Code # AG01 (2014)

**Bulletin Change Transmittal Form**

**Undergraduate Curriculum Council** - Print 1 copy for signatures and save 1 electronic copy.

**Graduate Council** - Print 1 copy for signatures and send 1 electronic copy to [mmcginnis@astate.edu](mailto:mmcginnis@astate.edu)

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| **Bulletin Change** Please attach a copy of all catalogue pages requiring editorial changes. |

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| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date… **Department Curriculum Committee Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **COPE Chair (if applicable)** |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date… **Department Chair:** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **General Education Committee Chair (If applicable)** |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date… **College Curriculum Committee Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Undergraduate Curriculum Council Chair** |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date… **College Dean** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Graduate Curriculum Committee Chair** |
|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Vice Chancellor for Academic Affairs** |

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

D. Keith Morris, [kmorris@astate.edu](mailto:kmorris@astate.edu), 870-972 3468

**2.Proposed Change**

Change Prefix of PSSC 3503 to AST 3503;

PCCS 3513 to AST 3513

PSSC 4543 to AST 4543,

AGRI 3543 to AST 3543,

AGRI 4773 to AST 4773.

Create Agricultural Systems Technologies course listings in Courses Listed for Bulletin.

Eliminate the prerequisite for AST 4773 because PSSC 3503 was required by the previous instructor and no longer applies.

**3.Effective Date**

Spring 2015

**4.Justification**

Change course prefixes from AGRI and PSSC to AST that relate to a new emphasis area in Agricultural Systems Technology (approved 2013-14and the change in prefix for the existing courses better reflects the emphasis area.

**From the most current electronic version of the bulletin, copy all bulletin pages that this proposal affects and paste it to the end of this proposal.**

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**Major in Agricultural Studies**

**Bachelor of Science in Agriculture**

**Emphasis in Agricultural Systems Technology**

A complete 8-semester degree plan is available at http://registrar.astate.edu/.

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| **University Requirements:** | |
| See University General Requirements for Baccalaureate degrees (p. 41) | |
| **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. 84)  **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*  *COMS 1203, Oral Communication (Required Departmental Gen. Ed. Option)* | **35** |
| **College of Agriculture Core Courses:** | **Sem. Hrs.** |
| (See Beginning of Agriculture Section) | **18** |
| **Major Requirements:** | **Sem. Hrs.** |
| PSSC 3503, Agriculture Spatial Technologies I | 3 |
| **Emphasis Area (Agricultural Systems Technology):** | **Sem. Hrs** |
| AGEC 3003, Agricultural Marketing **OR**  AGEC 3013, Agricultural Records **OR**  AGEC 3063, Agricultural Sales and Service | 3 |
| AGED 3433, Agricultural Equipment Hydraulic Systems | 3 |
| **AST** ~~AGRI~~ 3543, Fundamentals of GIS/GPS | 3 |
| AGRI 4223, Agriculture and the Environment | 3 |
| **AST** ~~AGRI~~ 4773, Remote Sensing | 3 |
| CHEM 1043, Fundamental Concepts of Chemistry | 3 |
| MATH 1033, Plane Trigonometry | 3 |
| PHYS 2064. General Physics II | 4 |
| PSSC 3323, Weeds and Weed Control | 3 |
| **AST ~~PSSC~~** 3513, Agricultural Spatial Technologies II | 3 |
| **AST ~~PSSC~~**, Advanced GIS for Agriculture and Natural Resources | 3 |
| PSSC 4713, Soil Quality Assessment and Interpretation **OR**  PSSC 4853, Soil and Water Conservation | 3 |
| TECH 2453, Solid Works I | 3 |
| TECH 2863, Principles of Technology | 3 |
| TECH 3803, Electrical Systems | 3 |
| TECH 3863, Industrial Safety | 3 |
| TECH 4813, Operations Systems Research | 3 |
| TECH 4883, Work Center Management | 3 |
| Upper-level electives in PSSC | 3 |
| Upper-level electives in TECH | 3 |
| **Sub-total** | **61** |
| **Total Required Hours:** | **120**  **Page 110** |

**Major in Plant and Soil Science**

**Bachelor of Science in Agriculture**

**Emphasis in Agronomy**

A complete 8-semester degree plan is available at http://registrar.astate.edu/.

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| AGEC 3013, Agricultural Records **OR**  CIT 1503, Microcomputer Applications | 3 |
| AGRI 2213, Genetic Improvement of Plants and Animals | 3 |
| AGRI 4223, Agriculture and the Environment | 3 |
| BIO 3303 **AND** 3301, General Entomology and Laboratory **OR**  BIO 3313 **AND** 3311, Economic Entomology and Laboratory | 4 |
| PSSC 3313, Plant Disease Management | 3 |
| PSSC 2811, Soils Laboratory | 1 |
| PSSC 1301, Plant Science Laboratory | 1 |
| PSSC 4313, Plant Growth and Development | 3 |
| **Sub-total** | **21** |
| **Emphasis Area (Agronomy):** | **Sem. Hrs.** |
| **AST** ~~AGRI~~ 3543, Fundamentals of GIS | 3 |
| CHEM 1052, Fundamentals Concepts of Chemistry II | 2 |
| PSSC 3323, Weeds and Weed Control | 3 |
| **AST ~~PSSC~~**, Agricultural Spatial Technologies | 3 |
| PSSC 4813, Soil Fertility | 3 |
| PSSC or HORT electives, or BIO 1503, Biology of Plants, or related area | 18 |
| **Sub-total** | **32** |
| **Electives:** | **Sem. Hrs.** |
| Electives | **11** |
| **Total Required Hours:** | **120**  **PAGE 115** |

