7. Food Science Elective. One of the following courses must be completed: FS 34100 (3), FS 45300 (4) or FS 36200 (3).
8. Business Management Elective. One of the following 3-credit courses must be completed: AGEC 31100, AGEC 33000, CSR 34200, ECON 25100 or MGMT 20000.
9. Animal Science Restricted Electives. At least 1 course in each of the 5 areas must be completed. Eighteen of the ANSC credits in ANSC restricted electives and ANSC electives must be ≥ 30100. F = fall semester; S = spring semester.

Genetics	Nutrition	Physiology	Production/Mgmt	Products
ANSC 31100 (F,S)	ANSC 32400 (S)	ANSC 33200 (S)	ANSC 44000 (F)	ANSC 30100 (F)
ANSC 51100 (F)	ANSC 52200 (F)	ANSC 33300 (F,S)	ANSC 44100 (F)	ANSC 35100 (S)
ANSC 51400 (F)	ANSC 52400 (S)	ANSC 53500 (S)	ANSC 44200 (S)	FS 36800 (F)
BIOL 41500 (F)		ANSC 55100 (S)	ANSC 44300 (S)	
		ANSC 55500 (S)	ANSC 44400 (F)	
			ANSC 44500 (S)	
			ANSC 44600 (F)	

10. Recommended: ANSC 49100/ANSC 49300. Both ANSC 10200 and 10600 can be used as an ANSC elective. Combination of 37000, 37100, 37200, 47000, 47100 and 47200 cannot exceed 3 credits towards ANSC electives.
11. If a student has an interest in food product business, the following courses are highly recommended: AGEC 22000, AGEC 31100, AGEC 32100, AGEC 33100, AGEC 33300, AGEC 42100 and MGMT 20000.
12. Multicultural Awareness Requirement: This requirement may be met by taking AGR 20100, an appropriate course from the multicultural elective list or successful completion of a work experience (AGR 49600).
13. International Understanding Requirement: A minimum of 9 credits may be taken from the International Understanding list, equivalent study abroad programs, international work experiences or international travel course. Courses that satisfy international understanding criteria can be used anywhere in the plan of study.
14. Capstone experience: ANSC 48100 plus one course from production/management block (ANSC 44000-44600).

Animal Products (ANPD)

AGEC 32100 Futures and Options Market Applications Sem. 1. Class 3, cr. 2. Prerequisite: AGEC 20300 or 20400 or ECON 25100. Course meets during weeks 1-10.

An in-depth background on the origin, operation, and application of futures and options in risk management for agriculture. Covers grain, livestock, and yield futures and options. Applications of futures and options to price and yield risk management is provided. Comparison of expected results from various risk management alternatives and decision making processes to use in selecting a risk management strategy.

AGEC 33000 Management Methods for Agricultural Business Sem. 1 and 2. Class 3, cr. 3.

Management of nonfarm, agriculturally related businesses. Topics include tools for management decision making, legal forms of business organization, basics of accounting, and important financial management techniques. Case studies and computer simulation game.

BCHM 30700 Biochemistry Sem. 1 and 2. Class 3, cr. 3. Prerequisite: CHM 25700.

Introduction to the chemistry, function, and metabolism of compounds found in the living organism.

BCHM 30900 Biochemistry Laboratory Sem. 1 and 2. lab 3, cr. 1. Prerequisite or corequisite: BCHM 30700.

Experiments that introduce methods for analysis and separation of biological molecules and that illustrate the biochemical and metabolic concepts covered in BCHM 30700.

BIOL 22100 Introduction to Microbiology Sem. 1 and 2. Class 3, lab 2, cr. 4. Prerequisite: (BIOL 11000 or 11100) and (CHM 11200 or 11600).

The isolatin, growth, structure, function, heredity, identification, classification, and ecology of microorgamisms; their role in nature; and significance to man.

CSR 34200 Personal Finance Sem. 1 and 2. SS. Class 3, cr. 3.

Lectures and discussion on problems of managing one's personal finances. Covers budgeting; use of, and cost of, credit; life and property insurance; income and estate taxation; housing; saving and investments; wills, trusts, and estate planning.

ECON 25100 Microeconomics Sem. 1 and 2. SS. Class 3, cr. 3.

Price theory and resource allocation. Emphasis is on developing a detailed understanding of the principles of microeconomic analysis and their application to market behavior and public policy issues.

FS 34100 Food Processing I Sem. 2. Class 2, lab 3, cr. 3. Prerequisite: BIOL 22100, FS 30700, and two courses in general chemistry.

Applications of the fundamentals of food engineering, microbiology, and chemistry to methods of food processing and preservation; emphasis will be on processing concepts, preparation for food processing, food formulation, and thermal processing.

FS 36200 Food Microbiology Sem. 1. Class 3, cr. 3. Prerequisite: BIOL 22100.

Microbiology of foods and the relation of micro-organisms to food processing, preservation and distribution.

FS 45300 Food Chemistry (F&N 45300) Sem. 1 and 2. Class 3, lab 3, cr. 4. Prerequisite: organic chemistry and biochemistry, or consent of instructor.

Application of fundamental laws and concepts of chemistry, physics, and biology to the properties, composition, and storage of foods.

MGMT 20000 Introductory Accounting Sem. 1 and 2. SS. Class 3, cr. 3.

The objectives of the course are to help students: (1) understand what is in financial statements and what the statements say about a business, (2) identify the business activities that caused the amounts that appear in the statements, and (3) understand how, when, and at what amount the effects of manager and employee actions will appear in the statements.

Dual Major

A student may choose to complete the requirements for two bachelor degrees at Purdue. Several of our students have graduated or are currently pursuing a second major in disciplines such as Agricultural Communications, Agricultural Economics, Agricultural Education and Wildlife Sciences.

A second major broadens the graduate with increased technical knowledge in another field of study leading to additional career opportunities. Since the above departments are all within the School of Agriculture, courses within the Ag core can be applied to both majors. If the student declares a dual major early in the B.S. program, he/she may be able to complete both curricula in one or two additional semesters. Dual majors in disciplines that are outside the College of Agriculture are also possible, but the number of courses needed to satisfy requirements for both majors will take additional semesters. When a student is working towards two degrees, the student is counseled in their "home" department, but seeks advice from an advisor in the other department to make certain that the requirements needed for graduation are met.

Associate Degree

A major in Animal Sciences at Purdue University can earn an Associate Degree in Animal Science (A.S.) by completing a minimum of 68 credit hours. Students eligible for an A.S. degree must demonstrate a discernable stop in their education at Purdue. If the student decides at a later time to pursue a B.S. degree, the credits utilized for the A.S. can be applied towards the B.S. degree. Requirements for A.S. degree in Animal Sciences are listed on the previous page. On May 31, 2012, an AAG from ANSC will no longer be available.

Minors

A major in Animal Sciences may also obtain a minor in several disciplines outside of the College of Agriculture as well as within the College of Agriculture. An Animal Sciences major can not obtain a minor in animal sciences. As of June, 2000, minors are available in 72 disciplines with 21 of those being in the College of Agriculture. Requirements for obtaining a minor in various departments in the College of Agriculture are found on pages 141-165. Students interested in additional information regarding a minor should contact their advisor or Dr. Mark A. Diekman in LILY 2-111 or call 765-494-4829.

Academic Minors Available to Agriculture, Agricultural and Biological Engineering, and Forestry Students

Please note that the following list of available academic minors and associated codes is currently under review within the University and is subject to change. Also, the Agricultural faculty has adopted the policy that a student must declare any minors prior to the conclusion of the ninth week of the student's final semester prior to degree certification for them to be certified and posted to the academic record.

ACCT	Accounting
AFAS	African American Studies
ASM	Agricultural Systems Management
AEAT	Aircraft Elec/Avionics Tech
ATRE	Aircraft Recipr Engine Tec
ATET	Aircraft Turbine Eng Tech
ANSC	Animal Sciences
ANTR	Anthropology
ARTD	Art & Design
AHST	Art History
ASIA	Asian Studies
AVMT	Aviation Management
BIOS	Biological Sciences
BITC	Biology Teaching
BTCH	Biotechnology
CHEM	Chemistry
CDFS	Child Development & Family Studies
CHNS	Chinese
CLCS	Classical Studies
COMU	Communication
CPMT	Composite Materials Tech
CNIT	Computer & Information Tech
CS	Computer Science
CRTV	Creative Writing
CRPS	Crop Science
DANC	Dance
EAS	Earth & Atmospheric Sciences
ECON	Economics
ECEN	Electrical & Computer Engr
ENGL	English
ENTM	Entomology
ENPP	Environ Politics & Policy
FAMB	Family Business
FARM	Farm Management
FINC	Finance
FAQS	Fisheries & Aquatic Sciences
FDAG	Food & Agribusiness Mgmt
FDSC	Food Science
FNN	Foods and Nutrition
FRSC	Forensic Sciences
FRNC	French
FURN	Furniture Design
GRMN	German
GLOB	Global Studies
HLTH	Health Promotion
HIST	History
HORT	Horticulture
IE	Industrial Engineering
INTB	Intl Business & Economics
INTA	Intl Studies in Agriculture
INTS	Intl Studies in Science
ITLM	Italian
JPNS	Japanese
JWSH	Jewish Studies
LATN	Latin
LAWS	Law and Society
LING	Linguistics
MGMT	Management
MNFG	Manufacturing Graphics
MRKT	Marketing
MATH	Mathematics
MEDR	Medieval/Renaissance Studies
MMTC	Metallic Materials Tech
MIFS	Mgmt Information Systems
MILT	Military Sci. & Leadership
MUSL	Music History & Literature
MUSH	Music History & Theory
MUST	Music Theory
NREV	Natural Res & Envrmtl Sci
NAVL	Naval Science
NUCL	Nuclear Engineering
NUTR	Nutrition
OBHR	Org Behavior/Humn Res Mgmt
OLSV	Organizational Leadership
PTFD	Pet Food Processing
PHIL	Philosophy
PHYS	Physics
PLBI	Plant Biology
PLTP	Plant Pathology
POL	Political Science
PSY	Psychology

RADL	Radiological Health
RELG	Religious Studies
RUSS	Russian
SOC	Sociology
SOIL	Soil Science
SPNS	Spanish
SPNF	Spanish - Proficient
STAT	Statistics
THTH	Theatre
UFOR	Urban Forestry
WDSC	Weed Science
WLFS	Wildlife Science
WOST	Women's Studies
WPMT	Wood Products Manufac Tech

Agricultural Systems Management Minor (ASM)

REQUIREMENTS:

Departmental permission is not required to enroll in this minor. Eighteen (18) credits must be earned.

REQUIRED COURSES:

(3) ASM 10400 – Introduction to Agricultural Systems
(3) ASM 10500 – Agricultural Systems Computations and Communication

Selectives: Twelve credits from the following courses must be completed. Only three credits may be from courses other than Agricultural Systems Management (ASM). At least six credits must be 300+ level courses.

SELECTIVE LIST:

(3) AGEC 31000 - Farm Organization
(3) AGEC 33000 - Management Methods for Agricultural Business
(3) AGRY 37500 - Crop Production Systems
(3) ASM 20100 – Construction and Maintenance
(3) ASM 21100 – Technical Graphic Communication
(3) ASM 21500 - Surveying
(3) ASM 22200 - Crop Production Equipment
(3) ASM 24500 – Materials Handling and Processing
(3) ASM 32200 – Technology of Precision Agriculture
(3) ASM 33300 - Facilities Planning and Management
(3) ASM 33600 - Environmental Systems Management
(3) ASM 34500 – Power Units and Power Trains
(3) ASM 42000 - Electric Power and Controls
(3) ASM 51000 – Agrosecurity-Emergency Management for Agricultural Production Operations
(3) ASM 53000 – Power and Machinery Management
(3) ASM 54000 – Geographic Information System Application
(3) ASM 55000 – Grain Drying and Storage

Animal Sciences Minor (ANSC)

Departmental permission is not required to enroll in this minor. Eighteen credits must be earned. One course must be completed in at least two of the following areas. Cumulative GPA for courses used for minor must be $\geq$ 2.00.

Nutrition:
(3) ANSC 22100 (Principles of Animal Nutrition)

Physiology:
(4) ANSC 23000 (Physiology of Domestic Animals)
(4) BIOL 20300 (Human Anatomy and Physiology)
(4) BIOL 20400 (Human Anatomy and Physiology)

Genetics:
(4) ANSC 31100 (Animal Breeding)
(3) ANSC 51100 (Populations Genetics)
(2) ANSC 51400 (Animal Biotechnology)
(3) BIOL 41500 (Introduction to Molecular Biology)

Products:
(3) ANSC 20100 (Functional Anatomy and Animal Performance)
(4) ANSC 30100 (Animal Growth, Development, and Evaluation)
(3) ANSC 35100 (Meat Science)
(3) ANSC 36800 (Dairy Products)

The remainder of the 18 credits may be completed from other courses listed above, or from Animal Sciences courses that are numbered 30100 or higher. Not more than 4 total credits from ANSC 37000, 37100, 37200, 47000, 47100 and 47200 may be used. Only one of the physiology courses listed above may be used to satisfy the minor.

Biological Sciences Minor (BIOS)

The following courses describe the minimum coursework necessary to earn a minor in Biology.
ALL COURSES FOR THIS MINOR MUST BE TAKEN AT PURDUE UNIVERSITY

Part I

Complete the following courses: (7-8 credits)
BIOL 12100 Diversity, Ecology, and Behavior (2 cr.)
BIOL 13100 Structure and Function of Organisms (3 cr.)
BIOL 19500 First Year Biology Lab (2 cr.)
OR
BIOL 11000 Fundamentals of Biology 1 (4 cr)
BIOL 11100 Fundamentals of Biology 2 (4 cr)

Part II

Complete the following courses: (4-5 credits)
BIOL 23100 Cell Structure & Function (2 cr.) or BIOL 23000 Biology of the Living Cell (3 cr)
BIOL 24100 Genetics and Molecular Biology (3 cr.) or AGRY 320 (Genetics)

Part III

Complete one of the following courses: (2-4 credits)
BIOL 28600 Introduction to Ecology & Evolution (2 cr.; spring)
BIOL 30100[1] Human Anatomy & Physiology (3 cr.; fall)
BIOL 30200[1] Human Anatomy & Physiology (3 cr.; spring)
BIOL 39500[2] Principles of Physiology (4 cr.; spring)
BIOL 39500[2] Developmental Biology (4 cr.; spring)
BIOL 39500[2] Macromolecules (3 cr.; fall)
BIOL 41500 Intro. to Molecular Biology (3 cr.; fall)
BIOL 41600 Molecular Virology (3 cr.; spring)
BIOL 42000 Eukaryotic Cell Biology (3 cr.; fall)
BIOL 43800 General Microbiology (3 cr.; fall)
BIOL 43900 Microbiology Lab (2 cr.; fall)
BIOL 44400 Human Genetics (3 cr.; fall)
BIOL 44600 Cellular Microbiology (3 cr.; spring)
BIOL 47800 Intro to Bioinformatics (3 cr.; fall)
BIOL 48100 Eukaryotic Genetics (3 cr.; spring)
BIOL 48300 Environmental & Conservation Biology (3 cr.; alternate fall)
BIOL 49300 Intro. to Ethology (3 cr.; fall)
BIOL 49500 Reproductive Physiology (3 cr.; fall)
BIOL 49500 Intro. to Neurobiology (3 cr.; fall)
BIOL 51100 Intro. to X-Ray Crystallography (3 cr.; spring)
BIOL 51400 Laboratory in Crystallography (2 cr.; fall)
BIOL 51600 Molecular Biology of Cancer (3 cr.; spring)
BIOL 51700 Molecular Biology: Proteins (2 cr.; spring)
BIOL 53700 Immunology (3 cr.; spring)
BIOL 53800 Molecular, Cellular & Developmental Neurobiology (3 cr.; spring)
BIOL 55900 Endocrinology (3 cr.; fall)
BIOL 56200 Neural Systems (3 cr.; spring)
BIOL 57300 Molecular Biology of Animal Cells (3 cr.; fall)
BIOL 58000 Evolution (3 cr.; spring)
BIOL 58500 Ecology (3 cr.; fall)
BIOL 59200 Evolution of Behavior (3 cr.; spring)
BIOL 59500 Animal Communication (3 cr.; alternate fall)
BIOL 59500 Developmental Biology (3 cr.; spring)
BIOL 59500 Methods & Measurement in Physical Biochemistry (3 cr.; fall)
BIOL 59500 Protein Bioinformatics (2 cr.; spring)
BIOL 59700 Sex and Evolution (3 cr.; alternate fall)
BIOL 59900 Quantitative Physiology (3 cr.; spring)

Part IV

Complete at least one of the following laboratory courses:
BIOL 23200 Laboratory in Cell Structure & Function (2 cr.; fall)
BIOL 24200 Laboratory in Genetics & Molecular Biology (2 cr.; spring)
BIOL 30100[1] Human Anatomy & Physiology (3 cr.; fall)
BIOL 30200[1] Human Anatomy & Physiology (3 cr.; spring)
BIOL 39500[2] Principles of Physiology (4 cr.; spring)
BIOL 39500[2] Developmental Biology (4 cr.; spring)
BIOL 39500[2] Macromolecules (3 cr.; fall)

[1] If both BIOL 30100 and 30200 are completed, they will meet the requirements for Parts III and IV of the minor. BIOL 30100 or 30200 alone will not meet any requirement for the minor.

[2] Any one of BIOL 39500 (Principles of Physiology) or BIOL 39500 (Developmental Biology) or BIOL 39500 (Macromolecules) alone will meet the requirements for Parts III and IV of the minor.

Crop Science Minor (CRPS)

REQUIREMENTS:

Departmental permission is not required to enroll in this minor. Eighteen (18) credits must be earned.

REQUIRED COURSES:

(3) AGRY 10500 - (Crop Production) or (3) AGRY 37500 (Crop Production Systems)
(3) AGRY 25500 (Soil Science)
(3) AGRY 52500 (Crop Physiology and Ecology)

ELECTIVE LIST: Nine credits from the following courses must be completed.

(3) AGRY 10500 (Crop Production) or (1-2) AGRY 20400 (Crop and Weed Identification)
(2) AGRY 30500 (Seed Analysis and Grain Grading)
(2) AGRY 30600 (Seed Technology)
(3) AGRY 32000 (Genetics)
(1) AGRY 32100 (Genetics Laboratory)
(3) AGRY 36500 (Soil Fertility)
(3) AGRY 50500 (Forage Management)
(3) AGRY 51500 (Plant Mineral Nutrition)
(3) BTNY 30100 (Introductory Plant Pathology)
(3) BTNY 30400 (Introductory Weed Science)
(2) ENTM 30600 (General Entomology)
(1) ENTM 20700 (General Entomology Laboratory)

Entomology Minor (ENTM)

REQUIREMENTS:

Departmental permission is not required to enroll in this minor. Seventeen (17) credits must be earned.

