|  |
| --- |
| For Academic Affairs and Research Use Only |
| CIP Code:  |  |
| Degree Code: |  |

 **Course Deletion Proposal Form**

**[x] Undergraduate Curriculum Council**

**[ ] Graduate Council**

Signed paper copies of proposals submitted for consideration are no longer required. Please type approver name and enter date of approval.

Email completed proposals to curriculum@astate.edu for inclusion in curriculum committee agenda.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|

|  |  |
| --- | --- |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |

**Department Curriculum Committee Chair** |

|  |  |
| --- | --- |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |

**COPE Chair (if applicable)** |
|

|  |  |
| --- | --- |
| Donald Kennedy | 1/25/2019 |

**Department Chair:**  |

|  |  |
| --- | --- |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |

**Head of Unit (If applicable)**   |
|

|  |  |
| --- | --- |
| J. Kim Pittcock | 1/25/2019 |

**College Curriculum Committee Chair** |

|  |  |
| --- | --- |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |

**Undergraduate Curriculum Council Chair** |
|

|  |  |
| --- | --- |
| Timothy Burcham | 1/25/2019 |

**College Dean** |

|  |  |
| --- | --- |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |

**Graduate Curriculum Committee Chair** |
|

|  |  |
| --- | --- |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |

**General Education Committee Chair (If applicable)**   |

|  |  |
| --- | --- |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |

**Vice Chancellor for Academic Affairs** |

**1. Course Title, Prefix and Number**

AGED 3433, Agricultural Equipment Hydraulic Systems;
AGST 1003, Modern Agricultural Systems;

AGST 4013, Precision Application Technology.

*Note: Multiple bulletin changes associated with the Major in Agricultural Studies, AGST Emphasis realignment and AGED Emphasis area adjustment that are being submitted. Other changes are addressed in numerous proposals submitted concurrently.*

\*Due to the high number of concurrent changes, for clarity, deleted courses are highlighted at the end on the bulletin pages.

**2. Contact Person** (Name, Email Address, Phone Number)

John Nowlin, jnowlin@astate.edu, (870) 972-3468

**3. Last semester course will be offered**

AGED 3433, Agricultural Equipment Hydraulic Systems - Spring 2018
AGST 1003, Modern Agricultural Systems - Fall 2018

AGST 4013, Precision Application Technology - Spring 2018

Please clarify by selecting one of the following:

1. [x] Remove Courses from bulletin for Fall of 2019
2. [ ] Other - Please clarify - Click here to enter text.

**4. Student Population**

a. The course was initially created for what student population?

Agriculture Students working with geospatial technologies on farms

b. How will deletion of this course affect those students?

Course substitutions from current and newly offered courses will be made to accommodate students enrolled in the Major in Agricultural Studies - Emphasis in Agricultural Systems Technology & “Minor in Spatial Technologies and Geographic Information Systems.”

**College, Departmental, or Program Changes**

**5.** a. How will this affect the college, department, and/or program?

Replacement courses will be inserted for those removed.

b. **[No]** Does this program and/or course affect another department?

If yes, provide confirmation of acceptance/approval of changes from the Dean, Department Head, and/or Program Director whose area this affects.

 Enter text...

 c. Please provide a short justification for why this course being deleted from program.

 These courses are being deleted in support of the overall plan for the new focus for AGST emphasis.

**6. [No]** **Is there currently a course listed in the bulletin which is equivalent to this one?**

If yes, which course(s)?

**7. [No] Will this course be equivalent to a new course?**

If yes, what course?

**Bulletin Changes**

|  |
| --- |
| **Instructions**  |
| **Please visit** [**http://www.astate.edu/a/registrar/students/bulletins/index.dot**](http://www.astate.edu/a/registrar/students/bulletins/index.dot) **and select the most recent version of the bulletin. Copy and paste all bulletin pages this proposal affects below. Follow the following guidelines for indicating necessary changes.** **\*Please note: Courses are often listed in multiple sections of the bulletin. To ensure that all affected sections have been located, please search the bulletin (ctrl+F) for the appropriate courses before submission of this form.** - Deleted courses/credit hours should be marked with a red strike-through (~~red strikethrough~~)- New credit hours and text changes should be listed in blue using enlarged font (blue using enlarged font). - Any new courses should be listed in blue bold italics using enlarged font (***blue bold italics using enlarged font***)*You can easily apply any of these changes by selecting the example text in the instructions above, double-clicking the ‘format painter’ icon 🡪 , and selecting the text you would like to apply the change to.**Please visit* [*https://youtu.be/yjdL2n4lZm4*](https://youtu.be/yjdL2n4lZm4) *for more detailed instructions.* |