**Agricultural Programs Minors**

**Minor in Spatial Technologies and Geographic Information Systems**

|  |  |
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| **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.** |
| **AST** ~~AGRI~~ 3543, Fundamentals of GIS/GPS | 3 |
| **AST** ~~AGRI~~ 4773, Remote Sensing | 3 |
| **AST ~~PSSC~~** 3503, Agricultural Spatial Technologies I | 3 |
| **AST ~~PSSC~~** 3513, Agricultural Spatial Technologies II | 3 |
| **AST ~~PSSC~~** 4543, Advanced GIS for Agri. & Natural Res. | 3 |
| PSSC 4813, Soil Fertility | 3 |
| **Total Required Hours:** | **18**  **PAGE 119** |

**Major in Agricultural Studies**

**Bachelor of Science in Agriculture**

**Emphasis in Agricultural Systems Technology**

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| CHEM 1043, Fundamental Concepts of Chemistry | 3 |
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| PSSC 4543, Advanced GIS for Agriculture and Natural Resources | 3 |
| PSSC 4713, Soil Quality Assessment and Interpretation **OR**  PSSC 4853, Soil and Water Conservation | 3 |
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**Major in Plant and Soil Science**

**Bachelor of Science in Agriculture**

**Emphasis in Agronomy**

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| CHEM 1052, Fundamentals Concepts of Chemistry II | 2 |
| PSSC 3323, Weeds and Weed Control | 3 |
| PSSC 3503, Agricultural Spatial Technologies | 3 |
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| **AST** ~~AGRI~~ 4773, Remote Sensing | 3 |
| PSSC 3503, Agricultural Spatial Technologies I | 3 |
| PSSC 3513, Agricultural Spatial Technologies II | 3 |
| PSSC 4543, Advanced GIS for Agri. & Natural Res. | 3 |
| PSSC 4813, Soil Fertility | 3 |
| **Total Required Hours:** | **18**  **PAGE 119** |

**Agriculture (AGRI)**

**AGRI 1213. Making Connections in Agriculture** First semester freshman course centered around the skills and knowledge needed to be a successful ASU College of Agriculture student, including academic performance, problem solving, critical thinking, self management, university policies, issues, trends, and disciplines in agriculture. Fall.

**AGRI 2213. Genetic Improvement of Plants and Animals** Introduction to agriculturally important plant and animal traits and the methods used to incorporate these into favorable combinations. Spring.

**AGRI 2243. Feeding the Planet** Emphasizes the historical background, current and future social, political, environmental or economic implications for the use of natural resources for feeding the world population. Demand.

**AGRI 3233. Applied Agricultural Statistics** Collection, tabulation, and analysis of agricultural data, activities of the state and federal crop reporting services. Spring.

**~~AGRI 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. Prerequisite, Math 1023. Fall, Spring.~~

**AGRI 3723. Agricultural Connections, Technical Interpretation and Professional Applica­tions** Exercises to synthesize high quality technical information from multiple sources into different types of professional written and verbal presentations, using problem solving exercises. Analytical skills and interactive discussions are emphasized. Prerequisites, AGRI 1213, AGEC 1003, ANSC 1613, PSSC 1303 and PSSC 2813. Prerequisites or corequisites, AGRI 3233 or ECON 2113 or STAT 3233. Fall, Spring.

**AGRI 420V. Internships in Agriculture** Provides field based experience in private business, industry or public agencies which will enhance knowledge and skills needed for career advance­ment, approval of Internship Committee required. Spring, Fall, Summer.

**AGRI 4223. Agriculture and the Environment** This course will explore the complex and varied interrelationships of agriculture and the environment with the ultimate goal of identifying viable procedures to make agricultural programs more sustainable. Spring.

**AGRI 4523. Applied Modern Biotechnology** An introduction to the principles and the applica­tions of modern Biotechnology with emphasis on the applications of recombinant DNA technology to solve environmental and human health problems. The review of major biotechnology companies and bio-products is also included. Prerequisites, BIOL 2013 and 2011, CHEM 1052, BIOL 3013 and 3011 or AGRI 2213 or CHEM 4243 or related courses approved by the instructor. Dual-listed with AGRI 5523. Fall.

**PAGE 398***The bulletin can be accessed at http://www.astate.edu/a/registrar/students/*

**AGRI 4233. Experimental Agricultural Statistics** Fundamental concepts of experimental and statistical methods as applied to agricultural research. Spring, even.

