

# College of Agriculture

W.D. BATCHELOR, *Dean*  
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THE COLLEGE OF AGRICULTURE prepares students for a variety of opportunities throughout a global food, agricultural and natural resource system by emphasizing living sciences and providing challenging science-based curricula. Graduates are prepared to become productive global citizens and to address the challenges of providing a safe, affordable food, fiber and renewable bio-energy system while protecting environmental and water resources. Many of the basic science courses taken in the freshman and sophomore years serve as a foundation for additional basic and applied coursework in a specific major during the junior and senior year. The college's student-focused atmosphere fosters strong academic, engaged learning environments and student development around life-skills and international issues.

Curricula are offered in agricultural business and economics, agricultural communications, agronomy and soils, animal sciences, environmental science, fisheries and allied aquacultures, food science, horticulture and poultry science. The College of Agriculture also furnishes the subject matter training in agriculture for the curricula of biosystems engineering and agriscience education.

Employment opportunities for graduates with expertise gained in these majors are forecast to remain strong. A survey of recent baccalaureate graduates from the 2010-11 academic year conducted by 15 colleges of agriculture found the average starting salary was higher than previous years. Possible careers include: agricultural economists, agricultural engineers, agronomists, animal nutritionists, aquaculturalists, biochemists, biological engineers, biometricians, botanists, business managers, cell biologists, climatologists, educators, extension specialists, entomologists, environmental scientists, farm services, fisheries scientists, florists, food systems and safety workers, food scientists, golf course managers, poultry scientists, molecular biologists, plant pathologists, plant physiologists, quality assurance workers, rural sociologists, science writers, soil scientists, toxicologists, turf scientist /specialists, as well as the foundation for entrance to graduate school, law, and health-related professional schools.

## Transfer Credits

Transfer credits for agricultural subjects not considered equivalent to those required in the chosen curriculum may be substituted for elective credit; however, duplication of credit will not be allowed. Equivalence of agricultural subjects will be determined by the Dean's Office; however, students may also obtain transfer credit on the basis of validating examinations. Arrangements for validating examinations must be made with the academic dean of Agriculture in the first term of enrollment in the College of Agriculture at Auburn and the examinations must be completed before the middle of the second term. Transfer credit for courses which are upper-division courses at AU will not be accepted from two-year colleges.

## Pre-Veterinary Medicine and Pre-Professional

Curricula within the college enable students to complete requirements for admission to health related professional schools. It is possible to gain admission to colleges of veterinary medicine or other health-related professional schools after a student's third year of undergraduate studies. If students are admitted to a college of veterinary medicine or other professional program after the completion of their third year, they may obtain a bachelor of science degree in their selected degree program after successful completion of their first year in a college of veterinary medicine or other professional degree program. The specific graduation requirements may be obtained from a program advisor or academic advisor for the college. The minimum requirements for admission to most colleges of veterinary medicine and other professional programs are incorporated in the first three years of the options listed under the following curricula: animal sciences, fisheries and allied aquacultures and poultry science. (See also the curriculum in Pre-Veterinary Medicine in the College of Science and Mathematics and School of Forestry and Wildlife Sciences).

## Dual-Degree Program with Engineering

This program gives students the opportunity to receive two baccalaureate degrees - one in agriculture and one in engineering. Although the program was developed primarily for students desiring a combination of a biological sciences program with an engineering program, it does not preclude the consideration of other Agriculture-Engineering combinations.

In general, students will be enrolled in the College of Agriculture for approximately three years and in the Samuel Ginn College of Engineering for approximately two years. During the first three years, the students, should take those mathematics, physics and chemistry courses necessary to allow them to transfer to the Samuel Ginn College of Engineering. Additionally, before transferring to the Samuel Ginn College of Engineering, they should have completed approximately three-fourths of the total hours required by the College of Agriculture for the awarding of the degree.

To become dual-degree candidates under this program, students must have GPAs which indicate the likelihood of satisfactory completion of Samuel Ginn College of Engineering degree requirements and recommendation from the dean of the College of Agriculture. The recommendation should be sought one term before the expected transfer to the Samuel Ginn College of Engineering.

It is also possible for qualified students to transfer to the Samuel Ginn College of Engineering following the junior year with the intent of seeking a master's degree rather than a bachelor's degree in one of the engineering disciplines. Consult the Engineering Dean's Office concerning this option.

## Minors

### Agribusiness Minor

18 semester hours in minor (minimum 9 hours at 3000-level or above)

| <b>Courses required</b>                                     |                                       | <b>Cr. Hr.</b> |
|---|---------------------------------------|----------------|
| ACCT 2810   | Fundamentals of Accounting .....      | 3              |
| AGEC 4040   | Agricultural Finance .....            | 3              |
| AGEC 4000   | Principles of Agribusiness Mngt ..... | OR             |
| AGEC 5010   | Farm Management .....                 | OR             |
| AGEC 5100   | Agribusiness Management .....         | 3              |
| Elective Courses - See advisor for approved course listing. |                                       |                |

### Agronomy and Soils Minor

17 semester hours in minor (minimum 9 hours at 3000-level or above)

| <b>Courses required</b>                                     |                          | <b>Cr. Hr.</b> |
|---|--------------------------|----------------|
| AGRN 1000   | Basic Crop Science ..... | 4              |
| AGRN 2040   | Basic Soil Science ..... | 4              |
| Elective Courses - See advisor for approved course listing. |                          |                |

### Animal Sciences Minor

15 semester hours in minor (minimum 9 hours at 3000-level or above)

| <b>Courses required</b>                                     |                                      | <b>Cr. Hr.</b> |
|---|--------------------------------------|----------------|
| ANSC 1000   | Introduction to Animal Sciences..... | 4              |
| Elective Courses - See advisor for approved course listing. |                                      |                |

### Entomology Minor

15 semester hours in minor (minimum 9 hours at 3000-level or above)

| <b>Courses required</b>                                     |                          | <b>Cr. Hr.</b> |
|---|--------------------------|----------------|
| ENTM 3040   | General Entomology ..... | 4              |
| Elective Courses - See advisor for approved course listing. |                          |                |

### Fisheries and Allied Aquacultures Minor

Junior (03) classification is required

15 semester hours in minor (minimum 12 hours at 4000-level or above)

| <b>Select from the following courses</b> |  | <b>Cr. Hr.</b> |
|--|--|----------------|
| FISH 3950                                | Seminar (Jr. Standing) .....           | 1              |
| FISH 5210                                | Principles of Aquaculture .....        | 3              |
| FISH 5220                                | Water Science .....                    | 3              |
| FISH 5240                                | Hatchery Management .....              | 4              |
| FISH 5250                                | Aquaculture Production .....           | 4              |
| FISH 5320                                | Limnology .....                        | 4              |
| FISH 5440                                | Fish Anatomy and Physiology.....       | 4              |
| FISH 5630                                | Facilities for Aquaculture.....        | 3              |
| FISH 5380                                | Ichthyology .....                      | 4              |
| FISH 5410                                | Introduction to Fish Health .....      | 3              |
| FISH 5510                                | Fisheries Biology and Management ..... | 4              |
| FISH 5520                                | Management of Small Impoundments ..... | 3              |
| FISH 5670                                | Fisheries Extension .....              | 2              |
| FISH 5970                                | Aquatic Microbiology.....              | 3              |

**Agricultural Leadership Studies Minor**

18 semester hours in minor (minimum 9 hours at 3000-level or above)

|   |   |                |
|---|---|----------------|
| <b>Courses required</b>                                     |   | <b>Cr. Hr.</b> |
| AGRI 3800   | Agricultural Leadership Development .....     | 2              |
| AGRI 5840   | Adv. Agricultural Leadership Development..... | 3              |
| ANSC 4800   | Issues in Agriculture .....                   | 2              |
| POLI 2100   | State and Local Government .....              | 3              |
| Elective Courses - See advisor for approved course listing. |   |                |

**Natural Resources Economics and Environmental Policy Minor**

15 semester hours in minor (minimum 12 hours at 3000-level or above)

Group A (Select 9 hours):

|                         |                               |                |
|-------------------------|-------------------------------|----------------|
| <b>Courses required</b> |                               | <b>Cr. Hr.</b> |
| AGEC 5090               | Resource Economics I .....    | 3              |
| ECON 5200               | Urban and Reg Econ Dev.....   | 3              |
| RSOC 5650               | Soc Nat Res & Envir.....      | 3              |
| GEOG 5830               | Geog Information Systems..... | 4              |

Group B (Select 6 hours):

|                         |                            |                |
|-------------------------|----------------------------|----------------|
| <b>Courses required</b> |                            | <b>Cr. Hr.</b> |
| AGEC 4300               | Ag Policy & Trade .....    | 3              |
| AGEC 4120               | Envir & Nat Res Econ ..... | 3              |
| FORY 3440               | Environmental Law .....    | 3              |
| FORY 5310               | Intro to Envir Ethics..... | 3              |

**Plant Pathology Minor**

15 semester hours in minor

|   |                               |                |
|---|-------------------------------|----------------|
| <b>Courses required</b>                                     |                               | <b>Cr. Hr.</b> |
| PLPA 3000   | General Plant Pathology ..... | 4              |
| Elective Courses - See advisor for approved course listing. |                               |                |

**Poultry Science Minor**

15 semester hours in minor (minimum 12 hours at 3000-level or above)

|   |                                     |                |
|---|-------------------------------------|----------------|
| <b>Courses required</b>                                     |                                     | <b>Cr. Hr.</b> |
| POUL 1000   | Introductory Poultry Science .....  | 3              |
| POUL 3030   | Commercial Poultry Production ..... | 4              |
| Elective Courses - See advisor for approved course listing. |                                     |                |

**Rural and Community Development Minor**

15 semester hours in minor (minimum 9 hours at 3000-level or above)

|   |                                  |                |
|---|----------------------------------|----------------|
| <b>Courses required</b>                                     |                                  | <b>Cr. Hr.</b> |
| RSOC 3620   | Community Organization .....     | 3              |
| SOCY 3700   | Methods of Social Research ..... | 3              |
| Elective Courses - See advisor for approved course listing. |                                  |                |

**Agricultural Business and Economics (AGEC)**

The curriculum provides broad technical training and a strong liberal arts and business background to prepare students for careers in a wide array of agribusiness and related fields.

