

Institutional Effectiveness 2020-2021

Program: Agriculture BS

College and Department: College of Agriculture & Human Ecology - School of Agriculture

Contact: Bruce Greene

Mission:

School of Agriculture's Mission Statement: Our mission is to prepare students for leadership roles in the food, fiber, and natural resource professions by providing state of the art experiential learning through agriculture. The School of Agriculture (SOA) mission statement flows from the TTU Mission Statement "to provide leadership and outstanding programs in . . . agriculture and human ecology, nursing, music, art and interdisciplinary studies." The SOA mission statement additionally supports the TTU Flight Plan to improve the undergraduate experience.

The SOA offers a Bachelor of Science degree in Agriculture focusing on one of 10 concentrations. Those concentrations span across the broad discipline of Agriculture including: Agribusiness Management, Agricultural Communications, Agricultural Education, Agricultural Engineering Technology, Agronomy and Soils, Environmental Agri-science, Animal Science/Pre-Veterinary Science, Horticulture, Nursery & Landscape Management, and Turfgrass Management.

We prepare our students to, upon graduation, enter a multitude of fields in the agricultural industry or to continue their education through graduate school. Previous graduates can be found across Tennessee and the United States in such roles as park rangers, veterinarians, golf course superintendents, government officials, business owners, county agents, conservationists, university professors, military officers, high school teachers, consultants, agricultural product/equipment sales, bankers, farm managers, landscape developers, and the list continues to grow.

The School of Agriculture is blessed with two unique farms. In 1965 the Shipley Farm (300 acres) was acquired and houses the Hyder-Burks Pavilion, horticultural greenhouses, the organic farming operation, sheep, hogs, beef cattle, poultry, varied forage and row crops. Finally, in 2009, the Oakley Farm (1800+ acres) expanded the possibilities for research and teaching with access to 700 plus cows and calves with additional cropland and potential locations for greenhouses and other agricultural enterprises. These facilities are not supported by direct line funding by the state and therefore must pay their own way, however, all facilities are dedicated to the overall educational experience of our students.

Our vision states, "We are the hallmark program of experiential education in agriculture."

Program Goals

PG 1. Increase undergraduate student enrollment.

Exceed student enrollment numbers. The School of Agriculture (SOA) will use a combination of the following to meet this goal: 1) Strive to increase the number of freshmen enrolled each fall; 2) Strive to maintain at least an 90% retention rate Fall-to-Spring and 85% Fall-to-Fall; 3) Increase our presence on community college campuses across TN with the goal of admitting a

minimum of 25-30 students per year; 4) Secure new funds for building a strong, focused recruitment program; and hire a full-time staff member (recruitment specialist) that will be charged with traveling the state and meeting with prospective students, their parents, alumni, etc.

- PG 2. Increase the amount of external funding (local, state and federal levels) and increase interaction of faculty and students so as to increase undergraduate research.

The goal is to have at least as many grant applications as there are faculty members. One of the purposes of the grants are to include undergraduates in the research process. The grants can be URECA, QEP, or other grants offered through national, state, or local organizations.

As a result of undergraduate research, the SOA would like to have at least 15 students present a research poster at the TTU Creative Inquiry Day.

- PG 3. Promote and enhance faculty and staff development to the extent resources permit.

Student Learning Outcomes

- SLO 1. Students will acquire the knowledge and skills to be prepared for employment and to advance in Agricultural careers.

Students will perform at or above the national average on the ACAT.

The School uses a national assessment tool (ACAT) to determine how prepared the students are for industry and graduate school. The main objective of all SOA curriculum is to prepare students for the global workforce and provide the tools necessary to grow as an individual. Therefore, faculty and staff desire to see an increase in ACAT scores each year and to always be above the national average.

Students will participate in internships or field experience.

- SLO 2. Beyond the classroom, students will engage in high quality scholarly and service learning activities designed to enhance leadership and service roles in food, agriculture, and natural resource systems.

SOA students will actively participant and serve in leadership roles in one or more clubs/organizations (e.g. National FFA, 4-H, Omicron Delta Kappa, Delta Gamma Sigma, MANRRS, and many others) - both locally and nationally.

- SLO 3. Students will identify their critical thinking skill levels and problem-solving abilities through a variety of assessments structured to meet the demands of the individual concentrations and develop new strategies to increase their ability to think critically and problem solve.

SOA students will score at or above TTU's student body average on the California Critical Thinking Skills Test (CCTST).