**AGRI 4433. Organic Agriculture Production** Principles and practices of organic production in plant and animal systems including: certification requirements, soil fertility, crop rotation, variety and breed selection, health management strategies, optimizing yield and quality, nutrition and feeding, ethical issues, processing, storage and marketing. Prerequisites, PSSC 1303 and ANSC 1613, or permission of instructor. Dual-listed with AGRI 5433. Spring, odd.

~~AGRI~~ **~~4773. Remote Sensing~~** ~~The course will cover the image acquisition and image processing methods using ERDAS Image software as the analytical assessment package. Prerequisite,~~ **~~PSSC~~** ~~3503 or permission from Instructor. Fall,.~~

P**AGE 399**

**Agricultural Systems Technology (AST)**

**AST 3503. Agriculture Spatial Technologies I** 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. Prerequisite, PSSC 2813. Fall.

**AST 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, **AST**  3503. Spring.

**AST 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. Prerequisite, Math 1023. Fall, Spring.

**AST 4543. Advanced 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. Prerequisite, **AST** 3543 with a grade of B or better. Spring.

**AST** **4773. Remote Sensing** The course will cover the image acquisition and image processing methods using MuliSpec Image software as the analytical assessment package. Fall.

**PSSC 3313. Plant Disease Management** Introduction to management of plant diseases. Ma­jor concepts include genetic, cultural, and biological controls as related to management of plant systems. Self study course utilizing computer technology, seminars, and laboratory exercises. Prerequisites, PSSC 1303. Spring.

**PSSC 3323. Weeds and Weed Control** Identification and pest management of weeds in agro­nomic, horticultural, and urban systems. Survey of herbicides, their chemistry, toxicology, modes of action, uses, and environmental impact. Lecture two hours and laboratory two hours per week. Prerequisites, CHEM 1013 or CHEM 1043; and PSSC 1303. Spring.

**PSSC 3333. Plant Breeding** History of plant improvement, methods of plant breeding, and the basic application of these methods to various agronomic and horticultural crops. Spring, odd.

**~~PSSC 3503. Agriculture Spatial Technologies I~~** ~~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. Prerequisite, PSSC 2813. Fall.~~

**~~PSSC 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,~~ **~~PSSC~~** ~~3503. Spring.~~

**PSSC 3802. Pasture and Forage Crops** Introduction to important forage and pasture crops in the mid south region. Discussions will include cropping systems, plant growth and develop­ment, physiology, and environmental considerations. Prerequisite, PSSC 1303. Fall, odd.

**PSSC 4313. Plant Growth and Development** Auxins, gibberellins, and various other regulators of plant growth, also phenomena such as flowering and dormancy. Prerequisites, CHEM 1052, HORT 2253 and PSSC 1303. Fall.

**PSSC 4343. Seed Production, Processing and Analysis** Methods of producing quality seeds and seed stocks, processing methods, and techniques of seed analysis and grading. Prerequisite, PSSC 1303. Spring, even. Dual-listed with PSSC 5343.

**PSSC 4513. Plant Biotechnology** Course materials will address the why and how of plant gene transfer plus the issues involved in making those plants part of the agricultural landscape. Dual listed as PSSC 5513. Prerequisite: AGRI 2213 or BIOL 3013 or permission of instructor. Spring.

**~~PSSC 4543. Advanced 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. Prerequisite,~~ **~~AGRI~~** ~~3543 with a grade of B or better. Spring.~~

**PSSC 4713. Soil Quality Assessment and Interpretation** A study of the indicators of soil quality, documentation and measurement of soil quality, interpretations of soil quality, impacts and effects of management of soil quality, and the role of conservation planning in improving soil quality. Pre­requisite, PSSC 2813. Fall, even.

**PSSC 4804. Principles of Crop Production** Introduction to agronomic cropping systems which includes production systems, concepts related to crop selection and genetics, establishment and management of the crop, and harvest management. Environmental issues related to crop produc­tion and sustainability are also evaluated. Prerequisites, PSSC 1303 and PSSC 2813. Spring, Odd.

**PSSC 4813. Soil Fertility** Principles involved in maintaining and increasing fertility of soil. Pre­requisite, PSSC 2813, and CHEM 1013 and CHEM 1011 or CHEM 1043 and CHEM 1041. Spring.

**PSSC 4822. Environmental Factors Affecting Plant Growth** Affect of environmental factors on growth of important crop species. Primary emphasis will be on water utilization, solar irradiance, and temperature on plant development. Methods of measurement of environmental factors will be included. Prerequisites, PSSC 1303. Fall, odd.

**PSSC 4853. Soil and Water Conservation** Properties of soil which affect erosion and water infil­tration, with practical methods of holding water and soil. Dual listed as PSSC 5853. Prerequisite, PSSC 2813. Spring, odd.

**PSSC 489V. Special Problems in Plant and Soil Science** For students of senior standing to work on special problems. Approval of instructor and dean necessary. Fall, Spring, Summer

PAGE 402