Students are encouraged to use professional electives to complete a minor from the College of Agriculture, the College of Business the College of Sciences and Mathematics or the School of Forestry and Wildlife Sciences or in Economics in the College of Liberal Arts. Otherwise, students may follow a general program by selecting from courses at the 3000-level or higher in the College of Agriculture, the College of Business, College of Mathematics and Sciences or the School of Forestry and Wildlife, as well as offerings at the 3000 level or better in Economics, Sociology, Anthropology, Geography, Political Science, or Statistics. Basic Soil Science (AGRN 2040) may also be counted as a professional elective, as may up to 8 hours of a foreign language, regardless of the level. Students are encouraged to see their advisors to plan their professional electives around an interest area that best meets their career aspirations.

**Curriculum in Agricultural Business & Economics**

| FR        | F    | S    |   | F         | S         |
|-----------|------|------|---|-----------|-----------|
| ENGL      | 1100 | 1120 | English Composition I & II .....                    | 3         | 3         |
| HIST      | 1210 | 1220 | Technology & Civilization I & II <sup>a</sup> ..... | 3         | 3         |
| MATH      | 1680 | 1690 | Calculus w/Business Applications I & II.....        | 4         | 3         |
| SOCY      | 1000 |      | Sociology: Global Perspective.....                  | 3         | **        |
| COMP      |      | 1000 | Personal Computer Applications.....                 | **        | 2         |
| ECON      |      | 2020 | Principles of Microeconomics.....                   | **        | 3         |
|           |      |      | Fine Arts Core <sup>g</sup> .....                   | 3         | **        |
|           |      |      |   | <b>16</b> | <b>14</b> |
| <b>SO</b> |      |      |   |           |           |
| ENGL      | 2200 |      | World Literature I <sup>c</sup> .....               | 3         | **        |
| ECON      | 2030 |      | Principles of Macroeconomics .....                  | 3         | **        |
| PHIL      | 1040 |      | Business Ethics <sup>d</sup> .....                  | 3         | **        |
| ACCT      | 2110 | 2210 | Financial & Managerial Accounting.....              | 3         | 3         |
| BIOL      | 1020 |      | Principles of Biology & Lab (1021).....             | 4         | **        |
| BIOL      |      | 1030 | Organismal Biology & Lab (1031).....                | **        | 4         |
| STAT      |      | 2610 | Statistics for Bus & Economicse OR .....            | **        | 3         |

|      |      |   |           |           |
|------|------|---|-----------|-----------|
| STAT | 2510 | Statistics for Biology & Health Sci .....         | **        | **        |
| STAT | 2010 | Statistics for Social and Behavior Sciences ..... | **        | **        |
| COMM | 1000 | Public Speaking .....                             | **        | 3         |
|      |      | Free Elective .....                               | **        | 2         |
|      |      |   | <b>16</b> | <b>15</b> |

|           |      |  |           |           |
|-----------|------|--|-----------|-----------|
| <b>JR</b> |      |  |           |           |
| ECON      | 3020 | Intermediate Microeconomics .....          | 3         | **        |
| ENGL      | 3080 | Business Writing.....                      | 3         | **        |
| AGEC      | 3100 | Computer Applications to Ag Economics..... | 3         | **        |
| AGEC      | 4040 | Agribusiness Finance.....                  | 3         | **        |
| AGEC      | 3010 | Agricultural Marketing .....               | **        | 3         |
| AGEC      | 4950 | Undergraduate Seminar.....                 | **        | 0         |
|           |      | Agricultural Elective <sup>f</sup> .....   | 4         | 4         |
|           |      | Professional Elective <sup>g</sup> .....   | **        | 4         |
|           |      | Free Elective .....                        | **        | 4         |
|           |      |  | <b>16</b> | <b>15</b> |

|           |      |  |           |           |
|-----------|------|--|-----------|-----------|
| <b>SR</b> |      |  |           |           |
| AGEC      | 4070 | Agricultural Law .....                   | 3         | **        |
| AGEC      | 5100 | Agribusiness Management.....             | 3         | **        |
| AGEC      | 5090 | Resource Economics I.....                | 3         | **        |
|           |      | Professional Elective <sup>g</sup> ..... | 5         | 5         |
| AGEC      | 5030 | Agricultural Prices .....                | **        | 3         |
| AGEC      | 4300 | Agricultural Trade & Policy .....        | **        | 3         |
| AGEC      | 5010 | Farm Management.....                     | **        | 3         |
| UNIV      | 4AA0 | AG1 Undergraduate Graduation .....       | **        | 0         |
|           |      |  | <b>14</b> | <b>14</b> |

**TOTAL HOURS - 120**

- <sup>a</sup> HIST 1010 & 1020 (World History I & II) may be substituted.
- <sup>b</sup> Select one from: ARCH 2600; ARTS 1710, 1720 or 1730; MUSI 2730/2737; RTV 2350 or THEA 2010.
- <sup>c</sup> Possible substitutes include ENGL 2210, 2230, 2240, 2250 or 2260
- <sup>d</sup> PHIL 1020 Introduction to Ethics may be substituted.
- <sup>e</sup> Possible substitutes include STAT 2010 Statistics for Social and Behavioral Sciences and STAT 2510 Statistics for Biological and Health Sciences may be substituted.
- <sup>f</sup> Select one Agriculture Elective from Group I and one from Group II below:  
**(Group I - Animal Sciences):** ANSC 1000 or POUL 1000 and  
**(Group I - Plant Sciences):** AGRN 1000, HORT 2010, HORT 2020 or HORT 2030.
- <sup>g</sup> Select from any course at the 3000-level or higher in the College of Agriculture, the College of Business, College of Mathematics and Sciences or the School of Forestry and Wildlife, as well as offerings at the 3000 level or better in Sociology, Anthropology, Geography, Political Science, or Statistics (except AGECE 4000 Principles of Agribusiness Management). Basic Soil Science (AGRN 2040) may also be counted as a professional elective, as may up to 8 hours of a foreign language, regardless of the level. Any course that is used to complete a minor may also be counted as a professional elective. Students are encouraged to see their advisors to plan their professional electives around an interest area that best meets their career aspirations.

**Agricultural Communications (AGCO)**

The Agricultural Communications program is designed to produce graduates who possess exceptional communication skills meshed with a strong science-based background in agriculture and natural resources. This degree enables graduates to communicate vital information related to science, agriculture, natural resources, food and the environment to diverse audiences. Agricultural Communications graduates are prepared to work in the public and private sectors—from corporations to government agencies to nonprofits—pursuing a variety of careers including: writers, photographers, graphic designers, Web developers and managers, videographers, electronic/digital media producers, marketing specialists, public relations practitioners, publishers, researchers, distance education specialists, overseas development workers, extension educators and managers and editors of magazines and other printed or online news venues. Graduates work throughout corporate America, institutions of higher learning, government agencies, medical technology operations, lobbyist and advocacy groups, non-profits and research organizations in the public and private sector. This combination of technical subject matter knowledge and communication skills is not found in other curricula. The program also prepares students for graduate and professional schools, including law school.

Goals are to develop proficient communicators who 1) promote a broader understanding of agriculture, natural resources, the environment and science among a diverse and global citizenry; 2) recognize and exercise with integrity, their potential as catalysts for using information technologies and knowledge to improve the quality of life for others; 3) possess a thorough understanding of the important social, scientific, economic and environmental concepts and issues that relate to agriculture and natural resources; and 4) apply critical thinking skills to understand and explain complex agricultural and environmental issues and their implication on local, national and international levels. Opportunities for portfolio development within the degree program are extensive through internship and practicum classes.