REQUIRED COURSES:

1. Overview of Entomology – Minimum of three credits:

(2) ENTM 20600 - General Applied Entomology
(1) ENTM 20700 - General Applied Entomology Lab

2. Insect Taxonomy – Minimum of four credits:

(4) ENTM 33500 - Introduction to Insect Identification
(4) ENTM 50600 - Advanced Insect Taxonomy

3. Insect Biology – Minimum of three credits:

(3) ENTM 21000 - Introduction to Insect Behavior
(3) ENTM 31100 - Insect Ecology
(3) ENTM 32000 - Biodiversity
(3) ENTM 46000 - Aquatic Entomology
(3) ENTM 55100 - Insect Physiology and Biochemistry

4. Insect Management – Minimum of three credits:

(3) ENTM 44300 – Anthropods and Diseases of Turfgrass
(3) ENTM 51000 - Insect Pest Management
(3) ENTM 52100 - Urban and Industrial Insect Management
(3) ENTM 52500 - Medical and Veterinary Entomology
(3) ENTM 55500 – Theory and Practice of Biological Control

In addition to the above courses, credits from the following courses can be applied to the total 17 credits required for a minor:
(3) ENTM 10500 – Insects: Friend and Foe
(1) ENTM 11000 - Spider Biology
(1) ENTM 31700 – Insects in Agricultural Education
(3) ENTM 35100 - Beekeeping

Farm Management Minor (FARM)

Departmental permission is not required to enroll in this minor. Eighteen (18) credits must be earned. See note below.*

REQUIRED COURSES:

(3) AGEC 31000 - Farm Organization
(3) AGEC 31100 - Accounting for Farm Business Planning or (3) MGMT 20000 - Introductory Accounting
(4) AGEC 41100 - Farm Management

ELECTIVE LIST:

(3) AGEC 22000 - Marketing Farm Products
(2) AGEC 32100 - Futures and Options Market Applications
(3) AGEC 35200 - Quantitative Techniques for Firm Decision Making
(1) AGEC 42000 - Grain and Grain Products Marketing
(1) AGEC 42100 - Livestock and Meat Marketing
(4) AGEC 42400 - Financial Management of Agricultural Business
(2) AGEC 42500 - Estate Planning and Property Transfer
(3) AGEC 45500 - Agricultural Law or (3) MGMT 45500 - Legal Background for Business I
(3) AGEC 45600 - Federal Income Tax Law
(3) AGEC 52400 - Agricultural Finance
(3) OLS 25200 - Human Behavior in Organizations or (3) OLS 27400 - Applied Leadership

*The required 18 credits are beyond the three-credit economics elective that is part of core requirements for students in the College of Agriculture. For students from programs outside of the College of Agriculture, three credits of an economics elective are required in addition to the 18 credits noted above.

Fisheries and Aquatic Sciences Minor (FAQS)

Departmental permission is not required to enroll in this minor. Sixteen (16) credits must be earned.

REQUIRED COURSES:

(3) FNR 20100 (Marine Biology)
(3) FNR 24100 (Ecology and Systematics of Fishes and Mammals)
(1) FNR 24200 (Laboratory in Ecology and Systematics of Fishes and Mammals)

ELECTIVES:

Nine (9) credits from the following courses must be completed.

(3) BTNY 55500 (Aquatic Botany)
(3) ENTM 46000 (Aquatic Entomology)
(3) FNR 20300 (Freshwater Ecology)
(3) FNR 45200 (Aquaculture)
(3) FNR 45300 (Fish Physiology)
(3) FNR 45400 (Fisheries Science and Management)
(3) FNR 45500 (Fish Ecology)

Food and Agribusiness Management Minor (FDAG)

Departmental permission is not required to enroll in this minor. Eighteen (18) credits must be earned. See note below.*

REQUIRED COURSES:

(3) AGEC 20300 (Introductory Microeconomics for Food & Agribusiness) or AGEEC 20400 (Introductory Microeconomics for Natural Resources)
(3) AGEC 33000 (Management Methods for Agricultural Business)
(3) MGMT 20000 (Introductory Accounting) **or** (3) AGEC 31100 (Accounting for Farm Business Planning)

ELECTIVES:

Nine credits from the following courses must be completed. At least six credits must be in Agricultural Economics (AGEC) courses.

(3) AGEC 22000 (Marketing Farm Products)
(3) AGEC 32100 (Futures and Options Market Application)
(3) AGEC 33100 (Principles of Selling in Agricultural Business)
(3) AGEC 33300 (Food Distribution - A Retailing Perspective)
(3) AGEC 35200 (Quantitative Techniques for Firm Decision Making)
(1) AGEC 42000 (Grain and Grain Products Marketing)
(1) AGEC 42100 (Livestock and Meat Marketing)
(1) AGEC 42200 (Technical Price Analysis)
(4) AGEC 42400 (Financial Management of Agricultural Business)
(3) AGEC 42500 (Estate Planning and Property Transfer)
(3) AGEC 42600 (Marketing Management of Agricultural Business)
(3) AGEC 42700 (Advanced AGribusiness Marketing)
(2) AGEC 42900 (Agribusiness Marketing Workshop)
(3) AGEC 43000 (Agricultural and Food Business Strategy)
(4) AGEC 43100 (Advanced Agri-Sales and Marketing)
(3) AGEC 43500 (Leadership in a Changing World)
(1) AGEC 44000 (Advanced Futures Topics)
(3) AGEC 45100 (Applied Econometrics)
(3) AGEC 45500 (Agricultural Law)
(3) AGEC 45600 (Federal Income Tax Law)
(1-3) AGEC 49600 (Selected Topics in Agribusiness Management)
(1) AGEC 50300 (Food Processing Management Simulation)
(3) AGEC 50600 (Agricultural Marketing and Price Analysis)
(3) AGEC 52400 (Agricultural Finance)
(3) AGEC 52500 (Environmental Policy Analysis)
(3) AGEC 52600 (International Food and Agribusiness Marketing Strategy)

(3) AGEC 53000 (Strategic Agribusiness Management)
(3) AGEC 53300 (Supply Chain Management for Food and Agribusiness)
(3) CSR 20900 (Introduction to Retail Management)
(3) CSR 26800 (Introduction to Family Business)
(3) CSR 28200 (Customer Relations Management)
(3) CSR 30900 (Leadership Strategies)
(3) CSR 31500 (Personal Preparation for Selling)
(3) CSR 33100 (Consumer Behavior)
(3) CSR 33200 (Cross-Cultural Marketing and International Retailing)
(3) CSR 34200 (Personal Finance)
(3) CSR 38600 (Risk Management)
(3) CSR 40100 (Buying of Merchandise)
(3) CSR 40400 (Strategic Issues for Sales and Retailing)
(3) CSR 40600 (E-Retailing)
(3) CSR 41500 (Sales Force Management)
(3) CSR 41700 (Relationship Selling)
(3) CSR 46800 (Advanced Family Business)
(3) CSR 48100 (Ethics and Compliance in Financial Counseling and Planning)
(3) CSR 48400 (Consumer Investment and Savings Division)
(3) CSR 48500 (Case Studies in Financial Planning)
(3) CSR 48600 (Retirement Planning and Employee Benefits)
(4) HORT 43500 (Principles of Marketing and Management for Horticultural Businesses)

*Any Management (MGMT) or Organizational Leadership and Supervision (OLS) course at the 20000 level or above may be used. Only one course from OLS 25200 and OLS 27400 may be used.

Food Science Minor (FDSC)

The Food Science Department offers an 18-credit hour minor. Below is an outline of the courses required for a Food Science minor:

Food Science Foundation (13 credits)

Course	Offering	Prerequisite	Credits
FS 16100 Science of Foods	Fall Semester Only	No Prerequisites	3 credits
FS 36200 Food Microbiology	Fall Semester Only	BIOL 22100	3 credits
FS 34100 Food Processing I	Spring Semester Only	FS 36200, Physics	3 credits
FS 45300 Food Chemistry	Spring Semester Only	Organic chem., biochemistry	4 credits

Additional Food Science Courses (5 credits)

Course	Offering	Prerequisite	Credits
FS 24500 Food Packaging	Spring Semester Only	FS 16100	2 credits
FS 33500 Food Sensory	Spring Semester Only	STAT 30100	1 credit
FS 34000 Food Regulations	Spring Semester Only	No Prerequisites	1 credit
FS 36100 Food Plant Sanitation	Fall Semester Only	Chemistry, Biology	1 credit
FS 36300 Food Microbiology Lab	Fall Semester Only	Chemistry, Biology	2 credits
FS 36800 Dairy Products	Fall Semester Only	BIOL 22100	2 credits
FS 36900 Dairy Products Lab	Fall Semester Only	FS 36800 co-requisite	1 credit
FS 44200 Food Processing II	Fall Semester Only	FS 34100	3 credits
FS 44300 Food Processing III	Spring Only	FS 44200	3 credits
FS 44400 Statistical Process Control	Fall Semester Only	Statistics	1 credit
FS 44600 Food Process Automation	Spring Odd Year Only	Calculus	2 credits
FS 45500 Cereal Chemistry	Fall Semester Only	No Prerequisites	2 credits
FS 54100 Postharvest Tech Fruits & Veg.	Spring Semester Only	BCHM	1 credit
ANSC 35100 Meat Science	Spring Semester Only	No Prerequisites	3 credits
ANSC 35101 Meat Science Lab	Spring Semester Only	Corequisite ANSC 35100	1 credit
FS 46700 Food Analysis	Spring Semester Only	FS 45300 co-requisite	3 credits
FS 46900 Food Analysis Lab	Spring Semester Only	FS 46700 co-requisite	2 credits
FS 47600 Functional Foods	Spring Even Year Only	Organic Chemistry	2 credits
FS 56400 Food Fermentations	Spring Even Year Only	FS 36200	2 credits
FN 31500 Fundamentals of Nutrition **	Spring and Fall Semesters	Chemistry	3 credits

**ANSC 22100 Principles of Animal Nutrition can be substituted for F&N 31500, but F&N 31500 is preferred for this minor.

Forensic Sciences Minor (FRSC)

Departmental permission is not required to enroll in this minor. Nineteen (19) credits must be earned.

REQUIRED COURSES:

(3) ENTM 21800 (Introduction to Forensic Science)
(3) ENTM 31800 (Criminalistics)
(1) ENTM 31900 (Criminalistics Laboratory)
(3) ENTM 41800 (Advanced Criminalistics)

ELECTIVE COURSES:

Nine credits must be completed from the following courses.

(3) ANTH 33600 (Human Variation)
(3) ANTH 42500 (Anthropological Archaeology)
(3) ANTH 53400 (Human Osteology)
(3) AGRY 33500 (Weather and Climate)
(3) BCHM 30700 (Biochemistry)
(1) BCHM 30900 (Biochemistry Laboratory)
(2) BIOL 20200 (Human Anatomy and Physiology)
(4) BIOL 20400 (Human Anatomy and Physiology)
(4) BIOL 22100 (Microbiology)
(2) BIOL 27000 (Cell Structure and Function)
(2) BIOL 27100 (Laboratory in Cell Structure and Function)
(2) BIOL 28000 (Genetics and Molecular Biology)
(2) BIOL 28100 (Laboratory in Genetics and Molecular Biology)
(3) CGT 11600 (Geometric Modeling for Visualization and Communication)
(3) CGT 21100 (Raster Imaging for Computer Graphics)
(3) CGT 24100 (Introduction to Computer Animation)
(3) CGT 26200 (Introduction to Construction Graphics)
(3) CGT 34000 (Digital Lighting and Rendering for Computer Animation)
(4) CHM 22400 (Introductory Quantitative Analysis)
(4) CHM 25700 (Organic Chemistry)
(1) CHM 25701 (Organic Chemistry Laboratory)
(2) ENTM 20600 (General Entomology)
(1) ENTM 20700 (General Entomology Laboratory)
(3) ENTM 21000 (Insect Behavior)
(4) ENTM 33500 (Insect Identification)
(3) ENTM 55100 (Insect Physiology and Biochemistry)
(2) HSCI 33200 (Introduction to Hematology)
(2) HSCI 33300 (Immunology for Medical Technology)
(3) HSCI 56000 (Toxicology)
(4) PHYS 21800 (General Physics)

(4) PHYS 21900 (General Physics II)
(4) PHYS 22000 (General Physics)
(4) PHYS 22100 (General Physics)
(3) PSY 23500 (Child Psychology)
(3) PSY 24000 (Introduction to Social Psychology)
(3) PSY 33300 (Motivation)
(3) PSY 35000 (Abnormal Psychology)
(3) PSY 41100 (Psychology and Law)
(3) PSY 44400 (Human Sexual Behavior)
(3) PSY 53500 (Psychology of Death and Dying)
(3) SOC 32400 (Criminology)
(3) SOC 32800 (Criminal Justice)
(3) SOC 35600 (Hate and Violence)
(3) SOC 41900 (Sociology of Law)
(3) SOC 42600 (Social Deviance and Control)
(3) SOC 45400 (Family Violence)

Furniture Design Minor (FURN)

Departmental permission is not required to enroll in this minor. Eighteen (18) credits must be earned.

REQUIRED COURSES:

(3) AD 53500 (Furniture Design)
(3) FNR 31100 (Wood Structure, Identification, and Properties)
(3) FNR 41800 (Properties of Wood Related to Manufacturing)
(3) FNR 41900 (Furniture and Cabinet Design and Manufacture)
(3) FNR 42500 (Secondary Wood Products Manufacturing)
(3) FNR 48400 (Design for Computer Numerical Controlled Manufacturing)

Horticulture Minor (HORT)

Departmental permission is not required to enroll in this minor. Eighteen (18) credits must be earned.

REQUIRED COURSES:

Fundamentals of Horticulture/Plant Biology – Three credits required.

(4) BTNY 21000 (Introduction to Plant Science) or three credits of plant biology
(3) HORT 10100 (Fundamentals of Horticulture)

Plant Propagation - Three credits required.

(3) HORT 20100 (Plant Propagation)

ELECTIVES:
Twelve credits of HORT 20000+.

International Studies in Agriculture Minor (INTA)

Departmental permission is required to enroll in this minor. Please contact Dr. Allan D. Goecker in Room 121 of the Agricultural Administration Building. To qualify for this minor, students normally will be expected to focus on a specific country or geographical region.

Individuals must demonstrate proficiency in a second language by completing or establishing credit by examination in the fourth course in a language (Language 20200) and by completing a conversation course in the language if offered. Language proficiency may be demonstrated by successfully passing the Foreign Service Institute examination at Level 2 in both reading and speaking.

Students must complete a minimum of 15 semester credits of courses with a principal international focus in the areas of culture (anthropology, art, literature, philosophy, or sociology), political science, history, or economics. A minimum of six credits of this coursework must be focused on the geographic region of choice. A minimum of six credits must be completed outside of the College of Agriculture.

Individuals must participate in a cooperative work, internship, study abroad, or cultural exchange experience of eight weeks or more in the selected geographic region.

Students must submit a summary paper and make an oral presentation documenting the integration of the various learning and experiential activities which were undertaken in the foreign stay.

Students from any College of Agriculture major may earn the international studies minor. The Office of International Programs in Agriculture will provide special counsel to students regarding program operations, including the identification and coordination of out-of-country experiences.

Natural Resources and Environmental Science Minor (NRES)

Departmental permission is not required to enroll in this minor. Fifteen (15) credits must be earned.

REQUIRED COURSE:

(3) NRES 29000 (Introduction to Environmental Science)

SELECTIVES – Twelve credits from the following courses must be completed.

General Environmental Science
(3) FNR 21000 (Natural Resource Information Management)
(3) NRES 23000 (Survey of Meterology)
(3) NRES 25500 (Soil Science)
(3) POL 22300 (Introduction to Environmental Policy)

Ecology Emphasis
(3) AGRY 34900 (Soil Ecology)
(3) BIOL 48300 (Environmental and Conservation Biology)
(3) ENTM 31100 (Insect Ecology)

Policy and Economic Emphasis
(3) AGEC 40600 (Natural Resource and Environmental Economics)
(3) FNR 36500 (Natural Resources Issues, Policy, Admin.)
(3) POL 32700 (Global Green Politics)

Land Resources Emphasis
(3) ABE 32500 (Soil and Water Resource Engineering)
(3) AGRY 33700 (Environmental Hydrology)
(3) ASM 33600 (Environmental Systems Management)
(3) NRES 38500 (Environmental Soil Chemistry)

Sustainability Emphasis
(3) AD 39700 (Sustainability in the Built Environment)
(3) BCHM 41900 (Sustainable Construction)
(3) CE 35500 (Engineering Environmental Sustainability)

Water Quality Emphasis
(3) ABE 32500 (Soil and Water Resource Engineering)
(3) AGRY 33700 (Environmental Hydrology)
(3) FNR 20100 (Marine Biology)

At least one course must be selected from a minimum of 4 emphasis areas.

Pet Food Processing Minor (PTFD)
Departments of Food Science/Animal Sciences

Department permission is not required to enroll in this minor. Twenty-one (21) credits must be earned.

REQUIRED COURSES:
(3) ANSC 10600 (Biology Companion Animal)*
(3) ANSC 32400 (Applied Animal Nutrition)
(3) ANSC 44600 (Companion Animal Management)
(3) FS 16100 (Science of Food)
(3) FS 34100 (Food Processing I)
(3) FS 36200 (Food Microbiology)
(3) FS 44200 (Food Processing II)

* (3) ANSC 10200 (Introduction to Animal Agriculture) can be substituted for ANSC 10600, but ANSC 10600 is preferred for this minor.

Plant Biology Minor (PLBI)

Departmental permission is not required to enroll in this minor. Fifteen (15) credits must be earned.

REQUIRED COURSE:

(4) BTNY 21000 (Introduction to Plant Science)

Eleven additional credits must be completed from the following courses, including at least nine credits at 30000 level or above.

ELECTIVE LIST:

(3) BIOL 59500 (Cell Biology of Plants)
(3) BTNY 21100 (Plants and the Environment)
(3) BTNY 30100 (Introductory Plant Pathology)
(3) BTNY 30200 (Plant Ecology)
(3) BTNY 30400 (Introductory Weed Science)
(3) BTNY 30500 (Fundamentals of Plant Classification)
(4) BTNY 31600 (Plant Anatomy)
(3) BTNY 42000 (Plant Cellular and Developmental Biology)
(1-3) BTNY 49800 (Research in Plant Science) *
(3) BTNY 55000 (Biology of Fungi)
(3) BTNY 55300 (Plant Growth and Development)
(3) BTNY 55500 (Aquatic Botany)
(4) HORT 30100 (Plant Physiology)
(3) HORT 35000 (Biotechnology in Agriculture)

* A maximum of three credits of BTNY 49800 or comparable research in the plant sciences may be applied to the minor.

Plant Pathology Minor (PLTP)

Departmental permission is not required to enroll in this minor. Nineteen (19) credits must be earned.

REQUIRED COURSES:

(4) BTNY 21000 (Introduction to Plant Science)
(3) BTNY 30100 (Introductory Plant Pathology)
(3) BTNY 52500 (Intermediate Plant Pathology)
(3) BTNY 53500 (Plant Disease Management)

Six additional credits from the follow courses must be completed.

ELECTIVE LIST:

(1-3) BTNY 49800 (Research in Plant Science)*
(3) BTNY 44300 (Arthropods and Diseases of Turf)
(1) BTNY 51500 (Diseases of Fruit Crops)
(1) BTNY 51600 (Diseases of Vegetable Crops)
(1) BTNY 51700 (Diseases of Agronomic Crops)
(1) BTNY 51800 (Diseases of Landscape Trees and Shrubs)
(1) BTNY 51900 (Diseases of Greenhouse Ornamentals)
(3) BTNY 55000 (Biology of Fungi)

* A maximum of three credits of BTNY 49800 or comparable research in the plant sciences may be applied to the minor.

Soil Science Minor (SOIL)

Departmental permission is not required to enroll in this minor. Eighteen (18) credits must be earned.

REQUIRED COURSES:

(3) AGRY 25500 (Soil Science)
(3) AGRY 36500 (Soil Fertility)

ELECTIVE LIST: Twelve credits from the following courses must be completed.