Assessment Methods

PG 1: Enrollment, Retention, Graduation

1. Enrollment, retention, and graduation rates.
2. Monitor recruitment work

PG 2: Encourage external funding and increase student research projects

1. Review of Annual Faculty Reports in the research completed and research pending areas.
2. Monitor number of grants applied for.
3. Monitor number of students participating in the SOA student organizations.
4. Monitor the number of students presenting at the Creative Inquiry day.

PG 3: Promote and enhance faculty and staff development

1. Annual Faculty Reports in participation in research conferences and trainings.
2. Monitor budget increases in available funding to support research related and other professional training opportunities

SLO 1: Prepared for Employment and Advancement in Agricultural Careers

1. Area Concentration Achievement Test (ACAT)

The Area Concentration Achievement Test (ACAT) assessment is administered to all final semester seniors in the SOA. This national assessment is an indication of how well prepared the students are for his or her chosen profession. According to ACAT, scores range from 200-800 with a national average of 500 and a standard deviation of 100. Nationally in any given year, 68% of scores should fall between 400-600. Number of students involved in internships or experiential learning.

2. Number of students involved in internships or experiential learning.
3. Conversations and focus groups with stakeholders (Tennessee Farm Bureau, TN Farmers Coop, TriGreen Implement, Perdue Foods, National Resources Conservation Services, and United States Department of Agriculture).
4. Alumni Survey

The School of Agriculture Alumni Follow-up Survey is requested periodically from a large and varied array of alumni (2020 survey was requested of alumni graduating from 3 to 55 years prior to the end of Spring Semester 2020, and including all concentrations) provides feedback on the college academic experiences of alumni while completing their respective concentrations in the SOA, and the effectiveness of these experiences in the workplace. The last survey was conducted in 2020 and plans are to conduct another survey in 2022.

SLO 2: Leadership and Service

1. Review of student involvement with student organizations, service projects and competitions.
2. Review of faculty involvement with student organizations, service projects and competitions.

SLO 3 - Critical thinking and problem-solving abilities

1. CCTST (California Critical Thinking Skills Test) results

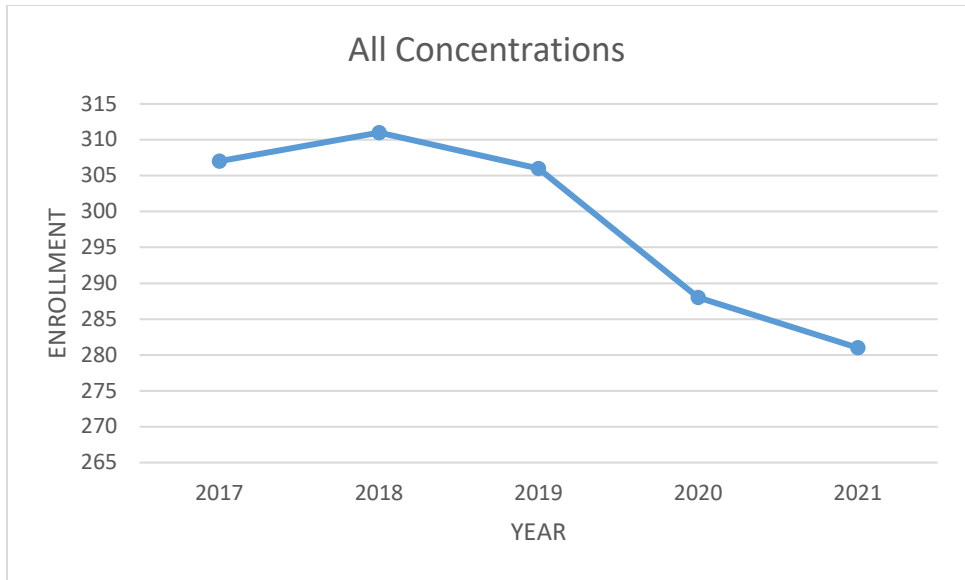
SOA seniors complete this national assessment in their final semester.

SOA students will score at or above TTU's student body average on the California Critical Thinking Skills Test (CCTST).