College of Agriculture

Curriculum in Agricultural Communications

| FR            | F           | S           | F  | S               |
|---------------|-------------|-------------|--|-----------------|
| BIOL          | 1020        |             | Principles of Biology & Lab (1021)           | 4               |
| BIOL          |             | 1030        | Organismal Biology & Lab (1031)              | ** 4            |
| ENGL          | 1100        | 1120        | English Composition I & II                   | 3 3             |
| MATH          | 1130        |             | Pre-Calculus with Trigonometry               | 3               |
| COMM          | 1000        |             | Public Speaking                              | ** 3            |
| <b>AGRI</b>   |             | <b>1080</b> | <b>Intro Ag Comm &amp; Leadership</b>        | <b>** 3</b>     |
|               |             |             | Core History 1 & 2                           | 3 3             |
|               |             |             | Core Social Science <sup>1</sup>             | ** 3            |
|               |             |             |  | <b>16 16</b>    |
| <b>SO</b>     |             |             |  |                 |
| CHEM          | 1010        |             | Survey of Chemistry                          | 3               |
| CHEM          | 1011        |             | Survey of Chemistry Lab                      | 1               |
|               |             |             | Core Humanities (Fine Arts)                  | 3               |
| <b>JRNL</b>   | <b>1100</b> |             | <b>Newspaper Fundamental</b>                 | <b>3</b>        |
| ENGL          |             |             | Core Humanities (ENGL Literature)            | 3               |
| <b>COMM</b>   |             | <b>3500</b> | <b>Fdn of Human Communication</b>            | <b>** 3</b>     |
|               |             |             | Communications Elective (JRNL) <sup>2</sup>  | ** 3            |
|               |             |             | Ag Group I <sup>3</sup>                      | ** 3-4          |
| <b>CMJN</b>   | <b>2100</b> |             | <b>Conc in Comm &amp; Jrn</b>                | <b>3</b>        |
| COMP          | 1000        |             | Computer Applications                        | ** 2            |
|               |             |             | Core Humanities (PHIL)                       | ** 3            |
|               |             |             |  | <b>16 14-15</b> |
| <b>JR</b>     |             |             |  |                 |
| <b>COMM</b>   | <b>3600</b> |             | <b>Fdn Rhetoric&amp;Soc Infl</b>             | <b>3</b>        |
| RTVF          |             | <b>3300</b> | <b>Fdn of Mass Communications</b>            | <b>** 3</b>     |
|               |             |             | <b>AG Support Courses</b> <sup>4</sup>       | <b>3</b>        |
|               |             |             | Communications Elective (RTVF) <sup>2</sup>  | ** 3            |
|               |             |             | Ag Group I <sup>3</sup>                      | ** 4            |
| ECON          | 2020        |             | Princ. Microeconomics                        | 3               |
|               |             |             | Communications Elective (JRNL) <sup>2</sup>  | ** 3            |
| AGRN          |             | 2040        | Basic Soil Science                           | ** 4            |
|               |             |             | Ag Group III <sup>3</sup>                    | ** 3-4          |
|               |             |             | Free Elective                                | ** 1-3          |
|               |             |             |  | <b>16 14-15</b> |
| <b>SUMMER</b> |             |             |  |                 |
| <b>AGRI</b>   |             | <b>4920</b> | <b>Internship</b>                            | <b>3</b>        |
| <b>SR</b>     |             |             |  |                 |
| <b>PRCM</b>   | <b>3040</b> |             | <b>Found of Public Relations</b>             | <b>3</b>        |
|               |             |             | Communications Support Courses <sup>5</sup>  | 6 6             |
| <b>AGEC</b>   | <b>4070</b> |             | <b>Agricultural Law</b>                      | <b>3</b>        |
| <b>AGEC</b>   | <b>3010</b> |             | <b>Agricultural Marketing or</b>             | <b>**</b>       |
| <b>AGEC</b>   | <b>4000</b> |             | <b>Principles of Agribusiness Management</b> | <b>3</b>        |
|               |             |             | <b>Ag Support Courses</b> <sup>4</sup>       | <b>** 3</b>     |
|               |             |             | Communication Elective (PRCM) <sup>2</sup>   | ** 3            |
| UNIV          |             | 4AA0        | AG1 Undergraduate Graduation                 | ** 0            |
|               |             |             |  | <b>15 12</b>    |

TOTAL HOURS - 123

- Students will choose from the following: ANTH 1000, GEOG 1010/1017, PSYC 2010, SOCY 1000/1007, UNIV 2710/2717 or UNIV 2720/2727.
- Communications Electives: Must be selected from 2000 or higher level courses in the following areas: JRNL (2 Courses), PRCM (1 Course) and RTVF (1 Course).
- Agriculture Electives: Choose one from each group: Group I - Animal Sciences: ANSC 1000 or POUL 1000 (Fall only) or FISH 2100 (2nd Summer session only) Group II - Plant Sciences: AGRN 1000 or HORT 2010 ( Fall only) or HORT 2020 ( Fall only) Group III - Insects and Diseases: ENTM 2040 or ENTM 3040 or PLPA 3000
- Agriculture Support Courses: Must select 6 hours preferably from 3000 or higher level courses in the following areas: AGRI, AGECE, AGRN, ANSC, ENVI, FDSC, FISH, HORT, or POUL
- Communication Support Courses: Must select 12 hours with at least 6 hours being at the 3000 or higher level from the following areas: COMM, JRNL, PRCM, or RTVF

Agronomy and Soils (AGRN)

Courses prepare Agronomy graduates for: (1) turfgrass industry, (2) agri-life industry, producers of fertilizers, herbicides and other agricultural products; (3) farm-advisory agencies such as soil-testing laboratories and other private consultants; (4) public farm-advisory agencies such as the Agricultural Extension System or the Natural Resources Conservation Service; (5) research agencies or corporations, U.S. Department of Agriculture, colleges and universities and Agricultural Experiment Stations; (6) farming and (7) environmental agencies

Curriculum in Agronomy & Soils - Production Track

| FR          | F           | S    | F                                  | S            |
|-------------|-------------|------|------------------------------------|--------------|
| BIOL        | 1020        |      | Principles of Biology & Lab (1021) | 4            |
| BIOL        |             | 1030 | Organismal Biology & Lab (1031)    | ** 4         |
| CHEM        | 1030        | 1040 | Fundamentals Chemistry I & II      | 3 3          |
| CHEM        | 1031        | 1041 | Fundamentals Chemistry I & II Lab  | 1 1          |
| ENGL        |             | 1100 | English Composition I              | ** 3         |
| MATH        | 1130        | 1610 | Math                               | 3 4          |
| <b>AGRN</b> | <b>1000</b> |      | <b>Basic Crop Sci</b> <sup>1</sup> | <b>4</b>     |
|             |             |      | Free elective <sup>2</sup>         | ** 1         |
|             |             |      |                                    | <b>16 15</b> |

| SO        | F    | S    | F                                       | S            |
|-----------|------|------|---|--------------|
| ENGL      | 1120 |      | English Composition II                  | 3            |
|           |      |      | Core History I & II                     | 3 3          |
|           |      |      | Core Humanities (English Lit)           | ** 3         |
|           |      |      | Core Social Science                     | ** 3         |
|           |      |      | Core Humanities (Fine Arts)             | ** 3         |
|           |      |      | Fundamentals of Accounting Princ        | 3            |
|           |      |      | Statistics for Biological Sciences      | ** 3         |
|           |      |      | Organic Chemistry                       | ** 3         |
|           |      |      | <b>Basic Soil Science</b>               | <b>4</b>     |
|           |      |      |   | <b>16 15</b> |
| <b>JR</b> |      |      |   |              |
| ECON      | 2020 |      | Microeconomics                          | 3            |
|           |      |      | Approved Humanities choice <sup>4</sup> | ** 3         |
|           |      |      | <b>Nutrient Management</b>              | <b>** 3</b>  |
|           |      |      | Plant Biology                           | 3            |
|           |      |      | Plant Biology Lab                       | 1            |
|           |      |      | General Plant Pathology                 | ** 4         |
|           |      |      | <b>Weed Science</b>                     | <b>4</b>     |
|           |      |      | <b>Advanced Crop Production</b>         | <b>** 3</b>  |
|           |      |      | <b>Soil Morphology</b>                  | <b>** 4</b>  |
|           |      |      | Elective                                | ** 1         |
|           |      |      |   | <b>14 15</b> |
| <b>SR</b> |      |      |   |              |
| AGEC      | 4000 |      | Core Humanities                         | ** 3         |
| AGRN      |      | 3150 | Principles of Agribusiness Mgmt         | ** 3         |
| AGRN      |      | 5000 | Turfgrass Management                    | ** 4         |
| AGRN      |      | 5080 | <b>Soils &amp; Environment Quality</b>  | <b>3</b>     |
| AGRN      |      | 5100 | <b>Soil Resources &amp; Conser</b>      | <b>4</b>     |
|           |      |      | <b>Plant Genetics and Crop Imp</b>      | <b>3</b>     |
|           |      |      | <b>Princ of Forage Production</b>       | <b>** 3</b>  |
|           |      |      | <b>Senior Seminar</b>                   | <b>** 1</b>  |
|           |      |      | Economic Entomology                     | ** 4         |
|           |      |      | Elective                                | ** 1         |
| UNIV      |      | 4AA0 | AG1 Undergraduate Graduation            | ** 0         |
|           |      |      |   | <b>14 15</b> |

TOTAL HOURS - 120

- Courses in boldface type are major courses and require a minimum 2.0 GPA for graduation.
- Six credits of advanced ROTC can be substituted for free electives and 3 credits of required courses not in the required Core or Major (boldface courses).
- Students must select a Core Humanities course that satisfies SLO 3. See the 2012-2013 Bulletin or an advisor for a list of approved choices.