(3) AGRY 29000 (Introduction to Environmental Science)
(3) AGRY 34900 (Soil Ecology)
(2) AGRY 35500 (Soil Morphology and Geography)
(3) AGRY 38500 (Environmental Soil Chemistry)
(3) AGRY 45000 (Soil Conservation and Water Management)
(3) AGRY 46500 (Soil Physical Properties)
(3) AGRY 51500 (Plant Mineral Nutrition)
(3) AGRY 54000 (Soil Chemistry)
(3) AGRY 54400 (Environmental Organic Chemistry)
(3) AGRY 54500 (Remote Sensing of Land Resources)
(3) AGRY 55500 (Soil and Plant Analysis)
(3) AGRY 56000 (Soil Physics)
(3) AGRY 56500 (Soil Classification, Genesis, and Survey)
(3) AGRY 58000 (Soil Microbiology)
(3) AGRY 58500 (Soils and Land Use)

Sustainable Environments Minor

Departmental permission is not required to enroll in this minor. Fifteen (15) credits must be earned.

REQUIRED COURSES:

(3) NRES 29000 (Introduction to Environmental Science)

SELECTIVES (Twelve credits from the following courses must be completed.):
(3) AD 39700 (Sustainability in the Built Environment)
(3) AGRY 57500 (Soil and Nutrient Management)
(3) ASM 33600 (Environmental Systems Management)
(3) BCM 41900 (Sustainable Construction)
(3) BIOL 48300 (Environmental and Conservation Biology)
(3) CE 35500 (Engineering Environmental Sustainability)
(3) FNR 37500 (Human Dimensions of Natural Resource Management)
(3) FNR 40800 (Natural Resources Planning)
(1) HORT 44200 (Sustainability in the Managed Landscape)
(3) POL 32700 (Global Green Politics)

Urban Forestry Minor (UFOR)

Departmental permission is not required to enroll in this minor. Fifteen (15) credits must be earned.

REQUIRED COURSES:

(4) FNR 44400 (Arboricultural Practices)
(3) FNR 44500 (Urban Forest Issues)

Eight additional credits from the following courses must be completed.

(1) BTNY 51800 (Diseases of Landscape Trees and Shrubs)
(3) ENTM 34000 (Insect Pests of Trees, Turf, and Ornamentals)
(1) FNR 43400 (Tree Physiology)
(3) FNR 43500 (Physiological Ecology of Woody Plants)
(4) HORT 21700 (Woody Landscape Plants)
(4) HORT 30100 (Plant Physiology)
(3) HORT 31700 (Landscape Contracting and Management)

Weed Science Minor (WDSC)

Departmental permission is not required to enroll in this minor. Fifteen (15) credits must be earned.

REQUIRED COURSES:

(4) BTNY 21000 (Introduction to Plant Science)
(3) BTNY 30400 (Introductory Weed Science)
(3) BTNY 50400 (Advanced Weed Science) or (3) BTNY 50500 (Advanced Weed Biology)

ELECTIVES:

Five (5) credits from the following courses must be completed.

(1) BTNY 20400 (Crop and Weed Identification)
(3) BTNY 21100 (Plants and the Environment)
(3) BTNY 30200 (Plant Ecology)
(3) BTNY 30500 (Fundamentals of Plant Classification)
(4) BTNY 31600 (Plant Anatomy)
(3) BTNY 35000 (Biotechnology in Agriculture)
(1-3) BTNY 49800 (Research in Plant Science)*
(3) BTNY 55500 (Aquatic Botany)
(1) BTNY 55600 (Aquatic Plant Management)
(4) HORT 30100 (Plant Physiology)

*A maximum of three credits of BTNY 49800 or comparable research in the plant sciences may be applied to the minor.

Wildlife Science Minor (WLFS)

Departmental permission is not required to enroll in this minor. Seventeen (17) credits must be earned.

REQUIRED COURSES – 11 credits:

(3) FNR 24000 (Wildlife in America)
(3) FNR 24100 (Ecology and Systematics of Fishes and Mammals)
(1) FNR 24200 (Laboratory in Ecology and Systematics of Fishes and Mammals)
(3) FNR 25100 (Ecology and Systematics of Amphibians, Reptiles, and Birds
(1) FNR 25200 - Laboratory in Ecology and Systematics of Amphibians, Reptiles, and Birds)

ELECTIVES – 6 credits:

(3) FNR 30500 (Conservation Genetics)
(3) FNR 35900 (Spatial Ecology and GIS)
(4) FNR 44700 (Vertebrate Population Dynamics)
(2) FNR 52600 (Aquatic Animal Health)
(2) FNR 52700 (Ecotoxicology)
(3) FNR 54300 (Conservation Biology I)
(3) FNR 57100 (Advanced Ornithology)
All department approved FNR 49800 or FNR 59800 courses.

Wood Products Manufacturing Technology Minor (WPMT)

Department permission is not required to enroll in this minor. Eighteen (18) credits must be earned.

REQUIRED COURSES:

(3) FNR 30100 (Wood Products and Processing)
(3) FNR 31100 (Wood Structure, Identification, and Properties)
(3) FNR 41800 (Products of Wood Related to Manufacturing)
(3) FNR 42500 (Secondary Wood Products Manufacturing)
(3) IT 10400 (Industrial Organization)
(3) IT 11400 (Problem-solving in Manufacturing)

ANIMAL SCIENCES COURSES

Undergraduate Level/Lower-Division Courses

AGR 10100 Introduction to the College of Agriculture and Purdue University Sem. 1. Class 1, Cr. 0.5. Course meets during weeks 1-8. Co-requisite: One course selected from AGR 11100 to AGR 12400.

Students are introduced to the College of Agriculture and Purdue University. Specific areas discussed include the diversity of career opportunities within agriculture, the relationships between different areas of agriculture, ethics, the impact of undergraduate coursework, including the core curriculum, on scholarship and career preparation, and the challenges facing the food, agricultural, and natural resource system. The use of guest lecturers provides a networking opportunity for students. Enrollment in this course is restricted to beginning freshmen students.

AGR 11400 Introduction to Animal Sciences Academic Programs Sem. 1. Class 1, Cr. 0.5. Course meets during weeks 1-8. Co-requisite: AGR 10100.

An introduction to academic programs offered in the Department of Animal Sciences. Topics include, but are not limited to, undergraduate plans of study, courses, experiential programs, internships, student organizations, career opportunities, academic policies, scholarships, and student services. Professor Diekman and Mr. Delks.

ANSC 10100 Animal Agriculture Class 3, Cr. 3.

Importance of livestock in the field of agriculture, and the place of meats and other animal products in the human diet. Offered at Vincennes University and Purdue University regional campuses and other distant education sites. Course not available for students enrolled on West Lafayette campus. Credit cannot be obtained for both ANSC 10100 and ANSC 10200. Professor Latour.

ANSC 10200 Introduction to Animal Agriculture Sem. 1 and 2. Class 2, Lab. 2, Cr. 3.

A study of animal agriculture emphasizing the efficient production of animal food products from poultry, dairy, and meat animals. Credit cannot be obtained for both ANSC 10100 and ANSC 10200. Course may also be offered for dual credit with cooperating Indiana high schools upon documented approval by the Department of Animal Sciences. Professors Russell, Patterson and Dr. Waddell.

ANSC 10600 Biology of Companion Animals Sem. 2. Class 3, Cr. 3.

Introduction to the various aspects of companion animal biology. Topics include anatomy, physiology, health, immunity, nutrition, growth, digestion, metabolism, behavior, genetics, reproduction, and lactation. Professors Allrich, Luescher and Stewart.

ANSC 18100 Orientation to Animal Sciences Sem. 2. Class 2, Cr. 1.

Introduction to the faculty, programs, opportunities, career preparation, and personal development requirements needed to succeed in a career in the animal industries. Course meets during weeks 1-8. Class trip is optional. Students pay lodging or meal expenses when necessary. Professor Russell and Mr. Delks.

ANSC 20100 Functional Anatomy and Animal Performance Sem. 1. Class 2, Lab. 2, Cr. 3.

A course designed to observe the norms for acceptable conformation of breeds of farm animals and to relate significant characteristics of farm animals to performance and profitability. Professor Russell.

ANSC 22100 Principles of Animal Nutrition Sem. 1 and 2. SS. Class 3, Cr. 3. Prerequisites: CHM 11100 or CHM 11500 and sophomore, junior or senior classification.

Classification and function of nutrients, deficiency symptoms, digestive processes, characterization of feedstuffs, and formulation of diets for domestic animals. Offered at Vincennes University and Purdue University's Fort Wayne regional campus. Distance learning course is available for non-ANSC students at Purdue and for non-Purdue students. Professor Forsyth.

ANSC 23000 Physiology of Domestic Animals Sem. 1 and 2. Class 4, Cr. 4. Prerequisite: BIOL 11000, or BIOL 11100, or BIOL 12100 or BIOL 13100.

A lecture course designed to present physiology of domestic farm animals. Function of tissues and organs, maintenance of internal steady-state conditions, and body responses to external environmental conditions will be presented. Physiological mechanisms involved in lactation, growth, and reproduction will be included. Professor Mills.

ANSC 24500 Applied Animal Management Sem. 1 and 2. Class 1, Lab. 3, Cr. 2.

Skills and practices related to handling and care of beef and dairy cattle, horses, poultry, sheep, and swine. Dr. Neary.

ANSC 28100 Career Planning in Animal Sciences Sem. 2. Class 1, Cr. 1.

A seminar course designed to inform students of the career opportunities in animal industries, develop their interviewing and other interpersonal skills, and begin to plan the course of study, work experiences, and marketing methods needed to obtain a successful internship and employment. Mr. Delks.

ANSC 29200 Special Assignments Sem. 1 and 2. SS. Cr. 0. Reading, discussions, written reports, seminar presentations, teaching, field or laboratory experiences provided for enrichment in special areas of animal science. To be arranged with individual staff members prior to registration. Approval of the department head required. Staff.

ANSC 29300 Special Assignments Sem. 1 and 2. SS. Cr. 1-3. Reading, discussions, written reports, seminar presentations, teaching, field or laboratory experiences provided for enrichment in special areas of animal science. To be arranged with individual staff members prior to registration. Approval of the department head required. Combination of ANSC 29300 and 49300 cannot exceed six credits. Pass/No Pass grading option only. Staff.

ANSC 29400 Exploring International Agriculture SS. Cr. 3. An experiential learning class. Interrelationship of animal agriculture with agronomic production, food industries, culture, national infrastructure, political systems, and international trade will be investigated through international travel. Critical thinking and communications skills will be enhanced by topic leadership, comparative analysis, and seminar presentations. May be repeated for credit with variable title. Intensive travel course to learn about animal industries and culture in other countries. May be repeated for credit with variable title. Permission of instructor required. Staff.

ANSC 29500 Special Topics in Animal Sciences Sem. 1 and 2. SS. Cr. 0-3.

Lecture presentation of specialized material not available in formal courses of the department. The specific topic that is offered will be indicated on the student's record. May be repeated for credit with variable title. Permission of instructor required. Staff.

ANSC 29500 Anatomy and Physiology Honors Lab Sem. 1 and 2. Lab. 2, Cr. 1. Prerequisite or corequisite: ANSC 23000.

Lab covering topics presented in ANSC 23000. Professor Mills.

Undergraduate Level/Upper-Division Courses

ANSC 30100 Animal Growth, Development and Evaluation Sem. 1. Class 2, Lab. 4, Cr. 4. Junior or senior classification.

A study of meat animal growth and developmental processes, including micro and gross anatomy, and factors that affect body/carcass composition with application to animal and carcass evaluation. Dr. Waddell.

ANSC 30300 Animal Behavior Sem. 2. Class 2, Lab. 2, Cr. 3. Junior or senior classification.

Discussion of animal behavior with emphasis on developing an understanding of the reasons domesticated animals react the way they do toward their kind and to humans. The laboratory will be used for observation of behavior patterns in animals. Solutions for unusual behavior include behavior modification techniques. Professor Croney.

ANSC 31100 Animal Breeding Sem. 1 and 2. Class 3, Lab. 2, Cr. 4. Prerequisite: (AGRY 32000 or BIOL 24100) and (STAT 30100 or 50300).

Genetic principles and their applications in improvement of production efficiency in livestock. Professor Stewart and Dr. Waddell.

ANSC 32400 Applied Animal Nutrition Sem. 2. Class 2, Lab. 2, Cr. 3. Prerequisite: ANSC 22100.

Application of the principles of animal nutrition to the formulation and feeding of supplements and complete rations for animals; ration ingredients and substitution values; computer applications; legal aspects of feed formulation; and industry practices. Professor Radcliffe.

ANSC 33200 Environmental Physiology of Domestic Animals Sem. 2. Class 2, Cr. 2. Prerequisite: ANSC 23000.

Interactions of environmental factors with physiological processes in domestic animals. Professor Allrich.

ANSC 33300 Physiology of Reproduction Sem. 1 and 2. Class 3, Cr. 3. Prerequisite: ANSC 23000 or (BIOL 20300 and 20400).

Basic information on the physiological processes of reproduction. Professors Cabot and Diekman.

ANSC 33400 Physiology of Reproduction Laboratory Sem. 2. Lab. 2, Cr. 1. Prerequisite or corequisite: ANSC 33300.

Anatomical structures, physiological processes, and techniques concerned with animal reproduction. Professor Diekman.

ANSC 34500 Animal Health Management Sem. 1. Class 3, Cr. 3. Prerequisite: ANSC 22100 and 23000.

The objectives of this course are to familiarize the student with disease processes, and mechanisms. Management techniques in food, companion and research species that minimize or prevent disease will be emphasized, as well as the consequences on animal production, reproduction, and human health. Professor Allrich.

ANSC 35100 Meat Science Sem. 2. Class 3, Cr. 3. Junior or senior classification.

Study of muscle and meat, principles involved in the conversion of living animals to meat and by-products; efficient utilization of all types of meat as food. Dr. Waddell.

ANSC 35101 Meat Science Laboratory Sem. 2. Lab. 2, Cr. 1. Prerequisite or corequisite: ANSC 35100.

Application of scientific principles to the meat industry, with emphasis on all aspects of processing including: harvest; carcass grading and evaluation; fabrication; cured, smoked, and comminuted meat products; quality control; product development; and retail and food service merchandising. Dr. Waddell.

Dairy Products* (FS 49100) Sem. 1. Class 2, Cr. 2. Junior or senior classification.

Scientific and technical aspects of procurement, processing, packaging, and quality control of fluid milk products and frozen dairy foods. Emphasis is placed on process unit operations. Laboratory for one additional credit is available. Offered in even-numbered years. Professors Ballard and Licesga.

ANSC 37000 Livestock Evaluation* Sem. 2. Lab 6, Cr. 2. Junior or senior classification.

This course is designed to develop logical thinking and speaking skills, while developing the ability to critically evaluate livestock in their production environments. Prior experience in public speaking or judging is not required. Combination of ANSC 37000, 37100, 37200, 47000, 47100 and 47200 cannot exceed 3 credits towards ANSC electives. Requires class trips. Students pay lodging or meal expenses when necessary. Mr. Claeys.

ANSC 37100 Dairy Evaluation* Sem. 2. Lab 6, Cr. 2. Sophomore, junior or senior classification.

This course will enable the student to become familiar with breeds of dairy, parts of dairy cattle and their relationship to function. Opportunities will exist to associate with people from various breed organizations within the dairy industry. Combination of ANSC 37000, 37100, 37200, 47000, 47100 and 47200 cannot exceed 3 credits towards ANSC electives. Requires class trips. Students pay lodging or meal expenses when necessary. Mr. Hendress.

ANSC 37200 Horse Evaluation* Sem. 2. Lab 6, Cr. 2. Sophomore, junior or senior classification.

A student-centered laboratory course designed to familiarize students with functional horse conformation and type that maximizes athletic ability, applies selection criteria established by national breed associations for evaluating performance events, and prepares students to select halter and performance horses of many breeds and disciplines. Combination of ANSC 37000, 37100, 37200, 47000, 47100 and 47200 cannot exceed 3 credits towards ANSC electives. Requires class trips. Students pay lodging or meal expenses when necessary. Professor Russell.

ANSC 38100 Leadership for a Diverse Workplace Sem. 2. Class 3, Cr. 3. Prerequisite: AGR 20100 or a course on the College of Agriculture Multicultural Awareness list. Junior or senior classification in animal agribusiness or animal production or animal products or animal sciences major.

An interactive small group discussion class covering effective interpersonal and group skills needed to enhance career satisfaction in a diverse workplace including building networks within industry, cross-cultural communication and gaining experiences in group problem-solving and decision making. This course may be used as an additional written communication elective in all plans of study in Animal Sciences. Professor Russell.

ANSC 39000 Animal Sciences Internship Sem. 1 and 2. SS. Cr. 0. Prerequisite: Enrolled in Animal Agribusiness or Animal Production or Animal Products or Animal Science major.

Internships with producers, businesses, or agencies arranged in cooperation with faculty coordinator. Permission of department required. Professor Diekman and Mr. Delks.

ANSC 39300 Animal Industry Travel Course* Sem. 2. SS. Class 0-1, Lab. 2, Cr. 1-2.

A classroom and travel course designed to expose students to animal production operations, agribusinesses, industry leaders, and their philosophies throughout various geographical areas of the United States. Travel is conducted during spring break and includes visits to animal production farms, universities, and agribusinesses. Consent of instructor required. May be repeated for a maximum of three credits; limited to two credits toward Animal Sciences electives; offered in odd numbered years. Additional fee required. Professor Russell.

ANSC 40000 Animal Sciences Study Abroad Sem. 1 and 2. SS. Credit 0-8.

Utilized to record credits earned through participation in Purdue study abroad programs with cooperating foreign universities. May be repeated for credit. Professor Diekman.

ANSC 40400 Animal Welfare Sem. 1. Class 2, Lab. 2, Cr. 3. Junior or senior classification.

A multi-disciplinary course that introduces students to the fields of animal welfare and the ethics of animal use. The course will emphasize farm animal welfare and production issues. Staff.

ANSC 43500 Reproductive Management of Farm Animals Sem. 1. Class 2, Lab. 3, Cr. 3. Prerequisite: ANSC 33300.

Management practices associated with improved reproductive efficiency. Procedures for diagnosis of reproductive failure and practical methods of controlling reproduction will be identified. Professor Singleton.

ANSC 44000 Horse Management Sem. 1. Class 2, Lab. 2, Cr. 3. Prerequisite: ANSC 22100 and junior or senior classification.

Current breeding, feeding, housing, selection, disease control, and other management practices essential for sound economic planning of horse operations in today's horse industry. Laboratory farm visits provide students with real application examples and industry contacts. Professor Russell.

ANSC 44100 Beef Management Sem. 1. Class 2, Lab. 2, Cr. 3. Prerequisite: ANSC 22100 and junior or senior classification.

Breeding, feeding, and management practices essential for economical beef production, including performance testing. Professor Lemenager.

ANSC 44200 Sheep Management Sem. 2. Class 2, Lab. 2, Cr. 3. Prerequisite: ANSC 22100 and junior or senior classification.

Breeding, feeding, and management practices essential for economical sheep production and commercial lamb feeding, including performance testing. Dr. Neary.

ANSC 44300 Swine Management Sem. 2. Class 2, Lab. 2, Cr. 3. Prerequisite: ANSC 22100 and junior or senior classification.

Breeding, feeding, and management practices essential for commercial swine production, including performance testing. Professor Schinckel.

ANSC 44400 Dairy Management* Sem. 2. Class 2, Lab. 2, Cr. 3. Prerequisite: ANSC 22100 and junior or senior classification.

Current breeding, feeding, physiology, disease prevention, and management practices essential for economical milk production. Requires class trips. Students will pay individual lodging or meal expenses when necessary. Professor Schutz.

ANSC 44500 Commercial Poultry Management* Sem. 2. Class 2, Lab. 2, Cr. 3. Prerequisite: ANSC 22100 and junior or senior classification.

Current developments and practices in the commercial production of eggs, broilers, and turkeys; principles of breeding, physiology, nutrition, management, and disease prevention. Requires class trips. Students will pay individual lodging or meal expenses when necessary. Professor Hester.