Multiple bulletin changes associated with an Agricultural Studies, AGST Emphasis realignment and AGED Emphasis area adjustment that are being submitted. Below are the changes to pages: 115, 117, 118, 430, and 432 in the 2018-2019 Undergraduate Bulletin. Other changes are addressed in numerous proposals submitted concurrently.

\*Due to the high number of concurrent changes, for clarity, these revisions are highlighted at the end on the bulletin page(s).

Pg. 115 …

**Major in Agricultural Studies**

**Bachelor of Science in Agriculture Emphasis in Agricultural Communications**

A complete 8-semester degree plan is available at<https://www.astate.edu/info/academics/degrees/>

|  |  |
| --- | --- |
| **University Requirements:** |  |
| See University General Requirements for Baccalaureate degrees (p. 44) |  |
| **First Year Making Connections Course** | **Sem. Hrs.** |
| AGRI 1213, Making Connections in Agriculture | **3** |
| **General Education Requirements:** | **Sem. Hrs.** |
| See General Education Curriculum for Baccalaureate degrees (p. 89)**Students with this major must take the following:***MATH 1023, College Algebra or MATH course that requires MATH 1023 as a prerequisite BIOL 1003* ***AND*** *BIOL 1001, Biological Science and Laboratory**CHEM 1013,* ***AND*** *CHEM 1011, General Chemistry I and Laboratory* ***OR****CHEM 1043* ***AND*** *CHEM 1041, Fundamental Concepts of Chemistry and Laboratory CMAC 1003, Mass Communications in Modern Society**ECON 2313, Principles of Macroeconomics* ***OR****ECON 2333, Economic Issues and Concepts**COMS 1203, Oral Communication (Required Departmental Gen. Ed. Option)* | **35** |
| **Agriculture Core Courses:** | **Sem. Hrs.** |
| (See Beginning of Agriculture Section) | **24** |
| **Major Requirements:** | **Sem. Hrs.** |
| See emphasis area below. | **-** |
| **Emphasis Area (Agricultural Communications:)** | **Sem. Hrs** |
| AD 3023, Principles of Advertising **OR**PR 3003, Principles of Public Relations | 3 |
| AGEC 3063, Agricultural Sales and Services | 3 |
| AGEC 4083, Agricultural Policy and Current Issues | 3 |
| AGED 1411, Introduction to Agricultural and Extension Education | 1 |
| AGED 3443, Leadership in Agriculture | 3 |
| AGED 445V, Practicum in Agricultural Communications | 3 |
| AGED 4462, Agricultural Youth Organizations | 2 |
| AGRI 420V, Internships in Agriculture | 3 |
| AGRI 4433, Organic Agricultural Production | 3 |
| AGRI 4223, Agriculture and the Environment | 3 |
| ~~AGST 1003, Modern Agricultural Systems~~  | ~~3~~ |
| AGST 3503, Geospatial Data Applications or AGST 4003, Modern Irrigation Systems | ***3*** |
| AGST 3543, Fundamentals of GIS/GPS | 3 |
| CMAC 1001, Media Grammar and Style | 1 |
| CMAC 2003, Media Writing | 3 |
| CMAC 2053, Introduction to Visual Communications | 3 |
| ENG 3043, Technical Writing **OR**MDIA 4053, Advanced Reporting | 3 |
| MDIA 2013 **AND** MDIA 2010, Multimedia Reporting Laboratory | 3 |
| MDIA 2313, Multimedia Production | 3 |

*The bulletin can be accessed at* [*https://www.astate.edu/a/registrar/students/bulletins/*](https://www.astate.edu/a/registrar/students/bulletins/)