Curriculum in Agronomy & Soils - Business Track

| FR          | F           | S    | F                                       | S            |
|-------------|-------------|------|---|--------------|
| BIOL        | 1020        |      | Principles of Biology & Lab (1021)      | 4            |
| BIOL        |             | 1030 | Organismal Biology & Lab (1031)         | ** 4         |
| CHEM        | 1030        | 1040 | Fundamentals Chemistry I & II           | 3 3          |
| CHEM        | 1031        | 1041 | Fundamentals Chemistry I & II Lab       | 1 1          |
| ENGL        |             | 1100 | English Composition I                   | ** 3         |
| MATH        | 1130        | 1610 | Math                                    | 3 4          |
| <b>AGRN</b> | <b>1000</b> |      | <b>Basic Crop Sci</b> <sup>1</sup>      | <b>4</b>     |
|             |             |      | Free elective <sup>2</sup>              | ** 1         |
|             |             |      |   | <b>16 15</b> |
| <b>SO</b>   |             |      |   |              |
| ECON        |             | 2020 | Microeconomics                          | ** 3         |
|             |             |      | Core History I & II                     | 3 3          |
|             |             |      | Core Humanities (English Lit)           | ** 3         |
|             |             |      | Core Social Science                     | ** 3         |
|             |             |      | English Composition II                  | 3            |
|             |             |      | Fundamentals of Accounting Principles   | 3            |
|             |             |      | Statistics for Biological Sciences      | ** 3         |
|             |             |      | Organic Chemistry                       | ** 3         |
|             |             |      | <b>Basic Soil Science</b>               | <b>** 4</b>  |
|             |             |      |   | <b>15 16</b> |
| <b>JR</b>   |             |      |   |              |
| BIOL        | 3100        |      | Plant Biology                           | 3            |
| BIOL        | 3101        |      | Plant Biology Lab                       | 1            |
|             |             |      | Approved Humanities choice <sup>4</sup> | ** 3         |
|             |             |      | General Plant Pathology                 | ** 4         |
|             |             |      | <b>Forage Prod and Mgmt OR</b>          | <b>** 3</b>  |
|             |             |      | <b>Turfgrass Mgmt</b>                   | <b>** 4</b>  |
|             |             |      | <b>Soil Morphology</b>                  | <b>** 4</b>  |
|             |             |      | <b>Weed Science</b>                     | <b>** 4</b>  |
|             |             |      | <b>Principles of Management</b>         | <b>3</b>     |
|             |             |      | Free elective <sup>5</sup>              | ** 1 or 2    |
|             |             |      |   | <b>14 13</b> |
| <b>SR</b>   |             |      |   |              |
|             |             |      | Core Humanities (Fine Arts)             | **           |
|             |             |      | Core Humanities                         | ** 3         |
|             |             |      | Plant Genetics and Crop Imp             | ** 3         |
|             |             |      | 4070 Ag Law or 4040 Ag. Finance         | ** 3         |
|             |             |      | Economic Entomology                     | ** 4         |
|             |             |      | <b>Advanced Crop Production</b>         | <b>** 3</b>  |
|             |             |      | <b>Soils &amp; Environ Quality</b>      | <b>** 3</b>  |
|             |             |      | <b>Nutrient Management</b>              | <b>** 3</b>  |





**Biosystems Engineering (BSEN)**

The Biosystems Engineering Department offers the only accredited degree in biosystems engineering in Alabama. It is committed to preparing students for productive professional careers in the biosystems industries and related natural resource and environmental systems sectors. Specific educational objectives of the biosystems engineering degree program are: (1) Graduates solve engineering problems such as those associated with the environment and natural resources, and the production, processing, storage, manufacture, utilization, and recycling of biological products; (2) Graduates develop solutions to problems that combine engineering and biological sciences; (3) Graduates develop environmentally and economically feasible and practical design solutions; and (4) Graduates expand the role of engineering in society; communicate effectively, practice in a professional and ethical manner; and provide leadership in the profession.

The curriculum is coordinated by the Samuel Ginn College of Engineering. Students should apply for admission to the Samuel Ginn College of Engineering and complete the pre-biosystems engineering program. A forest engineering option and an ecological engineering option are also available under the biosystems engineering degree program.

See the Samuel Ginn College of Engineering section for curriculum model, admission and degree requirements.

**Environmental Science**

The Environmental Science program, like the rather broad field of environmental science, is by its very nature highly interdisciplinary. Although the College of Agriculture administers the program through the Department of Agronomy and Soils, the Samuel Ginn College of Engineering and the College of Sciences and Mathematics are partners in developing the curriculum, guiding student development and providing instruction.

Environmental quality issues are often complex and significant expertise in physics, chemistry, biology, soil science and geology is needed to understand specific problems. Moreover, formulating solutions often requires mathematical expertise as well as specific knowledge of the air, water, and soil environments. Thus, the program is structured to educate environmental scientists broadly, but with considerable depth.

The program is specifically tailored to produce graduates who can enter and have a reasonable expectation of success in a field that is continually changing. The principal educational goals are to provide each student with a broad-based general education, a solid background in mathematics, physical science, and biological science, breadth of exposure to the environmental science field, and depth of knowledge in a specific area of environmental science of choice.

The curriculum is organized around a core set of courses that are required of all students. Students desiring to specialize may select from groups of courses, called professional tracks, that emphasize environmental applications of biological science, physical science, soil science, or engineering science. A general environmental science track is also available.

**Curriculum in Environmental Science**

| FR   | F    | S    |  | F  | S  |
|------|------|------|--|----|----|
| BIOL |      | 1020 | Principles of Biology .....                          | ** | 4  |
| CHEM | 1030 | 1040 | Fund. of Chemistry I & II and Labs (1501, 1511)..... | 3  | 3  |
| CHEM | 1031 | 1041 | Fundamentals of Chemistry I & II Lab .....           | 1  | 1  |
| ENGL | 1100 | 1120 | English Composition I & II .....                     | 3  | 3  |
| MATH | 1610 |      | Calculus I.....                                      | 4  | ** |
|      |      |      | Core History 1 & 2 .....                             | 3  | 3  |
| COMP | 1000 |      | Pers. Comp. Appl. ....                               | 2  | ** |
| ENVI | 1010 |      | <b>Intro to Environmental Science .....</b>          | 0  | ** |
| ENVI |      | 1020 | <b>Fund of Environmental Science.....</b>            | ** | 2  |
|      |      |      |  | 16 | 16 |
| SO   |      |      |  |    |    |
| BIOL | 1030 |      | Organismal Biology .....                             | 4  | ** |
| PHYS | 1500 | 1510 | General Physics I & II .....                         | 4  | 4  |
| ENGL |      |      | Core Literature .....                                | 3  | ** |
|      |      |      | Core Humanities.....                                 | ** | 3  |
| GEOL | 1100 |      | Physical Geology.....                                | 4  | ** |
| CHEM |      | 2030 | Survey of Organic Chemistry .....                    | ** | 3  |
| STAT |      | 2510 | Introduction to Statistics .....                     | ** | 3  |
| ENVI | 2010 |      | <b>Environ Science Seminar .....</b>                 | 1  | ** |
| GEOL |      | 2100 | <b>Environmental Geology .....</b>                   | ** | 4  |
|      |      |      |  | 16 | 17 |

|      |      |      |  |    |    |
|------|------|------|--|----|----|
| JR   |      |      |  |    |    |
| CHEM | 3050 |      | Analytical Chemistry.....                | ** | 3  |
| CHEM | 3051 |      | Analytical Chemistry Lab.....            | ** | 1  |
| FORY | 4470 |      | GIS Applications.....                    | 2  | ** |
| AGRN | 3040 |      | <b>Basic Soils .....</b>                 | 4  | ** |
| BIOL |      | 3060 | <b>Ecology .....</b>                     | ** | 4  |
| BIOL | 3200 |      | <b>General Microbiology.....</b>         | 4  | ** |
| CIVL |      | 3220 | <b>Water &amp; Waste Treatment .....</b> | ** | 4  |
|      |      |      | <b>Professional Track .....</b>          | 6  | ** |
|      |      |      | <b>Professional Track .....</b>          | ** | 4  |
|      |      |      |  | 16 | 16 |
| SR   |      |      |  |    |    |
|      |      |      | Core Humanities (Fine Arts) .....        | ** | 3  |
| PHIL | 1020 |      | Intro. to Ethics .....                   | 3  | ** |
| ECON | 2020 |      | Princ. Of Microecon.....                 | 3  | ** |
|      |      |      | Core Social Science*.....                | ** | 3  |
| FORY | 3440 |      | <b>Environmental Law .....</b>           | 3  | ** |
|      |      |      | <b>Professional Track .....</b>          | 7  | 7  |
|      |      |      | Elective.....                            | ** | 2  |
| UNIV | 4AA0 |      | EN1 Undergraduate Graduation.....        | ** | 0  |
|      |      |      |  | 16 | 15 |

**TOTAL HOURS - 128**

Professional Track - see adviser for approved course listing.

\* Student will choose from the following: ANTH 1000, GEOG 1010/1017, PSYC 2010, SOCY 1000/1007, or UNIV 2070/2727.

**Fisheries and Allied Aquacultures (FISH)**

Fisheries science combines a general foundation in chemistry, mathematics and biological sciences with applied courses in the principles needed to manage fresh and saltwater aquatic resources. The degree is intended to equip students with a broad understanding of fundamental scientific principles needed to develop solutions for the increasing pressures on our aquatic resources and the need to provide safe, reliable food through aquaculture production. Through a sequence of courses, students specialize in emphasis areas of aquatic ecology, fisheries management or aquaculture. The FISH Pre-Vet/Pre-Professional area of emphasis provides students with a broad base of scientific knowledge necessary for success in the College of Veterinary Medicine, other professional schools, or graduate school. Careers for graduates include work in environmental management, fisheries resource management, extension, and commercial aquaculture production, processing, and marketing.