ANSC 44600 Companion Animal Management Sem. 1. Class 2, Lab. 2, Cr. 3. Prerequisite: ANSC 22100 and junior or senior classification.

This course details understanding of the economic scope of the pet industry as well as the role of pets in American society. The students will acquire the information to be responsible pet owners by expanding their knowledge of housing practices, nutritional care, health care, behavior, and breeding of companion animals. Professor Allrich.

ANSC 47000 Livestock Judging* Sem. 1. Lab. 3, Cr. 1. Prerequisite: ANSC 37000.

This course is designed to teach livestock evaluation, relationship of production data to live animal evaluation characteristics, expand logical thinking and reasoning skills, and enhance oral communication skills. Requires class trips. Students will pay individual lodging or meal expenses when necessary. Mr. Claeys.

ANSC 47100 Dairy Judging* Sem. 1. Lab. 3, Cr. 1. Prerequisite: ANSC 37100.

Opportunities will exist to allow the student to practice analysis and enhance decision-making processes in placing animals in collegiate dairy contests. Communication skills will be developed to properly present and defend those decisions with confidence. Requires class trips. Students will pay individual lodging or meal expenses when necessary. Mr. Hendress.

ANSC 47200 Horse Judging* Sem. 1. Lab 3, Cr. 1. Prerequisite: ANSC 37200.

An intensive capstone experience for those students wishing to apply their knowledge of functional horse conformation, athletic ability, selection criteria established by national breed associations, and develop advanced decision making, communication, and experience working within a team environment by preparing and competing in national judging contests. Requires class trips. Students will pay individual lodging or meal expenses when necessary. Professor Russell.

ANSC 48100 Contemporary Issues in Animal Sciences Sem. 1. Class 1, Cr. 1. Junior or senior classification.

Industry-led and student-led discussions and debate of current issues facing animal industries. Topics include environmental impact, food safety, animal care and well-being, ethics, use of biotechnology, world food supply, and international agricultural trade. Industry representatives will share their experiences of the importance of good communication skills as well as technical knowledge of issues that are of concern to animal industries. Students will share their experiences with each other from course work, internships, research problems, study abroad and club activities as they address contemporary issues facing animal industries. Professor Mathew and Mr. Delks.

ANSC 48500 Dairy Farm Evaluation* Sem. 2. Leb. 1, lab 2, Cr. 2. Prerequisite: ANSC 44400 and junior or senior classification.

This course will provide students with an opportunity to integrate and apply knowledge of dairy cattle management systems, nutrition, reproduction, genetics, milk quality, animal handling, physical farm facilitates, manure handling and management, personnel and their financial implications. Students will develop critical analysis skills and apply troubleshooting principles in the identification and resolution of dairy farm management issues in a learning environment that is structured around farm evaluation field trips and case studies. Requires class trips. Students will pay individual lodging or meal expenses when necessary. Professor Schutz.

ANSC 49100 Special Problems Sem. 1 and 2. SS. Cr. 1-3.

Supervised individual laboratory or library assignments. Written reports required. To be arranged with individual staff members prior to registration. Requires approval of department head. May be repeated for a maximum of six credits with approval of department head. Staff.

ANSC 49200 Special Assignments Sem. 1 and 2. SS. Cr. 0.

Reading, discussions, written reports, seminar presentations, teaching, field or laboratory experiences provided for enrichment in special areas of animal science. To be arranged with individual staff members prior to registration. Approval of department head required. Staff.

ANSC 49300 Special Assignments Sem. 1 and 2. SS. Cr. 1-3.

Reading, discussions, written reports, seminar presentations, teaching, field or laboratory experiences provided for enrichment in special areas of animal science. To be arranged with individual staff members prior to registration. Approval of department head required. Combination of ANSC 29300 and 49300 can not exceed six credits. Pass/No Pass grading option only. Staff.

ANSC 49400 Animal/Food Security: International Service Learning Sem 1 and 2. SS. Cr. 1-4. Prerequisite: One course from the Multicultural Awareness list. Restrictions: Classification 5-8.

This course prepares students for a service learning international experience and includes the planning of the trip, the actual trip and a reflective learning post-trip class. The course is a partnership between Purdue Animal Sciences, a host university and their students, a local community organization, and an international community development, NGO. The core of the experience is the faculty-led international service learning course where students live and work in villages in a developing country. Students will learn extension methodologies and how to contribute to sustainable community projects through the application of agricultural ecology, animal well-being focused management, and community development projects. Students will be expected to work in bi-national teams across agricultural and community disciplines to not only contribute to the communities served but to apply their classroom knowledge and experience to make a difference in the community. AGEC 34000 (Introduction to World Agricultural Development) is a highly recommended prerequisite.

ANSC 49500 Special Topics in Animal Sciences Sem. 1 and 2. SS. Cr. 0-3.

Lecture presentation of specialized material not available in the formal courses of the department. The specific topic that is offered will be indicated on the student's record. Approval of department head required. May be repeated for credit. Staff.

ANSC 49900 Thesis Research Sem. 1 and 2. SS. Cr. 1-3. Prerequisite: Admission to honors program. Enrolled in animal agribusiness or animal products or animal production or animal science major.

For students doing specialized animal sciences research; report required. Arrange with academic adviser and honors research coordinator before registering. Permission of instructor required. May be repeated for credit with variable title. Staff.

Dual Level/Undergraduate-Graduate

ANSC 51100 Population Genetics (AGRY/FNR 51100) Sem. 1. Class 3, Cr. 3. Prerequisites: AGRY 32000 or BIOL 24100. Corequisite: STAT 50300. Junior or senior classification.

Basic concepts of population and quantitative genetics. Characterization of populations using gene frequencies, genetic and zygotic disequilibrium; forces changing gene frequencies (mutation, migration, selection, and random genetic drift) and genotypic frequencies (mating systems: inbreeding, crossbreeding, and phenotypic assortative) and related hypothesis testing: gene trees and the coalescent process; molecular phylogenies. One semester of principles of genetics is strongly recommended prior to taking this course as a graduate student. Professor Muir.

ANSC 51300 Design of Animal Breeding Programs Sem. 2. Class 3, Cr. 3. Prerequisites: ANSC 31100 and STAT 50300. Junior or senior classification.

Integration of principles of animal breeding and genetics into animal improvement programs. Emphasis is placed on the interaction among genetics, nutrition, and physiology. One semester of applied genetics and population genetics is strongly recommended prior to taking this course as a graduate student. Professor Schinckel.

ANSC 51400 Animal Biotechnology Sem. 1. Class 3, Cr. 3. Prerequisites: AGRY 32000 or BIOL 24100 or BIOL 28000, and BCHM 30700. Junior or senior classification.

Presentation and discussion of the history and application of molecular genetics and molecular biology to the analysis of animal genomes and the use of gene transfer in research, animal agriculture, and human medicine. Ethical and economical ramifications of biotechnology in society will be introduced through reading assignments and discussion. A semester of genetics and general biochemistry is strongly recommended prior to taking this course as a graduate student. Professor Bidwell.

ANSC 52200 Monogastric Nutrition Sem. 1. Class 3, Cr. 3. Prerequisites: ANSC 22100 and (BCHM 30700 or CHM 33300). Junior or senior classification.

Digestion and absorption, nutrient utilization, and interrelationships in poultry, swine, and other monogastric animals. A semester of animal nutrition and general biochemistry is strongly recommended prior to taking this course as a graduate student. Professor Adeola.

ANSC 52400 Ruminant Nutrition and Physiology Sem. 2. Class 3, Cr. 3. Prerequisites: ANSC 22100 and (BCHM 30700 or CHM 33300). Junior or senior classification.

Physiological, microbiological, and biochemical aspects of digestion and metabolism in the ruminant animal. A semester of animal nutrition and general biochemistry is strongly recommended prior to taking this course as a graduate student. Professor Schoonmaker.

ANSC 53400 Advanced Reproductive Physiology Sem. 2. Class 3, Cr. 3. Prerequisite: ANSC 33300. Junior or senior classification.

A study of mechanisms that interact to control reproduction in farm animals. Current scientific literature and hypotheses are presented, and potential methods to enhance reproductive efficiency are examined. A semester of reproductive physiology is strongly recommended prior to taking this course as a graduate student. Professor Machaty.

ANSC 53500 Avian Physiology (BMS 52800) Sem. 2. Class 2, Cr. 2. Prerequisites: ANSC 23000 or (BIOL 20300 and 20400). Junior or senior classification.

A study of the basic principles of physiology and functional anatomy of birds. Topics include the following systems: muscular, nervous, cardiovascular, respiratory, digestive, lymphoid, endocrine, and reproductive. A course or courses that cover all of the systems of the body should be completed prior to taking this course as a graduate student. Professors Asem and Hester.

ANSC 53600 The Digestive System in Health and Disease Sem. 2. Class 2, Cr. 2. Prerequisite: BCHM 56100. Junior or senior classification.

Comparative study of the physiology of the gastrointestinal tract focused on the importance of, and interactions between, gut physiology, gut associated immune system and intestinal microorganisms in relation to health and disease. Offered in even numbered years. Offered in even-numbered years. One semester of graduate level general biochemistry is strongly recommended prior to taking this course as a graduate student. Professor Patterson.

ANSC 53700 Adipocyte Biology Sem. 1. Class 2. Cr. 2. Prerequisites: ANSC 23000 and BCHM 30700. Junior or senior classification.

Provide the student with a conceptual background in the development of adipose tissue and its biological function; with emphasis on the endocrine and immunologic aspects of the adipocyte. Differences between species will be emphasized where possible. Professor Ajuwon.

ANSC 55100 Muscle Development, Physiology, and Chemistry Sem. 2. Class 3, Cr. 3. Prerequisites: ANSC 23000, 30100, or 35100, and (BCHM 30700 or CHM 33300). Junior or senior classification.

The chemical and physical properties of muscle, including growth and development, ultrastructure, contraction, energy metabolism, and transformation to meat. Offered in even-numbered years. A semester of systemic physiology and biochemistry are strongly recommended prior to taking this course as a graduate student. Permission of instructor required. Staff.

ANSC 55000 Mechanisms of Animal Growth Development Sem. 2. Class 3, Cr. 3. Prerequisites: (BCHM 30700 or CHM 33300) and (ANSC 30100 or BIOL 23100). Junior or senior classification.

A study of the molecular and cellular processes controlling embryonic development and growth of domesticated animals. Includes discussions of current research concerning molecular mechanisms of fertilization, egg activation, and early development and endocrine factors controlling cell growth, differentiation and tissue formation, and turnover. Experimental approaches utilized for developmental and growth biology research are discussed. A semester of cell biology and biochemistry are strongly recommended prior to taking this course as a graduate student. Professor Collodi.

ANSC 55600 Stem Cell Biology Sem. 1, Class 3, Cr. 3. Prerequisites: BIOL 23100 and (AGRY 32000 or BIOL 24100). Junior or senior classification.

Adult or tissue stem cells are stem cells that reside in different tissues and, depending on where they are from, have different properties. The proposed graduate level course aims to cover the origin, identification, isolation, differentiation, self-renewal, and senescence of various tissue-specific stem cells and their function in animal tissue growth and maintence. This course will focus on the latest advances in adult stem cells and their applications in tissue regeneration. Professor Kuang.

ANSC 59500 Special Topics in Animal Sciences Sem. 1 and 2. SS. Cr. 0-3. Junior or senior classification.

Lecture presentation of specialized material not available in the formal courses of the department. The specific topic that is offered is indicated on the student's record. Permission of instructor required. May be repeated for credit. Staff.

ANSC 59500 Recent Advances in Animal Welfare Sem. 2, Class 2, Cr. 2.

This is a multi-instructional, multi-disciplinary course offered to senior undergraduates and graduate students at Michigan State University and Purdue. Lectures will originate at Michigan State University or Purdue and be video-linked to the partner universities. Lecturers will address a variety of issues relevant to animal welfare. Staff.

Graduate Level Course

ANSC 61100 Quantitative Genetics (AGRY 61100) Sem. 1. Class 3, Cr. 3. Prerequisites: AGRY (ANSC) 51100 and STAT 51200.

Continuation of AGRY (ANSC) 51100. Quantitative genetics in animals and plants. Genotypic and environmental variances; covariances between relatives; single- and multiple-trait selection and correlated responses; genotype-environment interaction. Inbreeding and crossbreeding: means, variances, heterosis, intra- and inter-population improvement. Staff.

ANSC 61200 Advanced Population Genetics Sem. 1. Class 3, Cr. 3. Prerequisites: ANSC 51100 or BIOL 58000 and one course in calculus.

Examination of genetic mechanisms influencing maintenance of genetic polymorphism, rate of evolution and speciation, limits to natural and artificial selection, species stability, and altruistic traits. Professor Muir.

ANSC 62000 Proteins and Amino Acids in Nutrition Sem. 1. Class 3, Cr. 3. Prerequisite: BCHM 56200.

Presentation of concepts concerning requirements for dietary amino acids, nutritional regulation of amino acid metabolism, and regulation of protein metabolism. Integrates biochemical and physiological functions of amino acids and features topics in nutritional regulation of whole-body protein turnover in mammalian and avian species. Offered in odd numbered years. Professor Adeola.

ANSC 62500 Nutritional Biochemistry and Physiology I (F&N 60500) Sem. 1. Class 4, Cr. 4.

This course provides a foundation in nutrition concepts, nutritional biochemistry and physiology particularly important to nutrition. Skills important to graduate education, including critical thinking skills, reading current literature, writing lay and scientific works, and several types of presentation skills will be emphasized. Professors Fleet and Teegarden.

ANSC 62600 Nutritional Biochemistry and Physiology II (F&N 60600). Sem. 2. Class 2, Cr. 2.

Continuation of ANSC 59500. Muscle and adipose tissue growth will be emphasized. This course will examine the post-absorptive use of nutrients for energy and for the synthesis of macromolecules. Discussions will address whole animal energetics and protein metabolism, the role of major organs in nutrient metabolism, and the influence of hormones and nutrients as regulatory signals. The integration of nutrient metabolism in different physiological states will be addressed. Professors Mills, Donkin and Ajuwon.

ANSC 62700 Nutritional Biochemistry and Physiology III (F&N 60700). Sem. 2. Class 2, Cr. 2.

This course will focus on the role of nutrition in the pathology and prevention of cardiovascular disease. Professors Burgess and Latour.

ANSC 68100 Animal Sciences Graduate Seminar Sem. 1 and 2. SS. Class 1, Cr. 1. May be repeated for credit.

Presentations by graduate students on topics of interest in animal sciences. Professor Mills.

ANSC 69100 Topical Research Problems Sem. 1 and 2. SS. Cr. 1-4. To be arranged with individual staff members prior to registration. Requires department head approval.

Supervised individual research projects. Written reports required.

ANSC 69800 Research M.S. Thesis. Sem. 1 and 2. SS. Cr. 1-18. Permission of instructor required.

ANSC 69900 Research Ph.D. Thesis. Sem 1 and 2. SS. Cr. 1-18. Permission of instructor required.

Objectives for Animal Sciences Courses

ANSC 10200 Introduction to Animal Agriculture

Upon successful completion of the course, the student should be able to:

- Become familiar with animal agriculture and food production.
- This course will be your stepping stone into the "World of Science."
- Whether you choose a career in the agriculture or otherwise, you will learn about new technologies driving agriculture in the 21st century.

ANSC 10600 Biology of Companion Animals

Upon successful completion of the course, the student should be able to:

- Develop an appreciation of the diversity of animals kept in captivity as companions.
- Recognize common breeds of the most popular companion animals.
- Learn and apply the basic principles of anatomy and physiology. For example, know the overall components of the animal skeleton and the properties of bone and cartilage. Also, know all the organs of the body and understand their major functions.
- Learn and apply the basic principles of animal behavior. Know the normal patterns of reproductive behavior of companion animals. Be able to identify aberrant behavior patterns and appreciate their etiologies.
- Learn and apply the basic principles of immunity (including active and passive mechanisms) and its relationship to health. Understand the interactions among nutrition, stress, and immunity. Appreciate the importance of colostrum and its role in early immunity.
- Learn and apply the basic principles of nutrition. Know the major and minor nutrient classes. Appreciate how dietary requirements change during the lifespan (and with activity level).
- Learn and apply the basic principles of digestion and metabolism. Understand the role of major nutrient classes in animal metabolism. Know the most common metabolic disorders of companion animals.
- Learn and apply the basic principles of digestion and metabolism. Understand the role of major nutrient classes in animal metabolism. Know the most common metabolic disorders of companion animals.
- Learn and apply the basic principles of reproduction. Know the endocrine substances that control reproductive events. Understand puberty, gestation, and parturition (including fats on specific companion animals). Understand the most common disorders associated with reproduction.
- Learn and apply the basic principles of neonatal physiology. Understand how environmental factors play a major role in the survival of the newborn. Be able to recommend proper care for newborn animals based upon their physiological and psychological needs.
- Create a web-based document (HTML) that is intended to teach others about a self-selected topic that deals with some aspect of the biology of companion animals (no previous HTML experience necessary).
- Acquire an e-mail account from Purdue for a 2-way communication with the instructor.
- Acquire a career account from Purdue (used to save HTML files to the student's home directory).

ANSC 18100 Orientation to Animal Sciences
Upon successful completion of the course, the student should be able to:
- Introduce students to Animal Sciences faculty, staff and programs of study, breadth of industries and career opportunities.
- Assist students in matching their passion, skills and personality to an appropriate career.
- Ensure that students are equipped with tools necessary to move toward their short- and long-term goals by enhancing communication, problem solving and team skills, exposing students to opportunities outside the classroom.
- Include on-campus learning experiences (research, teaching, extension), internships, and study abroad.
- Connect first-year students with successful upperclassmen.
- Enhance computer (e-mail, word processing, spreadsheet and web) skills.
- Continue personal leadership activities - interests, values, skills, and personality.

ANSC 20100 Functional Anatomy and Animal Performance
Upon successful completion of the course, the student should be able to:
- Understand the function of anatomical parts related to conformation of animals.
- Recognize norms for acceptable conformation of various species and relate significant characteristics to performance.
- Be able to relate the visual characteristics of animals to their performance and other selections/evaluation methods.
- Gain experience working in teams to research and prepare a PowerPoint presentation.
- Have a broad basis for upper-level ANSC courses that integrate genetic defects, reproductive problems and nutritional/environmental interactions on 14 animal soundness and efficiency.

ANSC 22100 Principles of Animal Nutrition
Upon successful completion of the course, the student should be able to:
- Develop understanding of classification and function of nutrients.
- Associate specific diseases with nutrient deficiencies.
- Understand the comparative digestive processes of animals.
- Understand the composition and use of major feed ingredients.
- Learn procedures of diet formulation and animal feeding.

ANSC 23000 Physiology of Domestic Animals
Upon successful completion of the course, the student should be able to:
- Use active learning techniques.
- Apply principles of animal physiology over a lifetime.

ANSC 24500 Applied Animal Management
Upon successful completion of the course, the student should be able to:

- Learn proper methods of conducting common management procedures in swine, beef, cattle, dairy cattle, poultry and sheep. Labs include procedures such as castration, ear notching, vaccinating, freeze branding, artificial insemination and other important management practices.
- Learn the basic overview of care and the life cycle of the food animal species. Also, overview of the basic disciplines of nutrition, reproduction, animal health, and animal well being are covered in lecture.

ANSC 28100 Career Planning in Animal Sciences
Upon successful completion of the course, the student should be able to:

- Develop interpersonal skills sought by employers in animal industries.
- Gain interviewing experience with faculty and industry leaders discover contacts as resources for career and academic growth.
- Broaden their awareness of careers available and learn what employers believe are the opportunities in their field.
- Develop employment and marketing tools including cover letters, resumes, and employer contacts to help obtain an internship in their chosen field.