115

Pg. 117 …

**Major in Agricultural Studies**

**Bachelor of Science in Agriculture Emphasis in Agricultural Education**

A complete 8-semester degree plan is available at<https://www.astate.edu/info/academics/degrees/>

|  |  |
| --- | --- |
| **University Requirements:** |  |
| See University General Requirements for Baccalaureate degrees (p. 44) |  |
| **First Year Making Connections Course** | **Sem. Hrs.** |
| AGRI 1213, Making Connections in Agriculture | **3** |
| **General Education Requirements:** | **Sem. Hrs.** |
| See General Education Curriculum for Baccalaureate degrees (p. 89)**Students with this major must take the following:***MATH 1023, College Algebra or MATH course that requires MATH 1023 as a prerequisite CHEM 1013* ***AND*** *CHEM 1011, General Chemistry I and Laboratory* ***OR****CHEM 1043* ***AND*** *CHEM 1041, Fundamental Concepts of Chemistry and Laboratory BIOL 1003* ***AND*** *BIOL 1001, Biological Science and Laboratory**COMS 1203, Oral Communication (Required Departmental Gen. Ed. Option)* | **35** |
| **Agriculture Core Courses:** | **Sem. Hrs.** |
| (See Beginning of Agriculture Section) | **24** |
| **Major Requirements:** | **Sem. Hrs.** |
| See emphasis area below. |  |
| **Emphasis Area (Agricultural Education):** | **Sem. Hrs** |
| ANSC 1621, Introduction to Animal Science Laboratory | 1 |
| PSSC 2811, Soils Lab | 1 |
| CHEM 1052, Fundamental Concepts of Organic and Biochemistry | 2 |
| AGED 2433, Principles of Agricultural Power: Electricity and Internal Combustion Engines | 3 |
| AGED 2453, Application of Welding Technologies to Agriculture | 3 |
| AGED 3453, Agricultural Structural Systems | 3 |
| **~~Select three of the following:~~**~~AGED 2433, Principles of Agricultural Power: Electricity and Internal Combustion Engines AGED 2453, Application of Welding Technologies to Agriculture~~~~AGED 3433, Agricultural Equipment Hydraulic Systems AGED 3453, Agricultural Structural Systems~~ | ~~9~~ |
| Electives in AGRI, AGEC, AGED, ANSC, HORT, PSSC, or TECH*(12 hours must be upper-level and all electives must be approved by advisor)* | 15 |
| **Sub-total** | **28** |
| **Professional Education Requirements:**Grade of “C” or better required for all Professional Education Requirements.Courses denoted below with an asterisk (\*) require admission to the Teacher Education Program. For additional information, see Professional Education Requirements for Secondary Majors in the College of Education and Behavioral Science section. | **Sem. Hrs** |
| AGED 1403, Basic Agricultural Mechanics | 3 |
| AGED 1411, Introduction to Agricultural and Extension Education | 1 |
| AGED 4433, Methods of Teaching Agricultural Mechanics | 3 |
| AGED 4462, Agricultural Youth Organizations | 2 |
| SCED 2513 Introduction to Secondary Teaching | 3 |
| PSY 3703, Educational Psychology | 3 |
| \*EDAG 4623, Special methods for Teaching Agricultural Education | 3 |
| \*TIAG 4826, Teaching Internship in the Secondary School | 12 |
| **Sub-total** | **30** |
| **Total Required Hours:** | **120** |

…

From pg. 118 …

**Major in Agricultural Studies**

**Bachelor of Science in Agriculture**

**Emphasis in Agricultural Systems Technology**

A complete 8-semester degree plan is available at <https://www.astate.edu/info/academics/degrees/>