**Curriculum in Fisheries and Allied Aquacultures**

(Aquaculture, Aquatic Resources Management and Fisheries Management Areas of Emphasis)

| FR     | F    | S    |   | F  | S  |
|--------|------|------|---|----|----|
| ENGL   | 1100 | 1120 | English Composition I & II.....                     | 3  | 3  |
|        |      |      | Core History 1 and 2+ .....                         | 3  | 3  |
| MATH   | 1610 |      | Calculus I.....                                     | 4  | ** |
| PHYS   |      | 1000 | Foundations of Physics & Lab (1001) .....           | ** | 4  |
| BIOL   | 1020 |      | <b>Principles of Biology &amp; Lab (1021) .....</b> | 4  | ** |
| BIOL   |      | 1030 | <b>Org Biology &amp; Lab (1031) .....</b>           | ** | 4  |
| FISH   | 1100 |      | Fish Orientation .....                              | 1  | ** |
|        |      |      | Free Elective .....                                 | ** | 2  |
|        |      |      |   | 15 | 16 |
| SO     |      |      |   |    |    |
| CHEM   | 1030 | 1040 | Fundamentals of Chemistry I & II.....               | 3  | 3  |
| CHEM   | 1031 | 1041 | Fund of Chemistry Lab I & II.....                   | 1  | 1  |
| ECON   |      | 2020 | Principles of Microeconomics.....                   | ** | 3  |
|        |      |      | Fine Arts Core .....                                | ** | 3  |
|        |      |      | Core Literature .....                               | 3  | ** |
|        |      |      | Humanities Core (PHIL) .....                        | 3  | ** |
| COMM   | 1000 |      | Public Speaking.....                                | 3  | ** |
| BIOL   |      | 3060 | <b>Principles of Ecology.....</b>                   | ** | 4  |
|        |      |      | Elective.....                                       | 2  | ** |
|        |      |      |   | 15 | 14 |
| SUMMER |      |      |   |    |    |
|        | FISH | 2100 | <b>Introduction to Fish Science(Term III).....</b>  | 3  |    |
| JR     |      |      |   |    |    |
|        |      |      | Social Science Group ++.....                        | 3  | ** |
| CHEM   |      | 2030 | Organic Chemistry.....                              | ** | 3  |
| STAT   | 2510 |      | Stat. Biol and Health .....                         | 3  | ** |
|        |      |      | Emphasis .....                                      | 3  | 4  |
| FISH   | 5220 |      | <b>Water Science .....</b>                          | 3  | ** |
| FISH   | 5320 |      | <b>Limnology .....</b>                              | ** | 4  |
|        |      |      | Free Elective .....                                 | ** | 2  |
|        |      |      | Directed Science Elective+++ .....                  | ** | 4  |
|        |      |      |   | 14 | 15 |

College of Agriculture

|           |      |                                    |    |    |
|-----------|------|------------------------------------|----|----|
| SR        |      | Emphasis .....                     | 4  | 10 |
| FISH 3950 |      | Careers in Fisheries .....         | 1  | ** |
| FISH 5380 |      | General Ichthyology .....          | 4  | ** |
| FISH 5510 |      | Fish Biology & Management .....    | 4  | ** |
|           |      | Elective .....                     | 2  | 3  |
| UNIV      | 4AA0 | AG1 Undergraduate Graduation ..... | ** | 0  |
|           |      |                                    | 15 | 13 |

**TOTAL HOURS - 120**

- + Student must take both courses in a sequence.
- ++ Student will chose from the following: ANTH 1000, GEOG 1010/1017, PSYC 2010, SOCY 1000/1007, or UNIV 2070/2727.
- +++ Direct Science Electives: ANSC 3400, BIOL 3010, BIOL 3100, BIOL 3200 or advisor approval.

**Curriculum in Fisheries and Allied Aquacultures**

Pre-Professional Option

|      |      |      |  |    |    |
|------|------|------|--|----|----|
| FR   | F    | S    |  | F  | S  |
| ENGL | 1100 | 1120 | English Composition I & II .....           | 3  | 3  |
| CHEM | 1030 | 1040 | Fundamentals of Chemistry I & II .....     | 3  | 3  |
| CHEM | 1031 | 1041 | Fundamentals of Chemistry Lab I & II ..... | 1  | 1  |
| MATH | 1610 |      | Calculus .....                             | 4  | ** |
|      |      |      | Humanities Core (PHIL) .....               | ** | 3  |
| BIOL | 1020 |      | Principles of Biology & Lab (1021) .....   | 4  | ** |
| BIOL |      | 1030 | Org Biology & Lab (1031) .....             | ** | 4  |
| FISH | 1100 |      | Fish Orientation .....                     | 1  | ** |
|      |      |      |  | 16 | 14 |
| SO   |      |      |  |    |    |
| ECON | 2020 |      | Principles of Microeconomics .....         | 3  | ** |
|      |      |      | Core Literature .....                      | 3  | ** |
|      |      |      | Social Science Core++ .....                | ** | 3  |
| PHYS | 1500 |      | General Physics I & Lab 1501 .....         | 4  | ** |
| PHYS |      | 1510 | General Physics II & Lab 1511 .....        | ** | 4  |
| CHEM | 2070 | 2080 | Organic Chemistry I & II .....             | 3  | 3  |
| CHEM | 2071 | 2081 | Organic Chemistry I & II Lab .....         | 1  | 1  |
| BIOL |      | 3060 | Prin. of Ecol. .....                       | ** | 4  |
|      |      |      |  | 14 | 15 |

SUMMER

|      |      |   |   |
|------|------|---|---|
| FISH | 2100 | Introd. To Fish. Sci. (Mini-Semester III) ..... | 3 |
|------|------|---|---|

JR

|      |      |                                  |    |    |
|------|------|----------------------------------|----|----|
|      |      | HIST Core I & II+ .....          | 3  | 3  |
|      |      | Fine Art Core .....              | 3  | ** |
|      |      | Emphasis .....                   | 3  | ** |
| FISH | 5220 | Water Science .....              | 3  | ** |
| COMM |      | Public Speaking .....            | ** | 3  |
| STAT |      | Stat. Biol. & Health .....       | ** | 3  |
| BCHE | 3200 | Principles of Biochemistry ..... | 3  | ** |
|      |      | Science Electives .....          | ** | 4  |
|      |      | Elective .....                   | ** | 2  |
|      |      |                                  | 15 | 15 |

SR

|      |      |                                    |    |    |
|------|------|------------------------------------|----|----|
|      |      | Emphasis .....                     | 3  | 3  |
| FISH |      | Limnology .....                    | ** | 4  |
| FISH | 3950 | Seminar .....                      | 1  | ** |
| FISH | 5380 | General Ichthyology .....          | 4  | ** |
| FISH | 5410 | Fish Health .....                  | 3  | ** |
| FISH | 5510 | Fish Biology & Management .....    | 4  | ** |
|      |      | Electives .....                    | ** | 2  |
|      |      | Science Elective .....             | ** | 4  |
| UNIV | 4AA0 | AG1 Undergraduate Graduation ..... | 15 | 13 |

**TOTAL HOURS - 120**

- + Student must take both courses in a sequence.
- ++ Student will chose from the following: ANTH 1000, GEOG 1010/1017, PSYC 2010, SOCY 1000/1007, or UNIV 2070/2727.

**Horticulture (HORT)**

Courses prepare Horticulture graduates for the following careers; nursery manager, landscape designer, landscape installer, landscape maintenance, interior landscaping, plant propagator, city or state horticulturist, extension horticulturist, horticulture writer, horticulture teacher, florist shop manager, greenhouse manager, vegetable producer, orchard manager, chemical company representative, seed company representative or retail garden center manager.

Four undergraduate tracks are available to students in horticulture: landscape horticulture, nursery and greenhouse science, pre-landscape architecture, and fruit and vegetable production. Horticulture offers masters' and doctoral degrees, which lead to professional positions in teaching, research, and extension.

**Curriculum in Nursery and Greenhouse Science Emphasis**

|      |      |      |   |       |       |
|------|------|------|---|-------|-------|
| FR   | F    | S    |   | F     | S     |
| BIOL | 1020 |      | Principles of Biology & Lab (1021) .....  | 4     | **    |
| BIOL |      | 1030 | Organismal Biology & Lab (1031) .....     | **    | 4     |
|      |      | 1030 | Fundamentals of Chemistry .....           | **    | 3     |
|      |      | 1031 | Fundamentals of Chemistry Lab .....       | **    | 1     |
| ENGL | 1100 | 1120 | English Composition I & II .....          | 3     | 3     |
| MATH | 1130 |      | Pre-Calculus W/Trig OR .....              | 3     | **    |
| MATH | 1150 |      | Pre-Calculus Algebra & Trig .....         | 4     | **    |
|      |      |      | Core History Sequence I & II .....        | 3     | 3     |
| HORT | 1010 |      | Introduction to Horticulture .....        | 1     | **    |
|      |      |      |   | 14-15 | 14    |
| SO   |      |      |   |       |       |
|      |      |      | Core Humanities (PHIL) <sup>2</sup> ..... | **    | 3     |
| ECON | 2020 |      | Microeconomics .....                      | 3     | **    |
|      |      |      | Core Literature .....                     | 3     | **    |
| COMM |      | 1000 | Public Speaking .....                     | **    | 3     |
| AGRN | 2040 |      | Basic Soil Science .....                  | 4     | **    |
|      |      |      | Core Social Science <sup>1</sup> .....    | 3     | **    |
| HORT | 2240 |      | Plant Propagation .....                   | **    | 3     |
| HORT | 3210 |      | Small Trees, Shrubs & Vines .....         | **    | 4     |
| HORT | 3220 |      | Arboriculture .....                       | 4     | **    |
|      |      |      | Electives .....                           | **    | 3-4   |
|      |      |      |   | 17    | 16-17 |
| JR   |      |      |   |       |       |
|      |      |      | Core Humanities (FINE ARTS) .....         | **    | 3     |
| PLPA | 3000 |      | General Plant Pathology .....             | 4     | **    |
| AGRN | 3150 |      | Turfgrass Management .....                | 4     | **    |
| ENTM |      | 4020 | Economic Entomology .....                 | **    | 4     |
| HORT | 3000 |      | Growth & Dev. of Hort Plants .....        | 3     | **    |
| HORT | 3220 |      | Arboriculture .....                       | 4     | **    |
| HORT | 3950 |      | Careers in Horticulture .....             | 1     | **    |
| HORT |      | 4100 | Herbaceous Ornamentals .....              | **    | 4     |
|      |      |      | Group I .....                             | **    | 3-4   |
|      |      |      |   | 16    | 14-15 |
| SR   |      |      |   |       |       |
| HORT | 5220 |      | Greenhouse Management Science .....       | 4     | **    |
| HORT | 5230 |      | Nursery Management .....                  | 4     | **    |
|      |      |      | Group I .....                             | 3-4   | 3-4   |
|      |      |      | Group 2 .....                             | 3-4   | 3-4   |
|      |      |      | Electives .....                           | **    | 3-9   |
| UNIV |      | 4AA0 | AG1 Undergraduate Graduation .....        | **    | 0     |
|      |      |      |   | 14-16 | 11-15 |

**TOTAL HOURS - 120**

<sup>2</sup> Please refer to *Bulletin* for core humanities courses that meet SLO 3.