ANSC 30100 Animal Growth, Development, and Evaluation
Upon successful completion of the course, the student should be able to:

- Understand animal growth and developmental processes and their relation to carcass and live animal traits.
- Be familiar with techniques used to evaluate meat animals and their carcasses.
- Be knowledgeable of carcass composition, including yields of carcass obtained from meat animals and the yields of edible product and waste materials obtained from meat animal carcasses.
- Be able to relate economically important traits of carcasses to traits of meat animals, and understand how carcass value is established and its relation to value of slaughter animals.

ANSC 30300 Animal Behavior
Upon successful completion of the course, the student should be able to:

- After completing this course a student should be able to demonstrate an understanding of the basic principles of animal behavior and apply these principles to farm animals in production systems or intensively housed wild animals.
- To enhance information gathering, assimilation and communication skills through written assignments and class presentation

ANSC 31100 Animal Breeding
Upon successful completion of the course, the student should be able to:
- Understand the role of genes and genetic mechanisms in controlling animal performance.
- Have an understanding of how to manipulate animal performance through selection and mating systems.
- Be able to optimize genetic improvement programs for most profitable genetic progress towards a breeding objective.
- Have an appreciation for the interaction between genes and the environment.

ANSC 32400 Animal Nutrition
Upon successful completion of the course, the student should be able to:
- Understand and apply basic nutritional principles in the use of available ingredients to provide optimum nutrition for growth, development and reproduction.
- Become familiar and competent with a least cost computer program on feed formulation. This program is used by the commercial feed industry.
- Enhance student understanding and appreciation of animal research with hands-on experience in conducting and summarizing nutrition research.

ANSC 33200 Environmental Physiology of Domestic Animals
Upon successful completion of the course, the student should be able to:
- Learn and apply the basic principles of environmental physiology. Emphasis will be placed upon the interactions between the physical environment and cellular reactions that attempt to maintain homeostasis.
- Students will supplement the instructor's presentations with assigned oral reports (specific subtopics and dates).
- Create a web-based document (HTML) that is intended to teach others about a topic that deals with some aspect of environmental physiology (no previous HTML experience necessary).
- Acquire an e-mail account from Purdue for 2-way communication with the instructor.
- Acquire a career account from Purdue (used to save HTML files to the student's home directory).

ANSC 33300 Physiology of Reproduction
Upon successful completion of the course, the student should be able to:
- To familiarize students with the communication that occurs between the hypothalamus and pituitary gland in regulating reproduction and how environmental factors modulate their function.
- To describe the structure and function of the reproductive systems of the male and female.
- To emphasize the ways by which reproduction can be controlled.
- To describe mechanisms which are involved in pregnancy and parturition.
- To discuss factors which influence reproductive efficiency.

ANSC 33400 Physiology of Reproduction Laboratory
Upon successful completion of the course, the student should be able to:
- Identify anatomical structures of the reproductive system.
- Associate physiological function with endocrine tissues.
- Experience research skills and techniques used in reproductive physiology.

ANSC 34500 Animal Health Management
Upon successful completion of the course, the student should be able to:
- Understand the factors that influence initiation and progression of disease in animals, including:
    1. basic immunology of host animals,
    2. basic mechanisms used by infectious agents to invade a host and cause disease, and
    3. environmental/management factors that contribute to or minimize occurrence of disease.
- Be able to recognize, understand and use accepted medical/scientific/management terms.
- Understand the management aspects of health concerns and be able to design management programs to address these concerns in covered animal species.

ANSC 35100 Meat Science
Upon successful completion of the course, the student should be able to:
- Understand the major processes involved in the conversion of animals into fresh and processed meat products.
- Possess in-depth knowledge of the basic principles behind each processing operation with regard to influence on ultimate product quality and safety.
- Be capable of making critical decisions relative to the influence ante and postmortem handling factors have on the quality, yield and utilization of meat products.
- Acquire a basic understanding of handling and preparing muscle foods safely, along with a basic understanding of meat's contribution to the human diet.
- Know how to combine knowledge of meat grades, specifications, anatomical location, and visual appearances in selection and purchasing of meat and meat products.

ANSC 35101 - Meat Science Lab
Upon successful completion of the course, the student should be able to:
- Apply the principles that guide the utilization of muscle tissues as food in the preparation of fresh and processed meat products.
- Practice safe handling in the preparation of meat products.
- Conduct experiments that demonstrate the physiological changes that occur during the conversion of muscle to meat.

FS/ANSC 36800 Dairy Products
Upon successful completion of the course, the student should be able to:
- Describe the composition and nutritive value of milk and dairy products.
- Outline and describe the major processing steps involved in the production of various dairy products (e.g. fluid milk, cheese, dried milk powders, yogurt, ice cream, etc.), with special emphasis on chemical, physical, and microbiological changes that occur at each step.
- Develop a sanitation program for a dairy farm or dairy processing plant.
- Discuss factors (i.e. chemical, microbiological, etc.) that cause the formation of both desirable and undesirable quality attributes of milk and dairy products.
- Describe the major steps involved in the product development process.
- Locate sources for major dairy food regulatory standards.

ANSC 37000 Livestock Evaluation
Upon successful completion of the course, the student should be able to:
- Provide students with the basic understanding of livestock selection techniques, such as visual appraisal, analysis of performance data, and utilization of expected progeny differences.
- Develop sound, logical reasoning abilities and oral presentation skills.
- Familiarize students with production resources, marketing options and criteria for efficient production of the final product.
- Provide students with the opportunity to meet producers throughout the state and region, and experience, first hand, the various methods producers employ to raise livestock efficiently.

ANSC 37100 Dairy Cattle Evaluation
Upon successful completion of the course, the student should be able to:
- To become familiar with the breeds of dairy, parts of dairy cattle and their relationship to function.
- Develop reasoning and decision-making skills for evaluating and judging dairy cattle.
- Develop techniques to analyze and evaluate functional type traits.
- Developing and presenting oral reasons to defend placing decision in competition.
- Provide some opportunity to meet, associate and converse with people of different breeds and organizations within the industry.

ANSC 37200 Horse Evaluation
Upon successful completion of the course, the student should be able to:
- Be familiar with functional horse conformation and type that maximizes athletic ability.
- Be able to apply the selection criteria established by national breed associations for selecting performance horses.
- Be experienced in applying the horse industry association standards to determining the quality of horses and their economic value.
- Have met and discussed training and selection issues with prominent trainers, breeders and industry leaders for potential judging and internship career employment opportunities.

ANSC 38100 Leadership for a Diverse Workplace
Upon successful completion of the course, the student should be able to:
- Learn opportunities and mechanisms used to pursue job placement, graduate school, or professional schools.
- Interact with alumni to build networks and appreciate the real-life challenges faced in careers in animal industries.
- Use numerous team experiences to develop comfort and effectiveness in functioning in teams and committees.

ANSC 393 Animal Industry Travel Course
Upon successful completion of the course, the student should be able to:
- Be exposed to different aspects of animal agriculture in the High Plains.
- Be exposed to national industry leaders and their philosophies.
- See production practices different from Indiana.
- Gain greater appreciation of size and scope of animal industry.
- Apply materials and class information to industry practices.
- Visit and learn about other campuses and graduate programs.
- Meet other people including fellow peers.
- Identify internship and permanent job opportunities.

ANSC 40400 Applied Animal Welfare
Upon successful completion of the course, the student should be able to:
- To understand the principles of animal welfare science in general and farm animal welfare in particular.
- To define and assess animal welfare using knowledge of animal health, productivity, physiology and behavior.
- To develop an appreciation of the relationship of ethics to science.
- To interpret and critically evaluate the literature on farm animal welfare.
- To enhance information gathering, assimilation and communication skills through written assignments, class presentation and by discussing issues with others whose views are different from their own.

ANSC 43500 Reproductive Management of Farm Animals
Upon successful completion of the course, the student should be able to:
- Learn and practice skills required for assisted reproductive technologies such as semen collection, semen evaluation, semen processing, semen preservation, estrus control, estrus detection, insemination, pregnancy diagnosis and embryo transfer.
- Learn how to apply the Animal Sciences disciplines such as nutrition, genetics, physiology, animal behavior and health in a systems approach that will result in the desired level of reproductive performance.

- Learn how to use a systematic approach to troubleshooting lowered reproductive performance in farm animals.
- Explore career opportunities associated with reproductive technologies.

ANSC 44000 Horse Management

Upon successful completion of the course, the student should be able to:

- Understand the scientific principles needed to make sound management decisions of horse feeding, breeding, selection, disease control and economic planning.
- Be prepared to select their own facility and management system and learn to use resources available in the industry.
- Meet and interview professionals in the horse industry to gain realistic perspectives and contacts.
- Apply knowledge to solve problems and plan a horse facility that will cash flow in cooperation with others and orally present the plan to the class.
- Practice thinking critically and logically analyze real industry case problems and present solutions to class.

ANSC 44100 Beef Production

Upon successful completion of the course, the student should be able to:

- To become familiar with common production practices that will:
    1. Improve the overall well-being of the animal
    2. Optimize Performance
    3. Maximize profit
- To gain experience and confidence about decision-making processes that affects the beef enterprise.
- To further the understanding of applied and basic beef production principles.
- To evaluate a situation and then develop a course of action or recommendation that is scientifically and economically sound.

ANSC 44200 Sheep Management

Upon successful completion of the course, the student should be able to:

- Integration of basic animal science disciplines into a successful sheep enterprise.
- Develop skills and learn information to make informed decisions regarding modern sheep management.
- Gain hands-on experience in laboratory to conduct important management practices with sheep.

ANSC 44300 Swine Management

Upon successful completion of the course, the student should be able to:

- To establish the importance of the swine enterprise as an integral part of agriculture.
- Study and discuss the technology that is used in modern day production.

- Examine the interrelationships that exist between performance levels for various traits and the profit potential of the enterprise.
- Develop an understanding of the nutritional value and the importance of the product created or produced.
- To understand the future challenges for the swine industry.

ANSC 44400 Dairy Cattle Management

Upon successful completion of the course, the student should be able to:

- Demonstrate an understanding of the principles of dairy production.
- Apply informed managerial practices to the modern dairy enterprise.

ANSC 44500 Commercial Poultry Management

Upon successful completion of the course, the student should be able to:

- Identify and provide the scientific basis for the principles and practices of breeding, physiology, management, nutrition, disease prevention, processing and marketing as related to the commercial production of eggs, turkeys, broilers, and ducks.

ANSC 44600 Companion Animal Management

Upon successful completion of the course, the student should be able to:

- Have an increased understanding of the economic scope of the pet industry.
- Have an increased understanding of the role of pets in American society.
- Have acquired the information to be responsible pet owners and/or companion animal professionals. This goal will be achieved by expanding student knowledge of housing practices, nutritional care, health care, behavior, and breeding of companion animals.

ANSC 47000 Livestock Judging

Upon successful completion of the course, the student should be able to:

- Critically evaluate and compare animals from various meat species based on visual appraisal, performance data and expected progeny differences.
- Develop sound reasoning skills to evaluate a situation or task in an allotted amount of time. Be able to "think on your feet" and make a decision based on logically thinking.
- Develop a logical, detailed oral presentation to defend the decisions made.

ANSC 47100 Dairy Cattle Judging

Upon successful completion of the course, the student should be able to:

- To enhance development of more accurate evaluation of animals for obvious and logical placings.
- To enhance an individuals practical analysis and decision-making processes.
- To further develop communications skills to properly present and defend those decisions with confidence.

- To participate in the procedure and competition and of a collegiate contest.
- To provide some opportunity to meet, associate and converse with people of different breeds and organizations within the industry.

ANSC 47200 Horse Judging

Upon successful completion of the course, the student should be able to:

- Practice relating functional horse conformation and type to the specific athletic ability being selected.
- Apply the selection criteria established by national breed associations for selecting performance horses in national competition.
- Practice thinking critically and logically to apply horse industry association standards to making decisions about the worth and ranking of horses.
- Gain practice and skills in speaking clearly and individually explaining their decisions under stress in a timely manner.
- Meet and interview professional breeders, trainers, and judges in the horse industry to gain realistic perspectives and contacts.

ANSC 48100 Contemporary Issues in Animal Sciences I

Upon successful completion of the course, the student should be able to:

- To better prepare Animal Sciences students for a broad range of career and educational opportunities.
- To further develop communicative skills and self-confidence for contacting and interviewing prospective employers, admission panels, etc.
- To gain a deeper insight into various technical and contemporary issues in animal sciences.

ANSC 49400 Animal/Food Security: International Service Learning

- Professional Preparation: Demonstrate proficiency in the application of the knowledge, skills, technology, extension methodology, and professional conduct of animal sciences.
- Critical Thinking: Demonstrate critical thinking by using data and reasoning to develop sound responses to complex problems in a rural international village setting.
- Communication: Demonstrate the ability to write and speak with effectiveness while considering audience and purpose.
- Teamwork: Demonstrate the ability to work effectively as part of a bi-national problem-solving team.
- Cultural Understanding: Demonstrate actual intercultural skills and knowledge of a range of cultures and an understanding of human values and points of view of other than their own.
- Social Science Principles: Demonstrate ability to apply social, economic, political, and environmental principles to serving an international rural village.
- Civic Responsibility: Demonstrate awareness of civic responsibility to community and society at large.

ANSC 51100/AGRY 51100/FNR 51100 Population Genetics
Upon successful completion of the course, the student should be able to understand:
- How and why artificial and natural selection works in plants or animals.
- Concepts of nature vs. nurture.
- How molecular genetics helps to understand, aid, and track these processes.

ANSC 51300 Design of Breeding Programs
Upon successful completion of the course, the student should be able to:
- Develop an understanding of the systematic design of animal breeding programs.
- To compare alternative animal evaluation and selection procedures in terms of genetic progress, economic returns and costs.
- Develop an outline for the future of animal improvement programs.
- Elucidate the interrelationship among genetics, nutrition, physiology and management in the design and interpretation of animal experiments.

ANSC 51400 Animal Biotechnology
Upon successful completion of the course, the student should be able to:
- Have an understanding of molecuar genetics methods used to create genetic maps, determine gene function and create and analyze transgenic animals.
- Have an understanding of the use of genetic maps for identification of genes that are important for animal agriculture and human health.
- Have an understanding of how transgenic animals are produced and how they can benefit animal agriculture and our knowledge of human diseases or disorders.
- Be able to understand and communicate the central ethical issues of biotechnology on society.

ANSC 52200 Monogastric Nutrition
Upon successful completion of the course, the student should be able to:
- Demonstrate an understanding of digestion, absorption, and post-absorption utilization of nutrients and energy in monogastric animals.

ANSC 52400 Ruminant Nutrition and Physiology
Upon successful completion of the course, the student should be able to:
- Describe the digestive physiology of ruminants as related to the animals' ability to convert low-quality feeds to high-quality human food and fiber products.
- Describe and integrate processes of feed indigestion, propulsion, and digestion, with end product release and the factors that affect these processes.
- Describe and integrate the absorption and metabolism of energy, proteins, lipids, minerals, and vitamins in productive ruminants.
- Evaluate and compare diets for domestic ruminants and formulate recommendations regarding adequacy for optimal animal performance and health.

ANSC 53400 Advanced Reproductive Physiology
Upon successful completion of the course, the student should be able to:
- Discuss the mechanisms of reproduction, with an emphasis on domestic species but also covering laboratory animals and humans.
- Understand sexual differentiation in development, gametogenesis, neuroendocrine control of reproductive cycles, fertilization and embryonic development, recognition of pregnancy and assisted reproductive technologies, as well as ethics in reproduction.
- Discuss current research topics.

ANSC 53500/BMS 52800 Avian Physiology
Upon successful completion of the course, the student should be able to:
- Explore the functional mechanisms of birds with emphasis on the physiology of body systems and tissues, including anatomy and histology.

ANSC 53700 Adipocyte Biology
- Provide students with a basic understanding of the importance of the adipose tissue in the regulation of key metabolic processes.
- Provide a forum for discussion of current research in adipose biology and its application to obesity, type II diabetes and metabolic syndrome in humans and efficiency of growth farm animals.
- Give students opportunities to read and evaluate research papers, orally present current research and participate in discussions of the results.
- Enhance understanding of the role of adipocytes/adipose tissue in regulation of metabolism and impact on obesity, diabetes and efficiency of animal growth.
- Develop critical thinking skills and the application of scientific principles to emerging issues in adipose biology research.
- Encourage lifetime learning habits by seeking information to fill gaps in a dynamic field of study.

ANSC 55100 Muscle Chemistry, Ultrastructure and Physiology
Upon successful completion of the course, the student should be able to:
- Review the structure and composition of muscle.
- Outline mechanisms involved in prenatal and postnatal muscle growth.
- Discuss muscle cell ultrastructure and myofibrillargenesis.
- Examine known and proposed mechanisms involved in muscle contraction.
- Study those processes involved in the conversion of muscle to meat.

ANSC 55500 Animal Growth and Development

Upon successful completion of the course, the student should be able to:

- Present current concepts of mammalian and avian growth and developmental biology including discussions of the molecular and cellular mechanisms of cell growth, differentiation and tissue formation.
- Discuss the modern experimental approaches used for the study of animal growth and development emphasizing the interdisciplinary nature of growth biology research.
- Provide the students with an opportunity to critically review current published research in the field of growth biology.

ANSC 61200 Advanced Population Genetics

Upon successful completion of the course, the student should be able to understand:

- Mixed Model Methodology as applied to artificial selection programs.
- Best Linear Unbiased Prediction (BLUP) derivation and use.
- Variance Component Estimation using Restricted Maximum Likelihood (REML).
- Integration of molecular and quantitative genetics in breeding programs.
- Mapping Quantitative Trait Loci (QTL's) using pedigrees.

ANSC 62000 Proteins and Amino Acids in Nutrition

Upon successful completion of the course, the student should be able to:

- Describe and integrate biochemical and physiological functions of amino acids as basis for nutritional requirements.

Specialized Courses in Animal Sciences

ANSC 29300 and 49300
SPECIAL ASSIGNMENTS

ANSC 29300 (el. 3 or 4) or **ANSC 49300** (el. 5 to 8) Sem. 1 and 2. SS. Cr. 0-3. To be arranged with individual staff members prior to registration. Approval of the department head required. Combination of ANSC 29300 and 49300 cannot exceed six credits.

Reading, discussions, written reports, seminar presentations, teaching, field or laboratory experiences provided for enrichment in special areas of animal science. Staff.

It is difficult to describe or put limits on ANSC 29300 and 49300 and it is not the objective of these guidelines to stifle the different approaches to Special Assignments. However, the intent of the course is to provide an opportunity for the undergraduate to gain knowledge of a specific topic, subject, or skill. ANSC 29300 or 49300 Special Assignments should be a learning experience or activity not available in a regular, formal course structure. Examples might include such things as individuals gaining laboratory skills, participation in extension activities, or peer teaching experiences.

GUIDELINES

1. Any member of the Animal Sciences faculty may assume responsibility for directing an ANSC 29300 or 49300 Special Assignment.

2. It is advisable that a student has a grade point average of ≥ 3.00 when requesting an ANSC 29300 or 49300 Special Assignment. Approval of ANSC 29300 or 49300 for students with a grade point average < 3.00 may be granted under extenuating circumstances.

3. ANSC 29300 or 49300 should not be added after the second week of the semester except under extenuating circumstances.

4. A minimum of 32 hours of student time should be used to complete each credit of ANSC 29300 or 49300. An interested student involved with a challenging activity may spend much more time than the minimum hour requirements.

REQUIREMENTS AND RESTRICTIONS

1. Individual faculty member and student must agree on the topic, credits, and ground rules before registration for the course.