|  |  |
| --- | --- |
| **University Requirements:** |   |
| See University General Requirements for Baccalaureate degrees (p. 44) |   |
| **First Year Making Connections Course** | **Sem. Hrs.** |
| AGRI 1213, Making Connections in Agriculture | **3** |
| **General Education Requirements:**  | **Sem. Hrs.** |
| See General Education Curriculum for Baccalaureate degrees (p. 89)**Students with this major must take the following:***MATH 1023, College Algebra or MATH course that requires MATH 1023 as a prerequisite**~~PHYS 2054, General Physics I~~* *BIOL 1003* ***AND*** *BIOL 1001, Biological Science and Laboratory****CHEM 1013 AND 1011, General Chemistry I and Laboratory OR******CHEM 1043 AND CHEM 1041, Fundamental Concepts of Chemistry and Laboratory****COMS 1203, Oral Communication (Required Departmental Gen. Ed. Option)* | **35** |
| **Agriculture Core Courses:**  | **Sem. Hrs.** |
| (See Beginning of Agriculture Section)  | **24** |
| **Major Requirements:** | **Sem. Hrs.** |
| See emphasis area below. |   |
| **Emphasis Area (Agricultural Systems Technology):** | **Sem. Hrs** |
| *Select one of the following:*~~AGEC 3003, Agricultural Marketing~~AGEC 3013, Agricultural Records **OR**~~AGEC 3063, Agricultural Sales and Service~~ AGST 3503, Geospatial Data Applications | 3 |
| ~~AGED 3433, Agricultural Equipment Hydraulic Systems~~ | ~~3~~ |
| AGRI 4223, Agriculture and the Environment | 3 |
| ~~AGST 1003, Modern Agricultural Systems~~ | ~~3~~ |
| ~~AGST 3503, Agricultural Spatial Technologies I~~  | ~~3~~ |
| ~~AGST 3513, Agricultural Spatial Technologies II~~ | ~~3~~ |
| AGST 3543, Fundamentals of GIS/GPS | 3 |
| AGST 4003, Modern Irrigation Systems | 3 |
| ~~AGST 4013, Precision Application Technology~~***AGST 4022, Irrigation Technology Tools*** | ~~3~~***2*** |
| AGST 4543, Advanced ~~GIS for Agriculture and Natural Resources~~ Geographic Information Systems | 3 |
| *Select one of the following:* ***AGST 4501, Agricultural Decision Analysis*** **OR** ***AGST 4511, Umanned Aircraft Systems*** | ***1*** |
| AGST 4773, Remote Sensing | 3 |
| AGST 4843, Agricultural Systems Technology Capstone | **3** |
| *Select one of the following:*BIO 3023, Principles of Ecology **OR**GEOG 3723, Introduction to Physical Geography **OR**GEOG 4113, Water Resources Planning **OR**GEOG 4633, Climatology~~CHEM 1043 Fundamental Concepts of Chemistry~~  | **3** |
| *Select one of the following:*BIO 1503 AND 1501, Biology of Plants and Laboratory **OR**GEOL 1003 AND 1001, Environmental Geology and Laboratory **OR**PHSC 1014, Energy and the Environment **OR**PHSC 1203 AND 1201, Physical Science and Laboratory **OR**PHYS 1103 AND 1101, Intro to Space Science and Laboratory **OR**PHYS 2054, General Physics I ~~PHYS 2064, General Physics II~~  | 4 |
| *Select one of the following:*CIT 1503, Microcomputer Applications **OR**CS 1013, Introduction to Computers  | **3** |
| GEOG 2613, Introduction to Geography | 3 |
| MATH 1033, Plane Trigonometry | 3 |
| *Select ~~one~~ two of the following:*PSSC 3313, Plant Disease Management **OR**PSSC 3323, Weeds and Weed Control **OR**PSSC 4713, Soil Quality Assessment and Interpretation **OR**PSSC 4804, Principles of Crop Production **OR**PSSC 4813, Soil Fertility **OR**~~PSSC 4853, Soil and Water Conservation~~ | ~~3~~ **6-7** |
| TECH 3803, Electrical Systems | 3 |
| ~~TECH 3863, Industrial Safety~~ | ~~3~~ |
| ~~TECH 4813, Operations Systems Research~~ | ~~3~~ |
| Upper-level electives in **AGEC,** AGST, AGRI, PSSC. | ~~3~~ **8-9** |
| **Sub-total** | **58** |
| **Total Required Hours:** | **120** |

*The bulletin can be accessed at* [*https://www.astate.edu/a/registrar/students/bulletins/*](https://www.astate.edu/a/registrar/students/bulletins/)

118

…

From pg. 125

…

**~~Minor in Spatial Technologies and Geographic Information Systems~~
Minor in Precision Agriculture**

|  |  |
| --- | --- |
| **Required Courses:**Students must maintain a minimum GPA of 3.0 and a grade of at least a “C” for each course in the minor. | **Sem. Hrs.** |
| AGST 3503, ~~Agricultural Spatial Technologies I~~ Geospatial Data Applications | 3 |
| ~~AGST 3513, Agricultural Spatial Technologies II~~ | ~~3~~ |
| AGST 3543, Fundamentals of GIS/GPS | 3 |
| AGST 4003, Modern Irrigation Systems | 3 |
| ~~AGST 4013, Precision Application Technology~~***AGST 4022, Irrigation Technology Tools*** | ~~3~~***2*** |
| AGST 4543, Advanced ~~GIS for Agriculture and Natural Resources~~ Geographic Information Systems | 3 |
| *Select one of the following:****AGST 4501, Agricultural Decision Analysis*** **OR*****AGST 4511, Unmanned Aircraft Systems*** | ***1*** |
| AGST 4773, Remote Sensing | 3 |
| **Total Required Hours:** | **18** |