Results

PG 1: Enrollment, Retention, Graduation

Enrollment Trends in the School of Agriculture						
	YEAR					
Concentration	2017	2018	2019	2020	2021	
All Concentrations	307	311	306	288	281	AVERAGES
Agribusiness Management	84	82	81	73	59	75.8
Agricultural Communication	5	11	8	6	4	6.8
Agricultural Education	18	26	24	22	25	23.0
Agricultural Engineering Technology	45	46	52	46	29	43.6
Agricultural Science and Management	--	--	2	4	11	5.7
Agronomy and Soils	14	8	8	9	7	9.2
Animal Science	42	38	38	36	30	36.8
Animal Science - Pre-Veterinary Science	68	66	57	61	84	67.2
Environmental Agriscience	11	7	7	5	7	7.4
Horticulture	13	16	19	17	17	16.4
Nursery & Landscape Management	2	5	5	6	6	4.8
Turfgrass Management	5	6	5	3	2	4.2



Enrollment in the School of Agriculture continues to decline, but the annual rate of decrease appears to be less between Fall Semester, 2020 and Fall Semester, 2021, relative to the previous year. The College of Agriculture and Human Ecology has increased participation in recruiting events by all faculty members and also initiated several points of personal contact with recruits and admitted students via hand-written postcards and electronic messages. These efforts to increase both numbers of admitted students and actual student yield (Number of new students enrolled relative to number of new students admitted) appear to be helping to slow the decrease in enrollment. The same recruiting methods will be employed in the 2021-2022 academic year in an effort to increase overall enrollment in the Fall Semester of 2022.

School of Agriculture (SOA) retention rates (%)		
Year	Fall-to-Spring	Fall-to-Fall
2019-2020	86.9	71.9
2018-2019	94.10	78.60
2017-2018	91.94	77.42

The normally high retention rate of students in the School of Agriculture declined in the previous academic year. One plausible reason for the decline may be the incidence of the Covid 19 epidemic in the Spring Semester of 2020. There appeared to be a larger proportion of students that did not complete the academic year after the teaching modality was switched to an Online method after the Spring Break. Data will be monitored during subsequent semesters and years to determine whether this event was an outlier or a trend that should be addressed in the program.

School of Agriculture Graduation Results	
Year	Graduates
2020-2021	64
2019-2020	59
2018-2019	71
2017-2018	78

The number of degrees conferred by the School of Agriculture increased over the previous year, but has not increased to levels of previous years. This is likely a reflection of the trend towards a declining enrollment experienced since the 2018 academic year. Efforts to increase enrollment have already been discussed, and are a primary goal of the School of Agriculture.

PG 2: Encourage external funding and increase student research projects

	YEAR	
	2019	2020
Externally Funded Projects Proposed	-	14
Internally Funded Projects Proposed	-	4
Externally Funded Projects Funded	2	3
Internally Funded Projects Funded	3	1
Number of Graduate Students	4	4
Number of Graduate Committees Chaired	6	7
Number of Graduate Committee Memberships	8	5
Number of Undergraduate Students Involved in Research Projects	7	6
Externally Funded Dollars Awarded	\$765,000	\$329,150
Internally Funded Dollars Awarded	\$8,850	\$13,204

Data on numbers of proposed projects were not kept in the 2019 academic year, but will be monitored in subsequent years. Overall assessment of criteria measured would indicate that the School of Agriculture maintained a comparable level of success in this program goal over the past 2 years. External grants were higher in 2019 partially because a grant was received that continues for 2 years, but was recorded in 2019. Activity in scholarly activity was extremely difficult in 2020 because of Covid-19 restrictions on opportunities for meetings and travel.

PG 3: Promote and enhance faculty and staff development

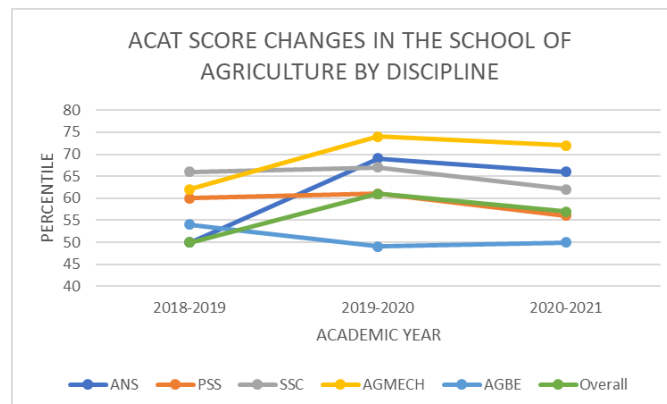
School of Agriculture faculty and staff activities		
	Year	
	2019	2020
Professional Organizations	14	18
Officer in Professional Organizations	4	2
Professional Meetings Attended	17	14
Refereed Conference Papers Published	4	7
Refereed Journal Articles Published	3	2

Faculty members in the School of Agriculture maintained a reasonable level of developmental activities compared to the previous year, given the restrictions on faculty travel and activities resulting from Covid-19. The degree of faculty development activities increased during the summer months of 2021 and are expected to increase in the subsequent academic year. Staff activities have also been hindered during the previous year.