**Curriculum in Landscape Horticulture Emphasis**

|      |      |      |   |       |       |
|------|------|------|---|-------|-------|
| FR   | F    | S    |   | F     | S     |
| BIOL | 1020 |      | Principles of Biology & Lab (1021) .....  | 4     | **    |
| BIOL |      | 1030 | Organismal Biology & Lab (1031) .....     | **    | 4     |
| CHEM |      | 1030 | Fundamentals of Chemistry .....           | **    | 3     |
| CHEM |      | 1031 | Fundamentals of Chemistry Lab .....       | **    | 1     |
| ENGL | 1100 | 1120 | English Composition I & II .....          | 3     | 3     |
| MATH | 1130 |      | Pre-Calculus W/Trig OR .....              | 3     | **    |
| MATH | 1150 |      | Pre-Calculus Algebra & Trig .....         | 4     | **    |
|      |      |      | Core History Sequence I & II .....        | 3     | 3     |
| HORT | 1010 |      | Introduction to Horticulture .....        | 1     | **    |
|      |      |      |   | 14-15 | 14    |
| SO   |      |      |   |       |       |
| HORT | 3220 |      | Arboriculture .....                       | 4     | **    |
| ECON | 2020 |      | Microeconomics .....                      | 3     | **    |
|      |      |      | Core Literature .....                     | 3     | **    |
|      |      |      | Core Humanities (PHIL) <sup>2</sup> ..... | **    | 3     |
| COMM |      | 1000 | Public Speaking .....                     | **    | 3     |
| AGRN | 2040 |      | Basic Soil Science .....                  | 4     | **    |
|      |      |      | Core Social Science <sup>1</sup> .....    | 3     | **    |
| HORT | 2240 |      | Plant Propagation .....                   | **    | 3     |
| HORT | 3210 |      | Small Trees, Shrubs & Vines .....         | **    | 4     |
|      |      |      |   | 17    | 13    |
| JR   |      |      |   |       |       |
|      |      |      | Core Humanities (FINE ARTS) .....         | **    | 3     |
| PLPA | 3000 |      | General Plant Pathology .....             | 4     | **    |
| AGRN | 3150 |      | Turfgrass Management .....                | 4     | **    |
| ENTM |      | 4020 | Economic Entomology .....                 | **    | 4     |
| HORT | 3950 |      | Group I .....                             | 3-4   | 3-4   |
| HORT | 4100 |      | Careers in Horticulture .....             | 1     | **    |
| HORT |      | 4100 | Herbaceous Ornamentals .....              | **    | 4     |
| HORT | 4270 |      | Intermediate Landscape Design .....       | 3     | **    |
|      |      |      |   | 15-16 | 14-15 |
| SR   |      |      |   |       |       |
| HORT |      | 5210 | Landscape Bid, Install & Maint .....      | **    | 4     |
| HORT | 3000 |      | Growth & Develop of Hort Plants .....     | 3     | **    |
|      |      |      | Group I .....                             | 3-4   | **    |
|      |      |      | Group 2 .....                             | 3-4   | 3-4   |
|      |      |      | Electives .....                           | 3-8   | 8-9   |
| UNIV |      | 4AA0 | AG1 Undergraduate Graduation .....        | **    | 0     |
|      |      |      |   | 12-17 | 15-16 |

**TOTAL HOURS - 120**

<sup>2</sup> Please refer to *Bulletin* for core humanities courses that meet SLO 3.

**Curriculum in Pre-Landscape Architecture Emphasis**

Students who have successfully completed the first three years of the Pre-Landscape Architecture Emphasis and who have a minimum 2.8 cumulative GPA are eligible to apply to the Landscape Architecture Summer Design Studio. Students who have successfully completed the Summer Design Studio and who are approved by the Landscape Architecture Faculty Admissions Committee are eligible to make application to the Graduate School for the Master of Landscape Architecture Program upon the completion of the fourth year. Please see the Office of Academic Affairs in the College of Agriculture for further information.

| Pre-Landscape Architecture Emphasis |      |      |  |          |
|-------------------------------------|------|------|--|----------|
| FR                                  | F    | S    |  | F S      |
| BIOL                                | 1020 |      | Principles of Biology & Lab (1021) .....     | 4 **     |
| BIOL                                |      | 1030 | Organismal Biology & Lab (1031) .....        | ** 4     |
| CHEM                                |      | 1030 | Fundamentals of Chemistry .....              | ** 3     |
| CHEM                                |      | 1031 | Fundamentals of Chemistry Lab .....          | ** 1     |
| ENGL                                | 1100 | 1120 | English Composition I & II .....             | 3 3      |
| MATH                                | 1130 |      | Pre-Calculus W/Trig .....                    | 3 **     |
| MATH                                | 1150 |      | Pre-Calculus Algebra & Trig .....            | 4 **     |
|                                     |      |      | Core History Sequence I & II .....           | 3 3      |
| HORT                                | 1010 |      | Introduction to Horticulture.....            | ** 1     |
|                                     |      |      |  | 14-15 14 |
| SO                                  |      |      |  |          |
| HORT                                | 3220 |      | Arboriculture.....                           | 4 **     |
| HORT                                | 3000 |      | Growth & Develop of Hort Plants.....         | 3 **     |
|                                     |      |      | Core Literature .....                        | 3 **     |
| ECON                                | 2020 |      | Microeconomics .....                         | 3 **     |
| COMM                                |      | 1000 | Public Speaking.....                         | ** 3     |
| AGRN                                | 2040 |      | Basic Soil Science .....                     | 4 **     |
|                                     |      |      | Core Humanities (PHIL) <sup>2</sup> .....    | ** 3     |
| HORT                                |      | 2240 | Plant Propagation.....                       | ** 3     |
| HORT                                |      | 3210 | Small Trees, Shrubs & Vines.....             | ** 4     |
|                                     |      |      |  | 17 13    |
| JR                                  |      |      |  |          |
|                                     |      |      | Core Humanities (FINE ARTS).....             | ** 3     |
| PLPA                                | 3000 |      | General Plant Pathology .....                | 4 **     |
| AGRN                                | 3150 |      | Turfgrass Management .....                   | 4 **     |
| ENTM                                |      | 4020 | Economic Entomology.....                     | 4 4      |
|                                     |      |      | Core Social Science <sup>1</sup> .....       | ** 3     |
| HORT                                | 3950 |      | Careers in Horticulture.....                 | 1 **     |
| HORT                                |      | 4100 | Herbaceous Ornamentals.....                  | ** 4     |
| HORT                                | 4270 |      | Intermediate Landscape Design .....          | 3 **     |
|                                     |      |      |  | 12 14    |
| SUMMER                              |      |      |  |          |
| LAND                                | 5130 |      | Studio I .....                               | 5        |
| LAND                                | 5131 |      | Field Studies .....                          | 1        |
| LAND                                | 5140 |      | History I .....                              | 3        |
| LAND                                | 5150 |      | Construction I .....                         | 2        |
| LAND                                | 5160 |      | Graphic Studies I.....                       | 2        |
| LAND                                | 5170 |      | Graphic Studies II.....                      | 3        |
|                                     |      |      |  | 16       |
| SR                                  |      |      |  |          |
| LAND                                | 5230 |      | Studio II .....                              | 5 **     |
| LAND                                | 5131 |      | Field Studies.....                           | 1 **     |
| LAND                                | 5240 |      | History II .....                             | 3 **     |
| LAND                                | 5250 |      | Constuction II .....                         | 2 **     |
| LAND                                | 5260 |      | Graphic Studies III .....                    | 3 **     |
| LAND                                | 5270 |      | Plant Spatiality.....                        | 2 **     |
| LAND                                |      | 5330 | Studio III .....                             | ** 5     |
| LAND                                | 5331 |      | Field Studies.....                           | ** 1     |
| LAND                                | 5340 |      | Urban Studies I.....                         | ** 3     |
| LAND                                | 5360 |      | Dynamic Systems I.....                       | ** 3     |
| HORT                                |      | 5210 | Landscape Bidding, Installation & Main ..... | ** 4     |
|                                     |      |      |  | 16 16    |

**TOTAL HOURS - 132**

<sup>2</sup> Please refer to *Bulletin* for core humanities courses that meet SLO 3.