…

*The bulletin can be accessed at* [*https://www.astate.edu/a/registrar/students/bulletins/*](https://www.astate.edu/a/registrar/students/bulletins/)

125

Pg 430

…

**Agricultural Education (AGED)**

**AGED 1403. Basic Agricultural Mechanics** Introduction to basic wood and metal working tools and equipment used in most mechanics laboratories. Instruction focuses on safety, project design, tool and equipment use. Spring.

**AGED 1411. Introduction to Agricultural and Extension Education** Philosophy, aims, and objectives of agricultural and extension education. Explanation of programs, career opportunities, and qualifications in agricultural and extension education. Fall, even.

**AGED 1441. Introduction to Forestry** Emphasis on tree identification, instruments and equipment, tree disease and disorders, forest product uses, timber stand improvement, general principles of forest management, map and compass reading, and pulp and sawlog volume estima- tion. Spring, even.

**AGED 2433. Principles of Agricultural Power Electricity and Internal Combustion Engines** Agricultural power includes electricity and internal combustion engines. Electricity includes systems, devices, motors, installation and service. Internal combustion power includes small engine repair and maintenance. Prerequisite, AGED 1403. Spring, odd.

**AGED 2453. Application of Welding Technologies to Agriculture** Principles and practices of various methods of welding technology applied to agriculture. Lecture two hours, laboratory two hours per week. Fall.

**~~AGED 3433. Agricultural Equipment Hydraulic Systems~~** ~~Study of the design, theory of opera- tion, and maintenance of agricultural equipment hydraulic systems. Includes troubleshooting and team solutions to functional system problems. Prerequisites, MATH 1023. Spring.~~

**AGED 3443. Leadership in Agriculture** Principles and practices associated with development of agricultural leaders as individuals or teams from a practical and historical perspective. Develop- ing skills needed to effectively work within agricultural organizations and with individual clientele. Spring, odd.

**AGED 3453. Agricultural Structural Systems** Basic carpentry skills associated with the agricultural environment. Focus of instruction is equipment safety and use, building supplies or materials, skills development in framing, roofing, installation of windows, etc. Two hour lecture and two hour laboratory per week. Fall.

**AGED 4433. Methods of Teaching Agricultural Mechanics** Methods and techniques used to teach and organize the mechanics laboratory. Teaching aids will be emphasized. Lecture two hours, laboratory two hours per week. Prerequisite, AGED 1403. Spring.

**AGED 445V. Practicum in Agricultural Communications** Practicum provides opportunities for students to gain practical experiences in a real working environment with trained professionals in the communications field. Fall, Spring, Summer.

**AGED 4462. Agricultural Youth Organizations** Introduction to the history, purposes, parlia- mentary procedure, and membership and awards structure. Emphasis on leadership development and advisor responsibilities to agricultural youth organizations 4H, FFA. Fall.

*The bulletin can be accessed at* [*https://www.astate.edu/a/registrar/students/bulletins/*](https://www.astate.edu/a/registrar/students/bulletins/)

430

From pg. 432

…

# Agricultural Systems Technology (AGST)

**~~AGST 1003. Modern Agricultural Systems~~** ~~Multidisciplinary introduction to various crop and animal production systems, system interactions, problems, and solutions that lead to a sustainable agricultural productivity. Fall, Spring~~.

**AGST 2003. Intro to Agricultural Systems Technology** Introduction to physical concepts relevant to different agricultural systems: applied mechanics, agricultural equipment technology, agricultural power trains and machinery management, efficiency and precision. Prerequisites: CS 1013 or CIT 1503, ENG 1013, MATH 1023 or higher. Fall.