2. Prior to enrolling a student in ANSC 29300 or 49300, the supervisor and student must complete a form describing the nature of the experience to the Undergraduate Programs Committee. The Undergraduate Programs Committee will decide if the problem conforms to

the guidelines established by the ANSC faculty and will have the authority to prohibit the offering of the problem if it does not meet the standards set by the ANSC faculty. Upon approval, the Teaching Coordinator will send a letter to the supervisor, student counselor and student detailing the expectations for completion of the course.

3. A written report or portfolio/diary for the professor in charge is required. An additional copy of the report or portfolio/diary must be submitted to the Teaching Coordinator by the deadline established for delivery of all other departmental course grades. Failure to do so will result in a grade of I (incomplete) being forwarded to the Registrar. The report will be available for perusal by interested ANSC faculty.

4. An individual faculty member may supervise not more than two ANSC 29300 or 49300 Special Assignments in a semester without the approval of the Department Head.

ANSC 29300/49300 - SPECIAL ASSIGNMENTS

Student's Name _____ Date _____

Student's Email _____ PUID _____

Problem Title (≤ 30 characters) _____

Numbers of Credits for Project (32 hours/credit; 3 credits max.) _____

Current GPA (≥ 3.0) _____ Hours Completed _____ Classification _____

Project Supervisor _____

Academic Advisor _____

Semester Conducting Project _____

Semester Registering for Project _____ Hours Registered: _____

Description of Problem:

Specific involvement of student:

For Teaching Committee Use

Approve _____

Not Approve _____

Reason(s): _____

ANSC 29500, 49500 and 59500
SPECIAL TOPICS IN ANIMAL SCIENCES

Special Topics in Animal Sciences Sem. 1 and 2. SS. Cr. 0-3. Approval of department head required. May be repeated for credit.

Lecture presentation of specialized material not available in formal courses of the department. The specific topic that is offered will be indicated on the student's record. Staff.

It is difficult to describe or put limits on Special Topics classes and it is not the objective of these guidelines to stifle the different approaches to these courses. However, the intent of the course is to provide an opportunity for a student to gain knowledge of specialized material not available in formal courses in the department.

GUIDELINES

1. Any member of the Animal Sciences faculty may assume responsibility for directing a Special Topics course.

2. Special Topics should not be added after the second week of the semester except under extenuating circumstances.

3. A minimum of 32 hours of student time should be used to complete each credit of Special Topics. An interested student involved with a challenging activity may spend much more time than the minimum hour requirements.

REQUIREMENTS AND RESTRICTIONS

1. Individual faculty member and student must agree on the topic, credits, and ground rules before registration for the course.

2. Prior to enrolling a student in Special Topics, the faculty member and student must complete a form describing the nature of the experience to the Undergraduate Programs Committee. The Undergraduate Programs Committee will decide if the problem conforms to the guidelines established by the ANSC faculty and will have the authority to prohibit the offering of the problem if it does not meet the standards set by the ANSC faculty.

3. An individual faculty member may supervise not more than two Special Topics in any one semester without the approval of the Department Head.

ANSC 29500, 49500 or 59500 - SPECIAL TOPICS IN ANIMAL SCIENCES

DESCRIPTION

Student's Name _____ Date _____

Student's Email _____ PUID _____

Problem Title (≤ 30 characters) _____

Numbers of Credits for Project (32 hours/credit; 3 credits max.) _____

Current GPA (≥ 3.0) _____ Hours Completed _____ Classification _____

Project Supervisor _____

Academic Advisor _____

Semester Conducting Project _____

Semester Registering for Project _____ Hours Registered: _____

Description of Problem:

Specific involvement of student:

For Teaching Committee Use

Approve _____

Not Approve _____

Reason(s): _____

ANSC 39000

Animal Sciences Internship

The Animal Sciences Internship is a cooperative educational program between the Department of Animal Sciences and employers who provides facilities and instruction to assist students in improving skill and knowledge needed for their chosen vocation. The internship program is an off-campus supervised field experience related to the student's professional interest. The internship is available for variable credit with the opportunity to earn up to three credits during the fall, spring, or summer semesters. A maximum of three hours of intern credit can be earned as free electives.

The internship is available each regular semester and during the ten-week summer session to students majoring in Animal Sciences. The course is limited to students who have sophomore, junior, or senior classification and approval of the Animal Sciences Undergraduate Programs Committee. Any student with good standing with Purdue University may enroll.

Students seeking internship experiences are to complete a course application form stating the kind of internship desired and their preference for geographic location. Prior to the beginning of the semester in which the internship is to be taken, the student must arrange a personal or telephone interview with a representative of the cooperating agency. The student's academic advisor and the agency representative must determine whether an available position will provide an experience that supports the student's academic and career objectives. Further, they should be assured that the student's interests and academic preparation would satisfy the demands of the cooperating agency. On approval of the agency representative, and the work description or schedule of anticipated activities, the student will submit the "Plan for Internship" to the Animal Sciences Undergraduate Programs Committee. At that time, the internship agreement will be completed. The completed and signed agreement must be submitted to the Animal Sciences Undergraduate Programs Committee before the student begins his/her internship program.

The student may schedule the course for variable credit (one to three hours) in a semester for a total of three hours for the entire undergraduate career. The credit will be based upon the evaluation of the position by the academic advisor and Animal Sciences Undergraduate Programs Committee using the following criteria: (1) number of skills to be learned, (2) nature of the skills and knowledge the student can acquire that cannot be obtained at the University, (3) the individual needs of the student, and (4) the amount of time committed to the internship.

The student will register for the course the first semester following his/her return to campus from the internship when the assignment of the written report and oral presentation is completed. See your academic advisor or Barry Delks, Career Services and Alumni Relations, Lilly Hall, Room 2-109, or Mark Diekman, Undergraduate Programs Coordinator, Lilly Hall, Room 2-111, for more details concerning credit for internships.

ANSC 49100
SPECIAL PROBLEMS

Special Problems Sem. 1 and 2. SS. Cr. 1-3 (el. 5-8A). To be arranged with individual staff members prior to registration. (May be repeated for a maximum of six credits with approval of department head.)

Supervised individual research or library assignments. Written reports required.

It is difficult to describe or put limits on ANSC 49100 and it is not the objective of these guidelines to stifle the different approaches to this Special Problem course. However, it is proper to note the intent of the course, which is essentially to provide an opportunity for the undergraduate to do a research problem. To this end, the current School of Agriculture catalog describes the course as "supervised individual research or library assignments." In addition to the experience and information derived, an important benefit to the student may be the contact and experience in working with a member of the faculty. An ANSC 49100 Special Problem should be a learning experience for the student in subject matter not available in a formal course structure. The project should be imaginative, stimulating and challenging.

GUIDELINES

1. Any member of the Animal Sciences faculty may assume responsibility for directing an ANSC 49100 Special Problem.

2. Any student in good standing (GPA $\geq$ 2.50) may request to do an ANSC 49100 Special Problem. However, 49100 is essentially an upper level course and is intended primarily for juniors and seniors.

3. ANSC 49100 Special Problems should not be added after the first week of the semester except under extenuating circumstances.

4. A minimum of 32 hours of student time should be used to complete each credit of ANSC 49100. An interested student studying a challenging problem may spend much more time than the minimum hour requirements.

5. Most Special Problems should include a literature search and where appropriate, pertinent literature should be referred to in the report. Also, many Special Problems may lend themselves to a simple statistical analysis, which the student can use as a tool to help make interpretations of the data.

REQUIREMENTS AND RESTRICTIONS

1. Individual faculty member and student must agree on the subject matter, scope of the problem, credits, and ground rules before registration for the course.

2. A written report for the professor in charge is required. Public presentation of results by either an oral or poster presentation is encouraged. An additional copy of the report will be submitted to the Teaching Coordinator and will be available for perusal by interested staff and students in the Department of Animal Sciences.

3. An individual instructor may supervise not more than two ANSC 49100 Special Problems in any one semester without the approval of the department head.

4. Prior to enrolling a student in ANSC 49100, an ANSC staff member must complete a form describing the nature of the problem to the Teaching Committee. The Teaching Committee will decide if the problem conforms to the guidelines established by the ANSC faculty and will have the authority to prohibit the offering of the problem if it does not meet the standards set by the ANSC faculty.

ANSC 49100 - SPECIAL PROBLEMS

DESCRIPTION

Student's Name _____ Date _____

Student's Email _____ PUID _____

Problem Title (≤ 30 characters) _____

Numbers of Credits for Project (32 hours/credit; 3 credits max.) _____

Current GPA (≥ 3.0) _____ Hours Completed _____ Classification _____

Project Supervisor _____

Academic Advisor _____

Semester Conducting Project _____

Semester Registering for Project _____ Hours Registered: _____

Description of Problem:

Specific involvement of student:

For Teaching Committee Use

Approve _____

Not Approve _____

Reason(s): _____

Animal Sciences at Purdue….“The Place to Go”
To Gain…… **Valuable Leadership Skills and Fun in various Clubs, Activities, and Teams**

“I will always ask about your clubs and activity involvement in placement interviews” -industry quote

Some animal related clubs and activities

- **Animal Sciences Ambassadors –** Animal Sciences Ambassadors serve a vital role to the department as a liaison between the faculty and students as well as promoting the department across the state of Indiana. Ambassadors take part in many high-school recruiting trips, tours on campus as well as the Animal Sciences Research and Education Center. Ambassadors also work at trade show booths to promote Purdue and plan the annual Boiler Barnyard. Applications are available the spring semester of each year. Interviews are conducted prior to selection.

- **Avian Science Club** – An organization that exposes students to the various career opportunities in the poultry industry and allows interaction with poultry research faculty.

- **Block and Bridle** – The largest animal science option club on campus. Some of their activities include lamb shows, a judging contest, Tot’s Day for local school children, and many other social activities.

- **Dairy Club** – An organization of diary producers and students interested in dairy cattle. They interact with dairy faculty, promote 4-H and FFA dairy judging, and learn about the dairy industry.

- **Pre-Vet Club** – An organization for students interested in the Pre-Vet option. Meetings include vet students presenting case studies, specialty veterinarian speakers, and discussions of topics in veterinary medicine.

- **Rodeo Club and Team** – An organization open to any student interested in rodeo. The team competes in the Ozark Region of the Intercollegiate Rodeo Association. Options include speed events such as barrel racing or rough stock events such as bull and bronc riding.

- **Horse, Dairy, and Livestock Judging Teams** – These intercollegiate teams give students opportunities to learn about evaluating livestock and improve their communication skills. Each team travels to several contests each year. The judging teams sponsor 4-H and FFA youth judging contests as well.

- **Intercollegiate Horse Show Team** – An organization open to anyone interested in horses. The group consists of both a hunt seat and western team. The teams participate in ten horse shows each year. Purdue hosts two of the ten shows at Foxton Farms located near the campus.

- **Polo Club and Team** – An organization open to all who have an interest in learning about polo. Both a women's and a men's team compete in three to five matches a year. The club owns several horses and is in the process of building their own arena.

- **CHAPs** – THE CHAPS stands for Therapy, Health, and Education through Children and Horses As Partners. THE CHAPs is a therapeutic horseback riding program that benefits people with disabilities in Tippecanoe and surrounding counties. Purdue students serve many roles in this program. Many students volunteer to help with the lessons by side-walking or leading horses. Students can also groom and prepare the horses for lessons.

- **HELPING PAWS** - A student organization dedicated to bettering the lives of animals in need. They raise animal awareness in the community by volunteering for many animal related causes and coordinating fundraiser's for animals and organizations. A few regular activities are washing animals at the Tippecanoe County Humane Society, walking the greyhounds at the vet school, and helping out at a puppy obedience class.

- **ANIMAL BIOSCIENCE CLUB** - An organization open to students interested in animal science. The purpose of the club is to introduce members to different aspects of animal science and to further advance their knowledge within the field. Students are exposed to the many faces of animal research through informational meetings, fun and educational field trips, and guest speakers.

Academic Quadrathlon Competition

The academic quadrathlon provides a challenge for Animal Science students in the areas of Animal, Poultry and Food Sciences. Quadrathlon competition consists of four parts: laboratory practicum, written exam, oral presentation and quiz bowl. All aspects of the quadrathlon are team oriented, as one answer is given for each question in the lab practicum and written exam. In the oral presentation, team members must work together to present difficult and complex topics in a simple form. Although the quiz bowl provides an opportunity for individuals to respond, bonus questions are answered on a team basis. Local competition is generally held in February with the winning team traveling to the Midwestern Section of Animal Science competition in March. Competition is open to all NCSU students with an interest in Animal, Food, or Poultry Science. Contact Dr. Dale Forsyth, Lilly Hall, Room 3-225, 765-494-4841, for more information.

Ag Council

Membership is limited to 20 agriculture students who are majors in any program in the School of Agriculture. One-year memberships run from January to December. Prospective members must fill out applications during the fall semester and undergo a selection process conducted by current members. There are five officers elected each year from the 20 members. The goals of Ag Council are to foster interactions among students, staff, and members of the community. Examples of sponsored events include an ice cream social, large career fair, mock interviews, Ag Week displays and information booths, dances, and fund raising for charities.

Alpha Zeta

Alpha Zeta is a national agriculture honorary professional fraternity. The goals of Alpha Zeta are to promote agriculture on campus and in the community from all the different perspectives and to provide a group for high scholastic students to come together and be involved in many different activities. Potential members must demonstrate or have the potential for the following characteristics: scholarship, leadership, fellowship and character.

Activities include: regional and national meetings, School of Agriculture Tailgate, leadership and scholarship awards.

Avian Sciences Club

The mission of the Avian Sciences Club is to expose students to various career opportunities in the poultry industry and to get students involved in commercial poultry production. Students can interact with representatives from the industry and also with Purdue faculty completing poultry research.

The club is involved with a variety of activities such as attending special events within the industry, touring facilities of various companies, doing volunteer work within the community, and participating in the annual Boiler Barnyard event at Purdue. The Avian Sciences Club is supported by the Turkey Market Development Council and the Indiana State Poultry Association. Currently, there are about twenty undergraduate and graduate students in the club. Anyone with an interest in poultry can join! All students and faculty are welcome to participate in club activities and to attend club meetings.

Block and Bridle

Purdue became a member of the National Block and Bridle Club in 1956. It had previously been known as the Hoof and Horn Club since 1917. Character, sincerity and a moral life are asked of members when they are initiated into the club and are depicted in the straight perpendicular of the "B." The distinct curves of the "B" are symbolic of social pleasure, mental energy, and the determination of members. The meat block represents the material aspects of their life and profession. The bridle stands for the behavior of the Block and Bridle members, the control over themselves that they try to maintain, the mannerisms and respect they show towards others, and the manner with which they treat animals.

Activities include: judging contest, Block and Bridle Royal, Tots Day, Black and Gold Classic Sheep Show, regional and national meetings, School of Agriculture Career Fair, School of Agriculture Tailgate, Swine Day, Boiler Barnyard, and softball teams.

CERES

CERES Agriculture honorary was founded in 1920 and is named for the Roman goddess of Agriculture. Our purpose is to: 1) stimulate interest in Agriculture and to become more aware of the opportunities that exist beyond ones own department, 2) to promote better student/faculty associations at Purdue, and 3) to recognize outstanding students in Agriculture at Purdue. The membership of CERES consists entirely of students who have demonstrated high scholarship (GPA > 2.75), leadership, and character. CERES membership is limited to juniors and seniors from any option in the School of Agriculture at Purdue.

CERES is a service honorary and every member serves in some capacity. CERES members participate in both campus and community activities, including helping with departmental activities, sponsoring seminars and programs, Project Future, Parents Weekend, Habitat for Humanity, soup kitchen, and clean-up projects. In-between the service projects, members find time to schedule fun activities such as eating pizza and various social activities. CERES members are true ambassadors and serve to promote agriculture both on campus and in the community.

Dairy Club

The Purdue University Dairy Club is a 40+ member organization that is active in many activities throughout the year. The Dairy Club participates in Boiler Barnyard, the Purdue Royal, ADSA, and the Hoard's Dairyman Judging Contest. The club also puts on the State-Wide Dairy Judging Invitational, which is a lot of work for the small organization. Members of the club also help with the State 4-H and FFA Dairy Judging Contest. Because of the Dairy Club's hard work in their many activities, they were recognized as the Top Agricultural Option Club of 2000.

Intercollegiate Horsemanship Club

The Intercollegiate Horsemanship Club (PIHC) is the parent student organization of Purdue University's Horse Show Team. Students, regardless of major, who are interested in learning more about the horse industry and want to show in the Intercollegiate Horse Show Association (IHSA) shows belong. The PIHC fields both western and hunter seat teams and Jerry Steinmetz is the head coach. Competition levels exist for those who prefer beginner walk-trot to those students who have competed nationally at the very highest levels of their discipline. The teams ride Purdue owned horses and tack at Foxton Farm and conduct evening group lessons for club members. Purdue is a member of the IHSA Zone 6, Region 2, which includes all of Indiana and Illinois. Purdue has won the Hunt Seat Regional Championships 14 of the last 17 years and routinely has both individuals and teams qualify for Nationals. For more information about the ISHA see www.ihsa.com, and for information about the PIHC, contact Mark Russell (mrussell@purdue.edu).

Polo Club

The Polo Club (PPC) is very unique in that it is a student organization that operates and maintains its own stable with Purdue owned polo ponies. The PPC fields both men's and women's varsity and junior varsity teams. Purdue is known not only for attracting some experienced USPA goal-rated players, but also for teaching experienced horse riders the sport of polo from the beginning. Teams practice regularly and club membership includes weekly polo lessons, hands-on horse care experience, and the opportunity to try out for the teams. Purdue regularly competes at Georgetown, Virginia, Skidmore, Harvard, Yale and Cornell, and practices against Culver Academies. For more information about the United States Polo Association, contact http://www.uspolo.org. For more about the Intercollegiate Polo Club, contact Mark Russell, at mrussell@purdue.edu.

Pre-Veterinary Club

The Pre-Veterinary Club is an informational and social club whose objective is to bring together students that are interested in a career in veterinary medicine. Meetings are held one to two times per month and consist of club business and planning, a guest speaker from the veterinary profession, and a case presentation by a senior veterinary student using a case currently under treatment at the veterinary school. Activities include the Veterinary School Open House in April, finals baskets for fellow students, trips to Wolf Park and the Indianapolis Zoo, and more. The club is a source for opportunities to volunteer with the local zoo, wildlife rehabilitation organizations, jobs within the veterinary school, animal-related therapy organizations, and much more. The requirements to be an "active" member are as follows: Attend all meetings during a semester with a maximum of 2 excused absences, participate in one fundraising activity and one other activity sponsored by the club. A list of members in good standing is shared with the Dean's office of the veterinary school in support of the veterinary application process.

Rodeo Club

The Purdue Rodeo Club is a great way for students interested in rodeo to get involved at school. Purdue is a member of the National Intercollegiate Rodeo Association and students that choose to compete at that level can. The Rodeo Club is an excellent opportunity for students with similar interest in the sport to meet each other and get involved in community service projects. This club is open to all majors.

Sigma Alpha

The Sigma Alpha Beta Chapter is a professional and social agriculture based sorority that emphasizes scholarship, leadership and service. The sorority has an objective of maintaining a 2.25 grade point average. It is not required that you live in the house to be in the sorority, but they do own a house that several members reside in. In order to enhance leadership opportunities, it is required by the Beta Chapter for the members to be involved with at least one other campus organization. The Beta Chapter does service projects that influence the School of Agriculture and the community with projects like Rock A Thon, Coffee Hour and Adopt a Highway. They promote professionalism by conducting monthly meetings in professional dress and guest speakers share their professional experience with the chapter. They also strongly promote sisterhood bonds through sisterhood functions and retreats, study breaks, a fall barn dance and formal dances in the winter and spring.