**Curriculum in Fruit and Vegetable Production Emphasis**

| FR   | F    | S    |  | F S   |
|------|------|------|--|-------|
| BIOL | 1020 |      | Principles of Biology & Lab (1021) ..... | 4 **  |
| BIOL |      | 1030 | Organismal Biology & Lab (1031) .....    | ** 4  |
| ENGL | 1100 | 1120 | English Composition I & II .....         | 3 3   |
| MATH | 1130 |      | Pre-Calculus W/Trig .....                | 3 **  |
|      |      |      | Core Fine Arts .....                     | ** 3  |
|      |      |      | Core History Sequence I & II .....       | 3 3   |
| COMM |      | 1000 | Public Speaking.....                     | ** 3  |
| HORT | 1010 |      | Introduction to Horticulture.....        | ** 1  |
|      |      |      |  | 14 16 |

|        |      |      |  |             |
|--------|------|------|--|-------------|
| SO     |      |      |  |             |
| CHEM   | 1030 | 1040 | Fundamentals of Chemistry I & II .....         | 3 3         |
| CHEM   | 1031 | 1041 | Fundamentals of Chemistry I & II Lab .....     | 1 1         |
|        |      |      | Humanities Choice <sup>2</sup> .....           | 3 **        |
|        |      |      | Core Literature .....                          | 3 **        |
|        |      |      | Electives .....                                | ** 3        |
| ACCT   |      | 2810 | Fund of Accounting.....                        | ** 3        |
| HORT   | 2010 |      | Fruit and Nut Production.....                  | 4 **        |
| HORT   |      | 2030 | Vegetable Production.....                      | ** 3        |
| HORT   |      | 2240 | Plant Propagation.....                         | ** 3        |
|        |      |      |  | 14 16       |
| JR     |      |      |  |             |
| PLPA   | 3000 |      | General Plant Pathology .....                  | 4 **        |
| ENTM   |      | 4020 | Economic Entomology.....                       | ** 4        |
|        |      |      | Core Social Science <sup>1</sup> .....         | ** 3        |
| ECON   |      | 2020 | Prin. Microeconomics .....                     | ** 3        |
| HORT   | 3000 |      | Group I or 2.....                              | 3-4 3-4     |
| HORT   |      | 5120 | Growth & Dev of Hort Plants.....               | ** 3        |
|        |      |      | Small Fruit & Pecan Culture <sup>3</sup> ..... | ** 3        |
|        |      |      |  | 13-14 15-16 |
| SUMMER |      |      |  |             |
| HORT   | 5110 |      | Tree Fruit Culture .....                       | 2           |
| SR     |      |      |  |             |
| HORT   | 5130 |      | Sustain Veg Crop Production.....               | ** 3        |
| HORT   | 5140 |      | Postharvest Biology & Tech .....               | ** 3        |
|        |      |      | Group I or 2.....                              | 6-8 **      |
| AGRN   | 2040 |      | Basic Soil Science.....                        | 4 **        |
|        |      |      | Electives .....                                | 0-5 10-11   |
| UNIV   |      | 4AA0 | AG1 Undergraduate Graduation .....             | ** 0        |
|        |      |      |  | 12-13 16-17 |

**TOTAL HOURS - 120**

<sup>2</sup> Please Refer to *Bulletin* for Core Humanities Courses That Meet SLO 3.

<sup>3</sup> Even Years Only

<sup>4</sup> Odd Years Only

**Poultry Science (POUL)**

Four curriculum options are available to students in Poultry Science 1) Poultry Production, 2) Poultry Science/Pre-Veterinary Medicine 3) Poultry Processing and Products, and 4) Food Science. Each option leads to the BS degree in Poultry Science. Professional and general electives within each option allow students to pursue expertise in their individual area of interest. Enrollment in summer internship is required in all four options.

**Curriculum in Poultry Production**

This option is designed to develop technical, analytical, communication, business, and management skills needed for advancement to leadership positions in the poultry production, and allied agricultural industries. Graduates will be able to apply their knowledge of science, economics, business, and ethics to identify, analyze and responsibly address challenges associated with modern poultry production. Relevant courses in poultry processing and products are also included in this curriculum option.

**Poultry Production Option**

| FR   | F    | S    |  | F S   |
|------|------|------|--|-------|
| COMP | 1000 |      | Personal Computer Applications .....       | 2 **  |
|      |      |      | Humanities Core (PHIL) .....               | ** 3  |
| CHEM | 1030 | 1040 | Fundamentals of Chemistry I & II .....     | 3 3   |
| CHEM | 1031 | 1041 | Fundamentals of Chemistry I & II Lab ..... | 1 1   |
| ENGL | 1100 | 1120 | English Composition I & II .....           | 3 3   |
| MATH | 1130 |      | Pre-Calculus w/Trigonometry .....          | 3 **  |
|      |      |      | Core Social Science*.....                  | ** 3  |
|      |      |      | Public Speaking.....                       | ** 3  |
| COMM |      | 1000 |  | ** 3  |
| POUL | 1000 |      | Introductory Poultry Science .....         | 3 **  |
|      |      |      |  | 15 16 |

|      |      |      |  |       |
|------|------|------|--|-------|
| SO   |      |      | Core History 1 and Core History 2 .....  | 3 3   |
|      |      |      | Core Fine Arts .....                     | 3 **  |
| ECON |      | 2020 | Microeconomics .....                     | ** 3  |
| ENGL |      |      | Core Literature .....                    | 3 **  |
| BIOL | 1020 |      | Principles of Biology & Lab (1021) ..... | 4 **  |
| BIOL |      | 1030 | Organismal Biology & Lab (1031) .....    | ** 4  |
| POUL | 3030 |      | Commercial Poultry Production .....      | 4 **  |
| CHEM |      | 2030 | Survey of Organic Chemistry .....        | ** 3  |
|      |      |      | Free Elective .....                      | ** 3  |
|      |      |      |  | 17 16 |

College of Agriculture

|      |      |   |    |    |  |
|------|------|---|----|----|--|
| JR   |      |   |    |    |  |
| BCHE | 3200 | Principles of Biochemistry .....            | ** | 3  |  |
| PHYS | 1000 | Foundations of Physics & Lab .....          | 4  | ** |  |
| POUL | 3150 | Poultry Physiology .....                    | ** | 4  |  |
| POUL | 3060 | Poultry Breed, Fert, & Hatch .....          | ** | 4  |  |
| POUL | 5110 | Poultry Processing .....                    | 3  | ** |  |
| STAT | 2510 | Statistics for Biol & Health Sciences ..... | 3  | ** |  |
|      |      | Professional Electives .....                | 4  | 4  |  |
|      |      |   | 14 | 15 |  |

|      |      |   |    |       |  |
|------|------|---|----|-------|--|
| SR   |      |   |    |       |  |
| STAT | 2510 | Statistics for Biol & Health Sciences ..... | ** | 3     |  |
| POUL | 5050 | Poultry Feeding .....                       | 4  | **    |  |
| POUL | 5160 | Principles of Food Safety .....             | ** | 3     |  |
| POUL | 5140 | Poultry Further Processing .....            | 4  | **    |  |
| POUL | 5080 | Poultry Health .....                        | ** | 3     |  |
| POUL | 3060 | Poultry Breed, Fert, & Hatch .....          | ** | 4     |  |
| POUL | 4920 | Poultry Science Internship .....            | 3  | **    |  |
|      |      | Free Elective .....                         | 3  | 3-4   |  |
| UNIV | 4AA0 | AG1 Undergraduate Graduation .....          | ** | 0     |  |
|      |      |   | 14 | 16-17 |  |

|               |      |                                    |   |    |    |
|---------------|------|------------------------------------|---|----|----|
| <b>SUMMER</b> |      |                                    |   |    |    |
| POUL          | 4920 | Poultry Science Internship .....   | 3   | ** |    |
| SR            | AGEC | 4000                               | Agribusiness Management .....             | 3  | ** |
|               |      |                                    | COMM 2410 or ENGL 3040 or ENGL 3080 ..... | 3  | ** |
| BIOL          | 3200 | Microbiology .....                 | 4   | ** |    |
| POUL          | 5140 | Poultry Further Processing .....   | 4   | ** |    |
| POUL          | 5050 | Poultry Feeding .....              | 4   | ** |    |
| POUL          | 5080 | Poultry Health .....               | **  | 3  |    |
| POUL          | 5160 | Principles of Food Safety .....    | **  | 3  |    |
|               |      | Free Elective .....                | **  | 2  |    |
|               |      | Professional Electives .....       | **  | 4  |    |
| UNIV          | 4AA0 | AG1 Undergraduate Graduation ..... | **  | 0  |    |
|               |      |                                    | 15  | 15 |    |

**TOTAL HOURS - 126**

For professional electives see advisor for approved list.

**Curriculum in Poultry Science/Pre-Veterinary Medicine**

This option is designed to develop the technical, analytical, and communication skills, as well as the broad scientific foundation needed for success in post-graduate degree programs such as the Doctor of Veterinary Medicine, Master of Science, Doctor of Philosophy or other post-graduate professional degrees. Completion of this option will also prepare graduates for technical and research positions in the poultry and allied industries. Courses listed for the first six semesters satisfy requirements for admission to the College of Veterinary Medicine. Completion of the remaining requirements or successful completion of one year in the College of Veterinary Medicine or Pharmacy School entitles the student to a BS degree in poultry science.

**Poultry Science/Pre-Veterinary Medicine Option**

|           |      |      |  |       |    |
|-----------|------|------|--|-------|----|
| FR        | F    | S    |  | F     | S  |
| BIOL      | 1020 |      | Principles of Biology & Lab (1021) .....   | 4     | ** |
| BIOL      |      | 1030 | Organismal Biology & Lab (1031) .....      | **    | 4  |
| COMP      |      | 1000 | Personal Computer Applications .....       | **    | 2  |
|           |      |      | Core Fine Arts .....                       | **    | 3  |
| CHEM      | 1030 | 1040 | Fundamentals of Chemistry I & II .....     | 3     | 3  |
| CHEM      | 1031 | 1041 | Fundamentals of Chemistry I & II Lab ..... | 1     | 1  |
| MATH      | 1130 |      | Pre-Calculus w/Trigonometry .....          | 3     | ** |
| ENGL      |      | 1100 | English Composition I .....                | **    | 3  |
| POUL      | 1000 |      | Introductory Poultry Science .....         | 3     | ** |
|           |      |      |  | 14    | 16 |
| <b>SO</b> |      |      |  |       |    |
|           |      |      | Core History 1 and Core History 2 .....    | 3     | 3  |
| ENGL      | 1120 |      | English Composition II .....               | 3     | ** |
|           |      |      | Humanities Core (PHIL) .....               | **    | 3  |
| ECON      |      | 2020 | Microeconomics .....                       | **    | 3  |
| CHEM      | 2070 | 2080 | Organic Chemistry I & II .....             | 3     | 3  |
| CHEM      | 2071 | 2081 | Organic Chemistry I & II Lab .....         | 1     | 1  |
| POUL      | 3030 |      | Commercial Poultry Production .....        | 4     | ** |
| PHYS      |      | 1500 | General Physics I & Lab .....              | **    | 4  |
|           |      |      | Core Social Science .....                  | 3     | ** |
|           |      |      |  | 17    | 17 |
| <b>JR</b> |      |      |  |       |    |
| ENGL      |      |      | Core Literature .....                      | 3     | ** |
| BIOL      |      | 3200 | Microbiology .....                         | **    | 4  |
| BCHE      | 3200 |      | Principles of Biochemistry .....           | 3     | ** |
| COMM      |      | 1000 | Public Speaking .....                      | **    | 3  |
| POUL      | 5110 |      | Poultry Processing .....                   | 3     | ** |
| PHYS      | 1510 |      | General Physics II & Lab .....             | 4     | ** |
| ANSC      |      | 3400 | Animal Nutrition .....                     | **    | 4  |
| POUL      |      | 3150 | Poultry Physiology .....                   | **    | 4  |
|           |      |      | PreVet Science Elective .....              | 3-4   | ** |
|           |      |      |  | 16-17 | 15 |

**TOTAL HOURS - 126**

For professional electives see advisor for approved list.