SLO 1: Prepared for Employment and Advancement in Agricultural Careers

Average ACAT Scores for the School of Agriculture						
	Percentiles by Concentration					
Year	ANS	PSS	SSC	AGMECH	AGBE	Overall
2018-2019	50	60	66	62	54	50
2019-2020	69	61	67	74	49	61
2020-2021	66	56	62	72	50	57
Average	62	59	65	69	51	56

Required senior exit ACAT scores which measure the academic competency of our students to national averages indicate that the School of Agriculture is improving the level of basic academic knowledge in respective discipline areas. The trend for most concentrations was toward an increase from 2018-19 to 2019-20 and continuation of that increase in 2020-21, as indicated by the following graph.



The Alumni Follow-up study used in part as an assessment for this goal is conducted every other year, and additional data is not available from that study. The study will be conducted during the 2021-22 academic year and new information will be added to data from last year in the 2021-22 report.

SLO 2: Leadership and Service

Internships in the School of Agriculture				
	Internships		Work Experience	
Year	Courses (n)	Students (n)	Courses (n)	Students (n)
2020-21	14	36	1	1
2019-20	12	27	5	5

The number of internship course or course sections and students enrolled in internship courses increased during the past academic year. Faculty are involved in an effort to increase the number of contacts with potential providers of internships for our students. The faculty recognize the value of internships and work experience for students to develop career goals and to learn to be responsible and productive employees once they graduate from the program.

SLO 3 - Critical thinking and problem-solving abilities

California Critical Thinking Skills Exam Results			
	Year		
Group	2018-2019	2019-2020	2020-2021
School of Agriculture	72	72	70.6
College of Agriculture and Human Ecology	72	72	74.8
TTU Total	76	75	74.4
CCTST Standards	74	74	74

Once again, 2020-2021 graduates in the School of Agriculture fell below the College, University, and national average on the California Critical Thinking Skill Test Scores. The faculty have held a number of group discussions regarding these results last year and will continue to search for ways to improve our students' critical thinking skills.

The past year a new capstone course was implemented for senior students in Agricultural Engineering and Technology in order to provide additional problem solving and critical thinking experiences. Students in the new AGET-4850 course performed at similar levels to other senior students on the CCTST. However, only 6 students were enrolled in the course and completed the CCTST. We will continue to provide the new capstone course and push the capstone experience out to other concentrations.

Modifications for Continuous Improvement

SLO 1: Prepared for Employment and Advancement in Agricultural Careers

The School of Agriculture is in the process of developing a survey tool to use with potential employers of our graduates. The expectation is to complete the survey tool by the end of the Fall Semester (Fall, 2021) and to use it during our spring career fair, February 8, 2022 and with all representatives of companies that schedule interviews with School of Agriculture Students.

Initial list of questions under discussion for the survey:

1. Personal characteristics of a new hire in your company
2. Characteristics lacking in recent college graduates
3. Benefits to study abroad/international experiences at the undergraduate level
4. Required internship for all Agriculture students
5. Experiences required for internships

SLO 3 - Critical thinking and Problem-solving Abilities

Discussions are under way to determine why students graduating in the School of Agriculture are scoring below the college and university averages on the California Critical Thinking Skills Test. Faculty in the School of Agriculture are working with institutional assessment to gain a better understanding of the CCTST sub-scores and how our student performance on other assignments may be correlated with their scores on the CCTST exam. In a general sense, the faculty are trying to incorporate more activities, assignments, and test questions into all courses to help our students improve their critical thinking abilities. The new capstone course initiated in Agricultural Engineering and Technology may also help with this issue. We plan to push the capstone experience out to other concentrations.

Appendices

1. SOA Core Course Map

Appendix 1: SOA Core Course Map

Course No.	Title	Career Readiness	Critical Thinking & Problem Solving	Service Learning	Leadership
AGRN 1100	Plant Sci	x	x		
AGRN 1110	Plant Sci Lab	x	x		
ANS 1200	Intro Animal Sci	x	x		
ANS 1210	Intro Animal Sci Lab	x	x		
AGBE 2100	Economics of Ag	x	x		
AGET 2110	Ag Engineering Tech	x	x		
AGET 2115	Ag Engineering Tech Lab	x	x		
AGHE 1020	Connections in AGHE	x	x	x	x
AGHE 2022	Professionalism	x	x		x
AGHE 3000	Leadership & Service	x	x	x	x
AGHE 3200	Study Abroad	x	x	x	x
AGHE 3275	Research Processes	x	x		
AGHE 4500	Senior Seminar	x	x	x	x