Judging Opportunities in Animal Sciences

Dairy Judging Team

The Dairy Judging Team competes in the fall semester with three to four major contests including the national at the World Dairy Expo in Wisconsin. To be a part of the team, one must register for ANSC 47100. It meets two days a week and field trips are done every Saturday until the national contest. The judging team gives students an opportunity to evaluate dairy cattle in Indiana as well as the Midwest and eastern states. They develop decision skills and verbal communication. Traveling to the farms and contests allows students to contact people and companies of the dairy industry for future internships or employment opportunities. It also encourages a certain discipline to maintain class, field trip and contests needs. Evaluating dairy cattle on the judging team is important to students interested in the industry, but is secondary to the personal growth and work skills one can experience.

Livestock Judging Team

Participation on the livestock judging team is an opportunity for students to enhance their decision making and communications skills, broaden their knowledge of animal production and performance records, learn from and meet the industry leaders, and compete with college students from across the country. Judging team members learn to apply scientific principles of animal growth and composition, evaluation, and selection of various species. Livestock judging team members learn to evaluate breeding and market classes of beef cattle, swine, and sheep. Production data and various environmental scenarios will accompany the livestock classes to further advance the working knowledge of the industry and production situations. Livestock judging competitions are held throughout the United States to challenge the students and determine what knowledge and communication skills have been obtained. These competitions consist of classes of animals that contest contestants and official committee members place. Students' placings are compared to the officials' placings and scored based on the cut system. Following the placing portion of the contest, each student presents their oral reasons on the classes to defend their decisions. Those students that are the most convincing and accurate receive the highest scores. Following the competition, an awards ceremony is held to recognize the teams and individuals that excelled in the event.

Some of the contests attended annually include the All-East Contest, the National Barrow Show in Austin, Minnesota, the American Royal in Kansas City, and the North American in Louisville, Kentucky. Contests consist of 12 classes of breeding and market animals and reasons designated classes. ANSC 30100 is a prerequisite for ANSC 37000 (Livestock Evaluation) and ANSC 47000 (Livestock Judging).

Horse Evaluation and Judging

This activity is a culmination of courses and experiences that prepare the horse industry enthusiast to represent Purdue while traveling to major horse shows across the country and competing in intercollegiate horse judging contests. Students individually place 8 - 12 classes in the morning and give oral reasons on 4-5 classes explaining their placing/scorings in the afternoon. For many, the experience starts as youth showing horses or competing on FFA or 4-H horse judging teams, for others it begins with a course in animal anatomy and the desire to learn as much as possible about the horse industry. Students normally take ANSC 20100, a three credit course on Animal Anatomy & Functional Performance, in the fall of their sophomore year if they are interested in conformation, soundness, locomotion and form-to-function issues of horses.

This is followed by ANSC 37200, Horse Evaluation, a two credit hour course in the spring that covers conformation, breed characteristics, and judging criteria and rules for all judged performance events. During the spring semester, the team usually competes at EquiFest in Wichita, KS, the Tennessee Walking Horse National Contest and the MTSU Invitational in Murfreesboro, TN, and the Paint Horse Spring Spectacular, in Ft. Worth, TX. The ANSC 37200 class also hosts the Purdue Invitational Horse Judging Contest and assists with the State 4-H/FFA Horse Judging Contest. ANSC 47200, Horse Judging, a one-credit hour course, is the senior horse judging team itself. This class practices and prepares for contests, including the Morgan Grand National, the Quarter Horse Congress, the US Arabian Nationals, the AQHA World, the National Reining Horse Association Futurity, and the National Western at Denver.

Students in good academic standing at Purdue are eligible to compete on the intercollegiate teams. They should be prepared to pay for their food and share their lodging costs while on judging trips. The time spent on practices and judging trips is extracurricular and above the requirements for the classes. It is the student's responsibility to make arrangements with each instructor to meet all assignments and assessments for their courses missed while away from campus. Refer elsewhere in this handbook to the learning objectives and descriptions of the classes involved in the horse judging program.

<u>Animal Sciences at Purdue</u>…."*The Place to Go*" ***For***

……………..….Scholarships and Awards

Animal Sciences Scholarships and Awards - $6,000 to *incoming* ANSC majors (Fall 2012):

THE ERIC B. LUCKMAN AWARD - $1,000. Recipient must have SAT ≥ 1500 or ACT ≥ 21 (combined math, verbal, and writing scores). Indicate potential for leadership in the animal agriculture industry. Articulate plans to work in the animal agriculture industry or for post-graduate education that will ultimately impact upon the industry. Demonstrate progress in the development of academic skills, leadership, and self-improvement.

CHARLES L. AND JEAN RUEFF AWARD - $1,000. Delineate potential for leadership in the swine industry. Interest in the swine industry such as previous industry involvement, or post-graduate plans for industry employment. Demonstrate progress in the development of academic skills, leadership, and self-improvement.

THRASHER FAMILY AWARD – Three $1,000 awards. Recipients must have SAT ≥ 1500 or ACT ≥ 21 (combined math, verbal, and writing scores). Recipient must demonstrate progress in development of academic skills, leadership and self-improvement. If two or more candidates are equally qualified, the award will be given to the recipient demonstrating the greater financial need.

LILLY MERIT SCHOLARSHIP - $1,000. Recipient must rank in the upper 10% of high school graduating class. If your high school does not provide rank, have your high school counselor send an email to Mark Diekman (mdiekman@purdue.edu) to verify that you are in the top 10% of your class. Recipient must have SAT ≥ 1630 or ACT ≥ 24 (combined math, verbal and writing scores). Indicate academic excellence in high school. Demonstrate involvement and leadership in high school activities. Clarify involvement and leadership in livestock, poultry and/or animal product retail activities. Delineate professional objectives in the area of animal science. If the recipient continues as a full-time student in the Department of Animal Sciences and maintains a GPA of ≥ 3.25, the scholarship can be renewed automatically for three succeeding years.

Animal Sciences Scholarships and Awards - $63,000 to *current* ANSC majors:

Current Freshmen, Sophomores and Juniors:

BALTZELL AGRI-PRODUCTS SCHOLARSHIP - Three $1,000 renewable awards for students with a 3.50 GPA and enrolled in a minimum of 12 credit hours. Pre-vet students are not eligible. Sponsor: Robert Baltzell in honor of Drs. Millard Plumlee, Hobart Jones and Martin Stob.

BOOK-HARMON LEADERSHIP SCHOLARSHIP - $1,000. Recipient must have a minimum GPA of 3.00, possess good communication and leadership skills, and be involved in extracurricular activities. Sponsors: Drs. Robert Book and Bud Harmon.

ELANCO SCHOLARSHIP - $1,000. Open to the following ethnic groups: African American, Asian American, Hispanic Americans, Native Americans, Pacific Islanders. Student must have a GPA of ≥ 3.00 and possess good communication and leadership skills. Must show involvement in departmental clubs and/or other collegiate organizations. Sponsor: Elanco Animal Health.

JOHN HENRY HINKLE MEMORIAL SCHOLARSHIP - Fifteen $1,000 awards for students with a GPA of ≥ 3.50 and enrolled in a minimum of 12 credit hours. Recipients must demonstrate academic proficiency in animal science. Preference given to Monroe county residents. Sponsor: Mrs. Joseph N. Garton in memory of her grandfather.

R. L. HOGUE - $1,000. Recipient must demonstrate leadership interest in and potential for contributing to the poultry industry. Sponsors: Friends of R. L. Hogue.

EMERSON J. KUHN SCHOLARSHIP – Two $1000 scholarships. Demonstrated commitment to active leadership in high school, local community or Purdue University. GPA ≥ 2.65. Sponsors: Dr. William E. Kuhn and Joyce M. Kuhn.
KEITH LOTZ MEMORIAL SCHOLARSHIP – Two $1,000 scholarships. Recipients must demonstrate an interest in animal production with a GPA of ≥ 2.70. Must possess good communication and leadership skills and be involved in departmental clubs and/or other collegiate organizations. Sponsors: Family and friends of Keith Lotz.
TRUMAN AND MARJORIE MARTIN STUDY ABROAD - $1,000. Recipient must be participating in the Study Abroad Program for either a full semester or entire academic year. Written statement of travel and study plans and expected educational benefits is needed. Indicate involvement in extracurricular activities. GPA ≥ 3.00. Sponsors: Dr. Truman and Marjorie Martin.
MILTON AND MYRTLE MILLER AGRICULTURE SCHOLARSHIP - $1,000. Recipient must have a minimum GPA of 2.65 and have filed for need-based financial aid. Sponsor: George M. Miller.
CHARLES L. AND JEAN RUEFF AWARD – Three $1,000 awards. Recipients must show an interest in the swine industry such as previous industry involvement or post-graduate plans for industry employment. Awardees must demonstrate progress in the development of academics, leadership and self-improvement. Sponsors: Dr. Larry and Gail Rueff.
THRASHER FAMILY AWARD – Two $1,000 awards. Recipients must demonstrate progress in the development of academic skills, leadership and self-improvement. GPA ≥ 2.70. Sponsors: The George Thrasher family.

Current Sophomores Only:
LOUJA UNDERGRADUATE SCHOLARSHIP - $1,000. Recipient must foster communication and leadership skills in animal industries with a GPA of ≥ 3.20. Sponsor: Dr. Jake Krider in honor of Louise Krider.
HENRY MAYO SCHOLARSHIP - Three $1,000 awards. Recipients must indicate an interest in animal food products and animal agriculture. Must demonstrate extracurricular leadership and citizenship activities. Sponsors: Henry A. Mayo and friends.

Current Sophomores and Juniors:
BRATTON-WEBSTER MEMORIAL SCHOLARSHIP – Two $1,000 scholarships. Recipients must be involved in undergraduate research in biology/biotechnology of food-processing animals. Sponsor: In memory of Robert Logan Bratton and Sarah Hannah Davis Bratton.
FRANK AND WINI CLARK BEEF INDUSTRY SCHOLARSHIP - $1,000. Recipient must demonstrate leadership and an interest in the beef industry. GPA ≥ 2.70. Sponsors: Frank and Wini Clark.
OWEN AND FRAN CRISMAN FAMILY AWARD – Three $1,000 awards. Recipient must have GPA ≥ 3.00. Sponsors: Crisman family in honor of Dr. Martin Stob.
PAUL E. NEWMAN SCHOLAR AWARD - Five $1,000 awards. Recipients must present evidence of leadership, extracurricular activities, character and potential future community leadership and service. Awardees must also illustrate an interest in topics outside their chosen field. Sponsor: Paul E. Newman.

Current Juniors and Seniors graduating in Fall 2011:
RICHARD A. PICKETT MEMORIAL AWARD - Two $1,000 awards. Recipients must demonstrate academic excellence, leadership, citizenship and extracurricular activities with an interest in animal agriculture. Sponsors: Friends of Dr. Richard A. Pickett.
W. A. RAFFERTY LIVESTOCK LEADERSHIP AND CITIZENSHIP AWARD - $1,000. Demonstrate potential for outstanding leadership and citizenship in the livestock industry. GPA ≥ 2.70.
ROTHENBERGER SCHOLARSHIP – Three $1,000 scholarships. Recipients must demonstrate potential for outstanding leadership and citizenship in the swine industry. GPA ≥ 2.70. Sponsor: Erland Rothenberger.

All Current Students:
OUTSTANDING FRESHMAN, SOPHOMORE, JUNIOR AND SENIOR AWARDS - $1,500 each. One student in each class is selected on academics (60%) and leadership (40%) and nominated for College of Agriculture awards. Students with GPA ≥ 3.25 will receive instructions in late January for application procedures.

To be eligible for any award or scholarship, a student must be enrolled for at least 12 credits as an undergraduate Animal Sciences major on the West Lafayette campus of Purdue University for the Fall 2011 semester. For other financial aid information, contact the Division of Financial Aid at 765-494-5050. For more information about Animal Sciences scholarships, contact Dr. Mark Diekman at 765-494-4829 or mdiekman@purdue.edu.

Animal Sciences at Purdue …. *"The Place to Go''*
To Prepare for **…Animal Industry Careers**

The following are examples of actual careers pursued by graduates of the Department of Animal Sciences. Although our options are designed to best prepare students in their area of interest, employers interview and employ graduates across options based upon their work experiences, background, and personal characteristics and skills.

Animal Agribusiness

- **Feed sales representative**
- **Public relations for animal business**
- **Association Field service representative**
- **Technical services representative**
- **Animal supply / retail store manager**
- **Farm marketing /business consultant**
- **Ag Loan/finance representative**
- **Pharmaceutical sales representative**
- **Animal Food Marketing/Procurement**
- **Financial/marketing specialist**

Pre-Veterinary Science

- **Private veterinary practitioner – small, large, mixed, food**
- **Herd health consultant**
- **University clinician, teacher or Researcher**
- **Industry health research and technical support**
- **Specialist veterinarian in large group practice**
- **Public Health Officer**
- **USDA or company Meat food quality inspector**
- **Human Medicine or Dentist**

Biotechnology

- **Molecular geneticist**
- **Research and development specialist**
- **Transgenic animal scientist**
- **Cellular growth biologist**
- **Research laboratory manager or technician**
- **Animal metabolism scientist**
- **Immunologist**
- **Neonatal and developmental biologist**

Animal Products/Processing Science

- **International Meat exporter**
- **Procurement manager for meat processor**
- **Retail or wholesale meat processor**
- **Quality control technician for meat**
- **Live animal contracting/procurement**
- **Growth & development biologist**
- **Quality assurance in milk & egg industries**
- **Further processed research & development**
- **Processed meat broker**
- **Milk processing representative**
- **Poultry meat and egg distributor and buyer**
- **Meat processing line supervisor**
- **Value added meat product researcher**
- **Food quality & safety chemist**
- **Animal product evaluation & improvement**
- **Industry or university meat scientist**

Animal Science

- **Animal nutrition consultant or researcher**
- **Breeding/mating systems consultant**
- **Animal behavior & modification specialist**
- **University animal sciences teacher**
- **Animal care and well-being scientist**
- **Reproductive physiologist**
- **Animal population geneticist**
- **Animal management environmental scientist**
- **Animal behavior teacher/researcher**
- **Animal nutrient management researcher**

Animal Production

- **Swine breeding, farrowing, nursery, finishing manager**
- **Beef cow-calf or feedlot manager**
- **Humane society director, education specialists**
- **Lab animal research manager**
- **Pet retailer or kennel manager**
- **Horse, dog, cat or pet breeding manager/supplier**
- **Retail pet store manager, pet groomer**
- **Layer contract flock supervisor, turkey, broiler or duck production manager**
- **Flock supervisor for agri-business**
- **Pet food, health, equipment sales and technical specialist**
- **Zoo curator, nutritionist, keeper**
- **Zoo environment enhancement specialist**
- **Pet safety education specialist for humane society**
- **Lab animal technician**

Graduate School in Animal Sciences

Dr. Todd Applegate, Chair; LILY 2-114; 496-7769

The graduate programs in Animal Sciences are undertaken to prepare for a lifelong career of professional excellence. Graduate study is much more than an extension of the undergraduate program and much more than the completion of more course work. The student is expected to evidence professional growth and maturity. This requires the ability to integrate knowledge from formal courses, research papers, and other experiences. The faculty is devoted to helping the student achieve academic, intellectual, personal, and career goals. Students are encouraged to work closely with the faculty and to participate in academic activities as colleagues of the faculty.

The Graduate Committee:
The departmental Graduate Committee implements graduate program policy in Animal Sciences. This committee is appointed annually by the department head, and members normally serve three-year appointments. The Graduate Committee acts on all admissions applications and recommends appropriate policy changes to the faculty.

The Graduate Secretary:
The Graduate Secretary works with the Graduate Committee, serves as a liaison for the students, and is always available for questions/problems. This person is responsible for corresponding with prospective graduate students, maintaining the graduate student files, assisting graduate students with course registration, keeping in direct contact with the Graduate School and the Office of the Registrar, and stocking appropriate forms and brochures for student information.

The Graduate Student:
Graduate students are expected to work full-time on their research and course work. You should be self-motivated to work hard and achieve graduation within approximately two years for a M.S. and three years (beyond M.S.) for a Ph.D. Students on half-time assistantships are expected to work for the Department on non-thesis-related research or teaching activities approximately 20 hours/week as asked. Such tasks should be viewed as an intrinsic part of your learning process, and as an opportunity to grow professionally.

Academic Performance:
Satisfactory academic performance will be a cumulative grade index of 3.0 or better. Unless you are a non-thesis M.S. student, satisfactory progress should be made in thesis research credit hours (ANSC 69800 or 69900). Two consecutive semesters of unsatisfactory performance in ANSC 69800 (M.S. research) or ANSC 69900 (Ph.D. research) will require petition to the Graduate School to continue in the graduate program.

All cases of unsatisfactory performance will be reviewed after each semester by the student's Advisory Committee and a written recommendation will be sent to the Graduate Committee who will further review each case and submit their written recommendation, along with that of the Advisory Committee, to the department head for final action concerning the continuation of graduate study.

Major professors are expected to monitor progress toward degree objectives and performance. In consultation with the student's Advisory Committee, they have a responsibility to advise the candidate to withdraw from the program if it becomes clear that the candidate is not capable of successfully completing the degree program.

The Major Professor and Advisory Committee

Upon admission to the graduate program, you were assigned a major professor selected with your study/research interests in mind. In consultation with your major professor, you select faculty members to serve on your Advisory Committee. For M.S. students, the Advisory Committee consists of at least three graduate faculty members with at least one member being outside the student's area of specialization. The Advisory Committee for Ph.D. students consists of at least four graduate faculty members with one member chosen from another department. The major professor and Advisory Committee contribute to the student's educational experience by:

- Reviewing previous training, recommending prerequisite courses, assisting in formulation of the student's plan of study.
- Conferring with and advising the student regarding his/her rate of progress toward completion of degree requirements.
- Advising the student in all phases of thesis research, including procedures, analytical concepts and methods, and thesis organization.
- Advising the student on the appropriate time to take preliminary and final examinations. In most cases, the Advisory Committee will also serve as the preliminary (for Ph.D.'s) and final examination committees.

The student-major professor relationship is of vital importance because "The supervisor is often the assistant's employer, counselor, advisor, mentor, examiner, and referee. No other academic situation places such power in the hands of the professor nor requires a more thoughtful assumption of responsibility for the well being of the student. The supervisor needs to be especially aware of the assistant's health and sanity, of the dangers inherent in extended periods of high stress, and of the reasonable claims family, friends, and society have on the time and energy of the assistant."

Career Services and Alumni Relations

Barry Delks, Coordinator; LILY 3-101; 496-7234

In January 2000, the Department of Animal Science made a new commitment to student services by expanding their staff and services available to students. The Career Services Office housed within the Undergraduate Programs Office is committed to assisting undergraduate and graduate students in choosing and attaining rewarding careers.

The career services office provides:

- industry contacts
- individual career planning
- opportunities for summer employment and internships
- career web page
- workshops from industry leaders
- employer information for students
- assistance in matching employer and students needs
- training on career preparation, resume writing, and interviewing
- employer interviews, and job opportunities

Animal Sciences students are finding exciting careers in science, production, agribusiness, biotechnology, animal products and nearly 20% go on to veterinary medicine school.

Frequently Asked Questions and Answers

Can any course in HSSE satisfy the International Understanding requirements?

No; International Understanding courses must be selected from the list of courses shown on page 81.

Can any course in Communications and English satisfy the Written and Oral Communications requirements and the additional written communication requirement?

No; courses that can be utilized for Written and Oral Communications must be selected from the list shown on page 79.

Can any course on the Mathematics and Basic Sciences list be used as a science elective for Biosciences?