**Curriculum in Poultry Processing and Products**

This option is designed to develop the technical, analytical, communication, business and management skills needed for advancement to leadership positions in the poultry processing, food, and allied agricultural industries. This option involves all aspects of the food industry, from raw materials, through processing and packaging, to marketing final products. Relevant courses in poultry production are also included in this option. Fundamental principles studied along with practical experience attained in poultry and food science allow students to fit their education to their personal career goals. Career opportunities for graduates include: quality assurance-food safety, research & product development, technical service, food regulation, and food sales.

**Poultry Processing and Products Option**

|      |      |      |  |    |    |
|------|------|------|--|----|----|
| FR   | F    | S    |  | F  | S  |
|      |      |      | Core Fine Arts .....                       | ** | 3  |
| COMP |      | 1000 | Personal Computer Applications .....       | ** | 2  |
| COMM |      | 1000 | Public Speaking .....                      | ** | 3  |
|      |      |      | Core Social Science Group I .....          | 3  | ** |
| CHEM | 1030 | 1040 | Fundamentals of Chemistry I & II .....     | 3  | 3  |
| CHEM | 1031 | 1041 | Fundamentals of Chemistry I & II Lab ..... | 1  | 1  |
| MATH | 1130 |      | Pre-Calculus w/Trigonometry .....          | 3  | ** |
| ENGL | 1100 | 1120 | English Composition I & II .....           | 3  | 3  |
| POUL | 1000 |      | Introductory Poultry Science .....         | 3  | ** |
|      |      |      |  | 16 | 15 |

|           |      |      |  |       |       |
|-----------|------|------|--|-------|-------|
| <b>SO</b> |      |      |  |       |       |
|           |      |      | Core History 1 and Core History 2 .....  | 3     | 3     |
|           |      |      | Humanities Core (PHIL) .....             | 3     | **    |
| ECON      |      | 2020 | Microeconomics .....                     | **    | 3     |
| ENGL      |      |      | Core Literature .....                    | **    | 3     |
| BIOL      | 1020 |      | Principles of Biology & Lab (1021) ..... | 4     | **    |
| BIOL      |      | 1030 | Organismal Biology & Lab (1031) .....    | **    | 4     |
| CHEM      |      | 2030 | Survey of Organic Chemistry .....        | **    | 3     |
| POUL      | 3030 |      | Commercial Poultry Production .....      | 4     | **    |
|           |      |      | Free Elective .....                      | **    | 3     |
|           |      |      |  | 17    | 16    |
| <b>JR</b> |      |      |  |       |       |
| PHYS      | 1000 |      | Foundations of Physics & Lab .....       | 4     | **    |
| BCHE      | 3200 |      | Principles of Biochemistry .....         | 3     | **    |
| BIOL      | 3200 |      | Microbiology .....                       | 4     | **    |
| BIOL      |      | 5660 | Food Microbiology .....                  | **    | 5     |
| POUL      |      | 3150 | Poultry Physiology .....                 | **    | 4     |
| FDSC      |      | 5150 | Food Laws and Regulations .....          | **    | 3     |
|           |      |      | Processing Course .....                  | 3-4   | **    |
|           |      |      | PPP Support Course .....                 | **    | 3-4   |
|           |      |      |  | 14-15 | 15-16 |

|               |      |  |       |       |  |
|---------------|------|--|-------|-------|--|
| <b>SUMMER</b> |      |  |       |       |  |
| POUL          | 4920 | Poultry Science Internship .....             | 3     | **    |  |
| <b>SR</b>     |      |  |       |       |  |
| BSEN          | 5550 | Principles of Food Engineering Technol. .... | 4     | **    |  |
| STAT          | 2510 | Statistics for Biol & Health Sciences .....  | 3     | **    |  |
| FDSC          | 5450 | Food Analysis and Quality Control .....      | 4     | **    |  |
| FDSC          | 5430 | Food Chemistry .....                         | **    | 4     |  |
| POUL          | 5160 | Principles of Food Safety .....              | **    | 3     |  |
|               |      | Processing Course .....                      | 3-4   | **    |  |
|               |      | PPP Support Course .....                     | **    | 3-4   |  |
| UNIV          | 4AA0 | AG1 Undergraduate Graduation .....           | **    | 0     |  |
|               |      |  | 14-15 | 14-15 |  |

**TOTAL HOURS - 126**

For support courses and processing courses, see advisor for approved list.

College of Agriculture

**Curriculum in Food Science**

This option is designed to develop technical, analytical, and communication skills, as well as provide a broad scientific foundation to prepare students for employment within the food industry or admittance into graduate school. Upper-level food science courses address the chemical, physical, and biological properties of foods and how these properties influence food processing, quality, and safety. This undergraduate food science program is formally approved by the Institute of Food Technologists. Graduates in food science find employment in quality assurance, product development, food safety, and technical sales.

| <b>Food Science Option</b> |      |      |  |
|----------------------------|------|------|--|
| FR                         | F    | S    |  |
| COMP                       |      | 1000 | Personal Computer Applications ..... ** 2      |
|                            |      |      | Core Fine Arts ..... 3 **                      |
| CHEM                       | 1030 | 1040 | Fundamentals of Chemistry I & II ..... 3 3     |
| CHEM                       | 1031 | 1041 | Fundamentals of Chemistry I & II Lab ..... 1 1 |
| ENGL                       | 1100 | 1120 | English Composition I & II ..... 3 3           |
| MATH                       | 1610 |      | Calculus I ..... 4 **                          |
| BIOL                       |      | 1020 | Principles of Biology & Lab (1021) ..... ** 4  |
| NTRI                       |      | 2000 | Nutrition and Health ..... ** 3                |
| POUL                       | 1000 |      | <b>Introductory Poultry Science</b> ..... 3 ** |
|                            |      |      | <b>17 16</b>                                   |
| <b>SO</b>                  |      |      |  |
|                            |      |      | Core History 1 and Core History 2 ..... 3 3    |
|                            |      |      | Core Social Science* ..... 3 **                |
| ECON                       |      | 2020 | Microeconomics ..... ** 3                      |
| ENGL                       |      |      | Core Literature ..... 3 **                     |
| COMM                       | 1000 |      | Public Speaking ..... 3 **                     |
| NTRI                       | 2050 |      | Science of Food ..... 4 **                     |
| PHYS                       |      | 1000 | Foundations of Physics & Lab ..... ** 4        |
| CHEM                       |      | 2030 | Survey of Organic Chemistry ..... ** 3         |
|                            |      |      | Free Elective ..... ** 3                       |
|                            |      |      | <b>16 16</b>                                   |

|      |      |      |   |
|------|------|------|---|
| JR   |      |      |   |
| BCHE | 3200 |      | Principles of Biochemistry ..... 3 **     |
| BIOL | 3200 |      | Microbiology ..... 4 **                   |
| BIOL |      | 5560 | Food Microbiology ..... ** 5              |
| FDSC | 5770 |      | Food Plant Sanitation ..... 4 **          |
| FDSC |      | 5430 | Food Chemistry ..... ** 4                 |
| FDSC |      | 5730 | Sensory Evaluation ..... ** 3             |
|      |      |      | POUL 5140 or ANSC 4700 ..... 4 **         |
|      |      |      | Food Science Electives or ROTC ..... ** 3 |
|      |      |      | <b>15 15</b>                              |

|               |      |      |                                       |
|---------------|------|------|---------------------------------------|
| <b>SUMMER</b> |      |      |                                       |
|               | FDSC | 4920 | Poultry Science Internship ..... 3 ** |

|           |      |      |   |
|-----------|------|------|---|
| <b>SR</b> |      |      |   |
|           |      |      | Humanities Core (PHIL) ..... ** 3                   |
| BSEN      | 5550 |      | Principles of Food Engineering Technol ..... 4 **   |
| FDSC      |      | 4290 | Professional Development in Food Science ..... ** 1 |
| FDSC      | 5450 |      | Food Analysis and Quality Control ..... 4 **        |
| FDSC      |      | 5640 | Food Product Development ..... ** 4                 |
| POUL      |      | 5160 | Principles of Food Safety ..... ** 3                |
| STAT      | 2510 |      | Statistics for Biol & Health Sciences ..... 3 **    |
|           |      |      | Food Science Electives or ROTC ..... 3 3            |
| UNIV      |      | 4AA0 | AG1 Undergraduate Graduation ..... ** 0             |
|           |      |      | <b>14 14</b>  |

**TOTAL HOURS - 126**

For food science electives, see advisor for approved list.