**AGST 3503. ~~Agriculture Spatial Technologies I~~**Geospatial Data Applications Basic understanding and utilization of ~~data collection and assessment using global position system receivers, direct and remote sensing, and geographic information system software related to crop production and nutrient management.~~software applications to manage geospatial and tabular data, including text editors, spreadsheets, databases and geodatabases for data: collection, cleaning, joining, filtering, summarization, visualization and unit conversion. Prerequisite: AGST 2003, PSSC 2813. Fall, Spring.

**~~AGST 3513. Agriculture Spatial Technologies II~~** ~~The course will concentrate on a study of the electromagnetic properties of earth objects, vegetation, soils, water, and, the principles and operations of different sensors used to measure this energy. Prerequisite, AGST 3503.~~

**AGST 3543. Fundamentals of GIS/GPS**~~Fundamentals of GPS-Global Positioning System and GIS-Geographical Information System concepts, equipment, and software used in agricultural, environmental, and natural resource applications~~ Geospatial data acquisition, mapping, and interpretation for human-environment interactions using geographic information systems and the global positioning system. Prerequisites: COMS 1203, ENG 1013, MATH 1023 or higher; Prerequisite or corequisite: AGEC 3013 or AGST 3503 or BIO 3023. Fall, Spring.

**AGST 4003. Modern Irrigation Systems** Methods, equipment, current issues and future directions of irrigation, irrigation design and scheduling, drainage systems, irrigation measurements, performance evaluation, and impact on productive and sustainable agriculture. Two hours lecture and two hours lab weekly. Dual listed with AGST 5003. Prerequisites: AGST 2003; PSSC 2813. Spring.

**~~AGST 4013. Precision Application Technology~~** ~~Techniques of soil and crop homogeneity de- tection and variable-rate precision application of crop inputs to increase productivity and enhance environmental sustainability. 2 hours lecture and 2 hours lab weekly. Dual listed with AGST 501~~**~~V~~**~~3.~~ ~~Spring~~**~~.~~**

***AGST 4022. Irrigation Technology Tools***  *Technical tools and software related to irrigation system hydraulic design and management. Dual listed with AGST 5022. Prerequisites: AGST 3543, AGST 4003. Fall.*

***AGST 4501. Agricultural Decision Analysis*** *Hands-on experience with cloud/desktop software, spatial algorithms and image processing of georeferenced data obtained from diverse sources, such as human scouts, ground and equipment sensors, and unmanned aerial systems. Dual listed with AGST 5501. Prerequisite: AGST 3543 with a grade of B or better. Fall.*

***AGST 4511. Umanned Aircraft Systems*** *Software and mobile applications for designing flight missions, collecting data, and analyzing/interpreting imagery for agricultural practices. Intended to prepare students for the Federal Aviation Administration (FAA) remote pilot license exam. Dual listed with AGST 5511. Prerequisites: AGST 3543, AGST 4773. Fall.*

**AGST 4543. Advanced Geographic Information Systems ~~GIS for Agriculture and Natural Resources~~** ~~Principles and advanced techniques of using Geographic Information System (GIS) concepts, equipment, and software used in agricultural, environmental, and natural resource applications.~~Methods, concepts, software, analysis and modeling of geospatial data using raster and vector data models for human-environment interactions using geographic information systems (GIS). Prerequisite, AGST 3543 with a grade of B or better. Spring.

**AGST 4773. Remote Sensing** ~~The course will cover the image acquisition and image processing methods using ERDAS Image software as the analytical assessment package.~~Passive and active means of aerial and satellite image acquisition, processing, analysis, and interpretation for research and decision making in agricultural, environmental, and natural resource applications. Prerequisite, AGST 3543 with a grade of B or better. Fall.

**AGST 4843~~3513~~. ~~Agriculture Spatial Technologies II~~ Agricultural Systems Technology Capstone** ~~The course will concentrate on a study of the electromagnetic properties of earth objects, vegetation, soils, water, and, the principles and operations of different sensors used to measure this energy.~~ Design of modern geospatial solutions for problems related to agriculture, the environment, and natural resources. Restricted to Agricultural Studies majors. Prerequisites: AGST 3503, AGST 4543, AGST 4773 Spring.

***AGST 489V. Special Problems in Agricultural Systems Technology*** *Individualized instruction and/or projects for advanced students. Approval of instructor. Fall, Spring, Summer.*

…

432