No; courses that can be used for science electives (page 103, item number 7) are different than the Mathematics and Basic Sciences (page 76).

Can any course from a university transfer for credit to Purdue?

No; only courses with a grade of "C-" or higher can be transferred from a university that is not affiliated with Purdue. Students planning to take courses and transfer them to Purdue should check the database transfer list on the Admissions website.

Must the exact number of free electives be taken to satisfy graduation requirements?

No; after the required credits are achieved, the number of free electives needed for graduation can be obtained by subtraction from 130.

Is the allowance of substitutions on the plan of study for Animal Sciences students identical for transfer students?

No; it depends upon where the credits originate. If the courses are being transferred from a non-land grant institution, credit can be achieved via Form 390. See Forms section, page 210.

If CHM 11200 can not be used for credit if CHM 11100, 11200 and 11600 are taken, should all pre-vet students be registered for CHM 11500 and 11600?

No; evaluation of grades of Animal Sciences students in CHM 11100, 11200, 11500 and 11600 indicate that students have been appropriately placed in CHM 11100 and 11200 before taking 11600.

If a pre-vet student realizes that entrance into veterinary school is unlikely, are they still required to finish the pre-vet concentration?

No; a student can change majors/concentrations regardless of when they matriculated in college and only needs to meet the requirements for that major/concentration.

Are Animal Sciences students eligible to obtain any minor at Purdue?

No; Animal Sciences majors can not minor in Animal Sciences, but can obtain a minor in 80 areas outside the College of Agriculture (page 107) and 21 areas within the College of Agriculture (pages 129-153).

Can Animal Sciences majors complete a degree in two or more majors/concentrations?

No; Due to similarity in requirements for a degree in an ANSC major/concentration, only one degree from Animal Sciences can be granted.

FORMS

College of Agriculture

Changes of Primary Majors – Within Agriculture

Instructions:

1. *Completed forms with requisite approvals are to be forwarded by the coordinator of the new major to the Office of Academic Programs.*
2. *Student academic records are to be forwarded by the coordinator of the old major to the coordinator of the new major.*

Student Name _____ PUID _____

Student Phone Number _____ Student E-Mail _____

Student Signature _____ Date _____

Approved: _____ Old Major
Coordinator

Approved: _____ New Major
Coordinator

Old Program Code: _____ New Program Code _____

Old Major Code: _____ New Major Code: _____

(If Applicable) *(If Applicable)*
Old Concentration Code: _____ New Concentration Code: _____

New Academic Advisor Name(s): *[As in University Record]*

_____

_____

_____

_____

For Use by Office of Academic Programs

Record Updated _____ Date _____

COA – Form 1 – October 6, 2011

College of Agriculture

Additions or Deletions of Secondary Majors or Minors or Concentrations

Instructions: *Completed forms are to be forwarded to the "Academic Department User" in the department of student's primary major.*

Student Name _____ PUID _____

Student Phone Number _____ Student E-mail _____

Student Signature _____ Date _____

Additions of Secondary Majors:

New Program Code: _____ New Major Code _____

New Advisor: _____ Approved: _____
Coordinator

New Program Code: _____ New Major Code _____

New Advisor: _____ Approved: _____
Coordinator

Deletions of Secondary Majors:

Program Code: _____ Major Code: _____

Program Code: _____ Major Code: _____

Additions of Minors or Concentrations:

Minor/Concentration Code: _____ Title _____

Minor/Concentration Code: _____ Title _____

Minor/Concentration Code: _____ Title _____

Deletions of Minors or Concentrations:

Minor/Concentration Code: _____ Title _____

Minor/Concentration Code: _____ Title _____

Minor/Concentration Code: _____ Title _____

COA – Form 2 - August 18, 2008

PURDUE
UNIVERSITY

OFFICE OF THE DEAN OF STUDENTS
Testing Center

Form 231 - ADVANCED CREDIT/PLACEMENT EXAM AUTHORIZATION FORM

ONLY AN ADVISOR SHOULD COMPLETE THIS FORM. (Please print legibly.)

PUID | Last Name | First | Middle | Class-College

TEST ADMINISTRATORS NEED A COMPLETED FORM.
CANDIDATES CANNOT BE TESTED UNLESS COURSE AND NUMBER ARE SPECIFIED.

- **Electronic devices are not allowed in the testing center.** This includes cell phones, pagers, PDA's, headsets, earplugs, recording devices, translators, etc. Please do not bring these items, as it could jeopardize your test being scored for credit.
- If registered in a course for which the Credit/Placement Exam is being taken, students are responsible for attending class and completing all work in that class until they find out if they have passed. If they pass, students should make sure the course is dropped.
- **Calculator restrictions: Math 111-166** students may only use a one or two line non-graphing, non-programmable calculator. **Math 220-224** students are restricted to any one line display calculator (no exceptions will be made). **Students taking Math 262 & 265 are not allowed a calculator.**
  For **chemistry** exams, any type of calculator may be used.
  Physics students are restricted to a one- or two-line display, non-programmable calculator.

STUDENT STATUS (check one)

_____ Beginning or Transfer (newly admitted, but not currently enrolled and has never attended Purdue University.

_____ All others (including currently enrolled, re-entry and regional campus transfer)

STUDENT SIGNATURE _____/_____
Date

YOU NEED A SEPARATE FORM FOR EACH AUTHORIZED EXAM.

EXAM TO BE TAKEN _____
Subject Course # **(For alternate exams, please add ALT to course #)**

FOREIGN LANGUAGES NOTE: Students with previous college courses in French, German, Russian, Spanish, Latin, or Japanese are not eligible for advanced credit.

*****PLEASE NOTE NEW PROCESS*****

You must now **pre-register** for all advanced credit exams **administered by the ODOS Testing Center** which are limited to
MATH: 111, 137, 138, 139, 152, 153, 154, 159, 165, 166, 220, 221, 222, 223, 224, 261, 262, 265
CHEM: 111, 112, 115, 116 & **BIO** 121.
For **Independent Study Exams**: MGMT 200, EAS 104 & 120 please contact the ODOS Testing Center at 494-1146 for an appointment.

To pre-register please visit: https://www2.itap.purdue.edu/SSTA/ODOS/signup.cfm
YOU WILL NEED TO PRESENT YOUR REGISTRATION NOTICE (EMAILED TO YOU AT THE TIME OF REGISTRATION) AT THE DOOR ALONG WITH THIS FORM AND A PHOTO ID.

All other exams are given by the sponsoring department and do not require preregistration via our website. They may however, be given only on specific dates or require an appointment with the administering department. Please contact the individual department for this information.

DAY ON CAMPUS ADVANCED CREDIT EXAMS ARE EXEMPT FROM PRE-REGISTRATION

This student has not received a grade or directed grade, other than a W in the course listed above.

Academic Advisor Signature | Dept. | Phone # | Date

Rev 5/08cf

Schleman Hall of Student Services, Room B42 ■ 475 Stadium Mall Drive ■ West Lafayette, IN 47907-2050
(765) 494-1146 ■ Fax: (765) 496-6050 ■ URL: www.purdue.edu/odos

LAST NAME _____ FIRST _____ MIDDLE _____ PUID _____ CLASS _____ COLLEGE/SCHOOL _____ CAMPUS _____

CHECK TYPE OF ACADEMIC RECORD CHANGE AND FILL IN CORRESPONDING INFORMATION
(Only one type of change per document)

❑ 1. GRADE CORRECTION
Reason for error in original grade reported:

_____
_____
_____
(Must be approved by Instructor and Department Head)

❑ 2. HONORS COURSE *(Must be approved by Instructor and Director of Honors for College/School in which course is offered)*

❑ 3. COMPLETION/FAILURE TO COMPLETE (I, PI, or SI)
(Must be approved by Instructor)

❑ 4. IMPROVEMENT OF CONDITIONAL FAILURE (E)
(Must be approved by Instructor)

❑ 5. ADJUSTMENT OF GRADUATION INDEX
Reason for Change:

_____
_____
_____

❑ 6. EXEMPTION
(Must be approved by Dean or Head of Student's College/School)

❑ 7. AUTHORIZATION OF GRADUATE CREDIT
The student registered for the course listed below during the period of instruction beginning _____ and completed same at the GRADUATE LEVEL. The course was not used either as a requirement or an elective for the _____ undergraduate degree and should be recorded as available for graduate credit. *(Must be approved by Instructor and Dean, Head of Student's College/School or College/School Candidate Coordinator)*

Completely fill in items that are pertinent to the change indicated above:

CRN	Subject	Course No.	Title	Credit	Old Grade	Term Old Grade Rec'd	If New, Grade	If Adjustment- Exclude (E) Include (I)

Approved Signatures as Specified Above:

Signature of Instructor	Printed or Typed Name	Phone Number	Date
Signature of Department Head	Printed or Typed Name	Phone Number	Date
Signature of Dean or Designee, College/School Head or Academic Advisor, or College/School Candidate Coordinator	Printed or Typed Name	Phone Number	Date

Student ID Number | Last Name | First | Middle | Class | School

PURDUE UNIVERSITY
REPORT OF DIRECTED CREDIT

INSTRUCTIONS: Check the type of credit involved (1, 2, 3, or 4), fill in the corresponding information, identify the student's status, and forward the approved form to the office indicated below. **(Only one type of directed credit per form.)**

Type:	Description:
☐	1. CREDIT BY EXAM-Awarded on the basis of achievement in a Purdue departmental proficiency examination. The student must be a newly admitted or currently enrolled student who has not received a grade or directed grade in the course, other than a grade of W. When reporting for the examination, the student must present to the examining instructor a Credit/Placement Exam Authorization Form 231, Rev 6/94, approved by the academic advisor. NOTE: If the student is currently enrolled in the course and passes the examination, he/she should be advised to cancel that enrollment. (Awarding of credit must be approved by the department head and the examining instructor.)
☐	2. CEEB AP CREDIT-Awarded on the basis of achievement in College Entrance Examination Board Advanced Placement tests taken while in high school. (Must be approved by the director of admissions.)
☐	3. CREDIT ESTABLISHED-**Obsolete.** Formerly awarded on the basis of CEEB Math Achievement Test score or Purdue Composite Score.
☐	4. CLEP CREDIT-Awarded on the basis of achievement in the College Level Examination Program. (Must be approved by the director of admissions.)
☐	5. DEPARTMENTAL CREDIT WITHOUT EXAMINATION-Awarded on the basis of substantially equivalent experience, successful completion of a more advanced course, etc. NOTE: If the student is currently enrolled in the course, he/she should be advised to cancel that enrollment. (Must be approved by the department head.)

ENTER ALL PERTINENT ITEMS:

Credit Awarded* Yes	No	Subject	Course Number	Title	Credit Hours	Approval Signature Examining Instructor
☐	☐					
☐	☐					
☐	☐					
☐	☐					
☐	☐					
☐	☐					

*If credit was NOT awarded, this form need ONLY be submitted if the student is newly admitted and not currently enrolled.

Additional approval signature as specified:

Department Head or Director of Admissions | Date | Campus

STUDENT STATUS (check one)

_____ Beginning or Transfer Student (newly admitted, but not currently enrolled and has never attended Purdue University): FORWARD THIS COMPLETED FORM (for both "Yes" and "No" credit), WITH THE CREDIT/EXAM AUTHORIZATION FORM 231, TO THE OFFICE OF ADMISSIONS. For more information call 494-5938.

_____ All others, including currently enrolled, re-entry, and regional campus transfer students: FORWARD THIS COMPLETED FORM (for "Yes" credit only) TO THE OFFICE OF THE REGISTRAR. For more information, call 494-6155.

Registrar Form 398 (Revised 11/04)

REGISTRAR FORM 705
(Rev. 3/97)

(Name) Last _____ First _____ Middle _____ Student ID Number _____ - _____ - _____

REQUEST FOR UNDERGRADUATE CHANGE OF DEGREE OBJECTIVE (CODO)

1. I am presently enrolled in the School of _____ with a major in _____.
   I wish to change to the School of _____ with a major in _____.
2. Discuss your plans with the dean or head of the school in which you are currently enrolled. If, after discussing your plans, you still want to make a change, have the dean or school head affix his/her signature below.

Signature of Dean, Head or designee	Date	School	Campus
_____	_____	_____	_____

The dean or head (or designee) of the school in which you wish to enroll must examine the attached copy of your record and indicate which courses are to be used to satisfy your degree objective and to compute your graduation index ***when you have completed a semester or session in that school.*** *Courses which should be deleted from the new graduation index include courses completed or currently in progress in another curriculum that are* ***not applicable*** *to the degree which you plan to pursue and courses for which* ***substantially equivalent*** *courses have been substituted. To delete a course from future index computation, cross out the* ***entire course entry*** *on the record, using red ink, e.g.:*

ECON 210 PRIN OF ECONOMICS 3.0 B 9.0
~~MA 233 INTRO ANALYSIS I 3.0 F 0.0~~

Courses already deleted from the graduation index appear on the record with a minus sign ("–") between the subject abbreviation and the course number, e.g.:

PHYS – 221 GEN PHYSICS 4.0 B 12.0

To ***reinstate*** *a course in future index computations for the new curriculum, change the minus sign ("–") to an R sign ("R") using red ink, e.g.:*

PHYS R 221 GEN PHYSICS 4.0 B 12.0

If the CODO is to be made effective as of the beginning of the current academic session, all grades earned in courses in which the student is enrolled as of the end of the session ***will be included in the graduation index. These grades may not be deleted.*** *If the CODO is to be made effective for a* ***future*** *academic session, grades earned in courses in which the student is enrolled may be deleted from the graduation index as of the end of the first session in the new school if they do not apply toward the new program. However, they* ***will*** *be included in current semester and graduation indexes.*

3. This change is to be effective for: ☐ 1st Sem. ☐ 2nd Sem. ☐ SS 19_____ - 19_____
4. Enter the new school, program-of-study code, and classification for the academic session in which this change becomes effective:

☐☐☐	☐	☐☐☐	☐☐☐	☐☐	_____
School	Special	Major	Minor	Advisor	Classification (1-9)

5. I have carefully reviewed the record attached to this form. I approve this request to transfer and authorize the registrar to use all items not lined-out in determining the student's graduation when he/she completes a semester or session in school.

Signature of Dean, Head or designee	Date	School	Campus
_____	_____	_____	_____

_____
Typed Name and Title

6. *I have examined this review of my record and understand which courses can be used to satisfy requirements for my new degree objective and will be used to compute my graduation index when I have completed a session in that school.*

Student Signature _____ ***Date*** _____

ONE COPY OF THIS FORM WITH THE ATTACHED RECORD REVIEW MUST BE RETURNED TO THE OFFICE OF THE REGISTRAR AS SOON AS POSSIBLE. THE OTHER COPY MUST REMAIN WITH YOUR NEW SCHOOL. ANY QUESTIONS, PLEASE CALL 494-6129.

Department of Animal Sciences

Change of Concentration

Name: _____
(Last) (First) (Middle)

PUID: _____

Date: _____

I am requesting to change concentrations within the Department of Animal Sciences.

Student's Signature: _____

Advisor Signature: _____

From:

_____ ANAG - Animal Agribusiness
_____ ANPR - Animal Production
_____ ANPD - Animal Products
_____ ANSC/BEHV - Behavior/ Well-being
_____ ANSC/BISC - Animal Biosciences
_____ ANSC/PRMD - Pre-vet

To:

_____ ANAG - Animal Agribusiness
_____ ANPR - Animal Production
_____ ANPD - Animal Products
_____ ANSC/BEHV - Behavior/ Well-being
_____ ANSC/BISC - Animal Biosciences
_____ ANSC/PRMD - Pre-vet

PLAN FOR INTERNSHIP PROGRAM
APPENDIX A

Student's Name _____

Local Address _____

Local Phone (_____)_____ E-mail Address_____

Home Address _____Home Phone (_____)_____

Academic Advisor _____ ANSC Option _____

Credit Hours Completed _____ Cumulative Grade Point Average _____

Supervising Agency _____

Type of Enterprise _____

Dates and Duration of Internship _____

Objectives to be achieved during internship:

Internship Requirements

- Invest a minimum of 30 hours per credit hour. This includes time for locating an internship, on the job work experience, writing the daily or weekly log, collection and analyzing data, writing the final report, and preparing and presenting the oral presentation. Credit can only be given for work that is above and beyond what the student is getting paid to do on the internship.
- Complete the tasks and activities outlined in the "Plan for Internship."
- Keep the employer's business confidential and work for the employer's best interests.
- Request prior permission from the employer for any leave periods.
- Submit a final written report and conduct an oral presentation (Appendix B) and insure that the supervisor's evaluation (Appendix C) is received by the last day of class for the semester for which the student is registered.

The final grade of Pass/No Pass is calculated by the student's advisory committee using the following criteria:

25% Daily or weekly activity log
50% Final report and oral presentation
25% Employer evaluation

Cooperating Agency Expectations

When the agency selects a participant for the internship program, it is expected to provide a variety of educational experiences for the intern. The agency assigns responsibility for supervision of the intern to a specific individual and a final review of the intern's performance are expected. Further, the agency supervisor completes an evaluation form (Appendix C) appraising the student's performance.

The supervising agency may provide wages, reimbursement for travel, or other remuneration arrangements while the student is on the internship. These arrangements are to be agreed upon by the cooperating agency and the intern.

GUIDELINES FOR THE STUDENT'S
FINAL REPORTS – APPENDIX B

ANSC 390
ANIMAL SCIENCES INTERNSHIP
DEPARTMENT OF ANIMAL SCIENCES
Purdue University
West Lafayette, IN 47907

GUIDELINES FOR THE STUDENT'S FINAL REPORT

An internship experience is much more than a job. It is a valuable portion of your educational program in preparation for a professional career. For us to evaluate your progress and the outcome of your internship program, a written report and an oral presentation is needed from you describing what you have achieved during the internship. The preparation of this report and presentation will also help you evaluate your professional development leading to your career goals. Your report and presentation should be completed prior to the last class day of the semester in which the student returns to campus.

Final Written Report and Oral Presentation must include:

1. A description of the organizational structure and function of the cooperating agency sponsoring your internship. Describe the responsibility of your colleagues and indicate your assignment within the organizational structure.

2. A discussion of how your pre-planned objectives were implemented and the outcome of each.

3. A detailed description of the activities associated with your area of responsibility evaluated in relation to your interests and educational background.

4. An appraisal of the internship program relative to your interests and career goals.

5. Your suggestions and recommendations to other students who might wish to pursue an internship with your cooperating agency.

6. A presentation to ANSC 181, 281 or a related course.

Your supervisor must be given the opportunity to review your written and oral presentation before it is presented to the Department of Animal Sciences. This procedure will help to avoid release of any controversial or restricted information from your employer's point-of-view.

I agree to prepare a detailed, typewritten, final report and conduct an oral presentation explaining my internship activities and a record of activities (daily or weekly log) and to include any suggestions for improvement of the program. I will submit the final report, daily or weekly log, and conduct an oral presentation by the last day of the class for the semester for which I am enrolled in the course.

_____ _____/___/_____
Student's Signature Date

I have reviewed this Plan for Internship and find it consistent with the student's educational objectives.

_____ _____/____/_____
Academic Advisor Date

_____ _____/____/_____
Chair, Animal Sciences Undergraduate Programs Committee Date

The Cooperating agency agrees to provide the student an opportunity to obtain actual experience in the areas outlined above. The student's immediate supervisor will be:

_____ _____
Name Title

The supervisor agrees to evaluate the efforts of the student and forward an evaluation to the academic advisor on termination of the internship.

_____ _____/____/_____
Representative of Date
Cooperating Agency

_____
Street Address

_____
City State Zip Code

(_____)_____
Business Phone Number

(_____)_____
Fax Number

_____
E-mail