Program Approval

I. General Information

A. Institution Kansas State University

B. Program Identification

Degree Level:	Bachelor
Program Title:	Diversified Agriculture
Degree to be Offered:	Bachelor of Science
Responsible Department or Unit:	College of Agriculture/Dept of Communications and Ag Education
CIP Code:	01.9999
Modality:	On-Campus, Online, Hybrid
Proposed Implementation Date:	Fall 2026

Total Number of Semester Credit Hours for the Degree: 120

II. Clinical Sites: Does this program require the use of Clinical Sites? No

III. Justification

The College of Agriculture is proposing a Bachelor of Science (BS), for a new major in Diversified Agriculture. The BS in Diversified Agriculture will be delivered through Manhattan On-Campus, Manhattan Online, and Olathe Online.

First and foremost, this program will target learners with limited opportunities for bachelor's degrees in agriculture. While some programs exist through distance delivery, they are in specific agriculture fields. The BS in Diversified Agriculture will allow students to deepen their knowledge in a concentration area while developing a foundation in the broad agriculture industry. This program will provide either an on-campus or fully online delivery method for students interested in a degree that provides a comprehensive study of agriculture. Similar opportunities related to agriculture do not exist in the State of Kansas.

This program will include an applied learning experience as either an internship, an experience in their current place of employment, or through other identified applied learning classes. Additionally, students will be required to take a project management course their senior year that will be taught around a project simulation. These two opportunities will allow students to use their knowledge and skills in the workplace and simulated management situations. In addition to these targeted opportunities, many of the classes taught in agriculture include the application of the material.

It is anticipated that the programs will attract new students. The new students will be mostly a previously unserved population. We do not currently serve students who are searching for an agriculture degree with a diverse focus but with a concentration area. This will increase our student population and student-credit-hour generation. Each undergraduate program in the College of Agriculture will see an increase in course enrollment, even from students who are not completing a concentration within that department. Additionally, all undergraduate programs will increase their online presence through distance-delivered courses. Currently, only two programs in the College have significant online course offerings. Each program within the College has offered their support for the programs and most have plans to increase their online presence over the next four years.

The BS also provides opportunity for the K-State Olathe Campus to provide a path for students through Olathe Online. College of Agriculture faculty housed on the Olathe campus will not only be able to develop upper division

online course content in agriculture that students can use to fulfill the concentration area, but they will also have the option to provide some in-person instruction for place bound students in the area. These in-person delivered courses could be an entire class or just the lab component of a course. Students will have the option of completing an entirely online program, or will be able to take some courses or components of courses in-person if they choose to. Current faculty expertise in Urban Food Systems on the Olathe campus will also expand online course offerings for Manhattan on-campus and online students. This model of hybrid instruction may expand to additional opportunities in Western Kansas or elsewhere to meet learner needs as they emerge.

IV. Program Demand

Market Analysis

The industry market analysis report was conducted by the K-State Market Intelligence & Analysis Team. The data in this report is from Lightcast™, a labor market analytics company that curates and maintains comprehensive labor market data sets. The degree completion data are from IPEDS, reported by CIP code. Labor data is from Quarterly Census of Employment Wages from the Bureau of Labor Statistics and Bureau of Economic Analysis. The regions analyzed include: Arkansas, Colorado, Illinois, Iowa, Kansas, Missouri, Nebraska, Oklahoma, and Texas. CIP code(s) used in this report:

- 01.0000 Agriculture, General
- 01.0104 Farm/Farm and Ranch Management
- 01.0601 Applied Horticulture/Horticulture Operations, General
- 01.0609 Public Horticulture
- 01.0610 Urban and Community Horticulture
- 01.0699 Applied Horticulture/Horticulture Business Services, Other
- 01.1103 Horticultural Science

To provide further analysis in food and feed manufacturing, we used five metrics:

- Regional Unique Job Postings (2019-2023)
- Projected Industry Growth (2023-2032)
- Top Ten Job Titles (2023)
- Top Ten Companies by Unique Job Postings (2023)
- Example Job Postings with Company, Location, and Salary Information (2023)

In the review of agriculture degrees (IPEDS), there has been a 21% decrease for ***distance offered programs*** in completions over the past ten years. The decrease is based on Agriculture CIP Code (01.0000) for Bachelor's degree completions within the nine-state region between 2012-2021. (Note: There is an increase for all programs in this CIP code of 22.5%.) In contrast, there is a projected growth of 8.9% in the job market through 2031. In Farm and Ranch Management, there were zero completions online. This area also had a projected job growth of 10% in our nine-state region (Arkansas, Colorado, Illinois, Iowa, Kansas, Missouri, Nebraska, Oklahoma, Texas) through 2031. The two areas of the largest projected growth were animal breeders and supervisors of farming, fishing, and forestry workers. Finally, horticulture has had a large growth in completions over the past five years (90.6%). The majority of the completions were in face-to-face programs. Most occupations in the horticulture area are projected to grow through 2031. Two of the top ten occupations that are projected to grow the most through 2027 are within the horticulture occupation.

The overall increase in jobs in related occupations in the nine-state region is 7.8% (Figure 1). The projected number of jobs in related occupations in the nine-state region (7.8%) is referring to five-year projections (2021-2026) of the twenty-two related occupations reviewed in this report (see below). When all three related areas – agriculture, horticulture, and farm and ranch management - are considered, all but one of the twenty-two related occupations is projected to have growth through 2027.

- Animal Breeders

- Food Scientists and Technologists
- First-Line Supervisors of Farming, Fishing, and Forestry Workers
- Natural Sciences Managers
- Agricultural Equipment Operators
- Life, Physical, and Social Science Technicians, All Other
- Landscaping and Groundskeeping Workers
- Farmers, Ranchers, and Other Agricultural Managers
- Tree Trimmers and Pruners
- First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers
- Pesticide Handlers, Sprayers, and Applicators, Vegetation
- Farmworkers and Laborers, Crop, Nursery, and Greenhouse
- Agricultural Technicians
- All Related Occupations
- Farm Labor Contractors
- Soil and Plant Scientists
- Farmworkers, Farm, Ranch, and Aquacultural Animals
- Farm and Home Management Educators
- Animal Scientists
- Agricultural Inspectors
- Graders and Sorters, Agricultural Products
- Buyers and Purchasing Agents
- Floral Designers

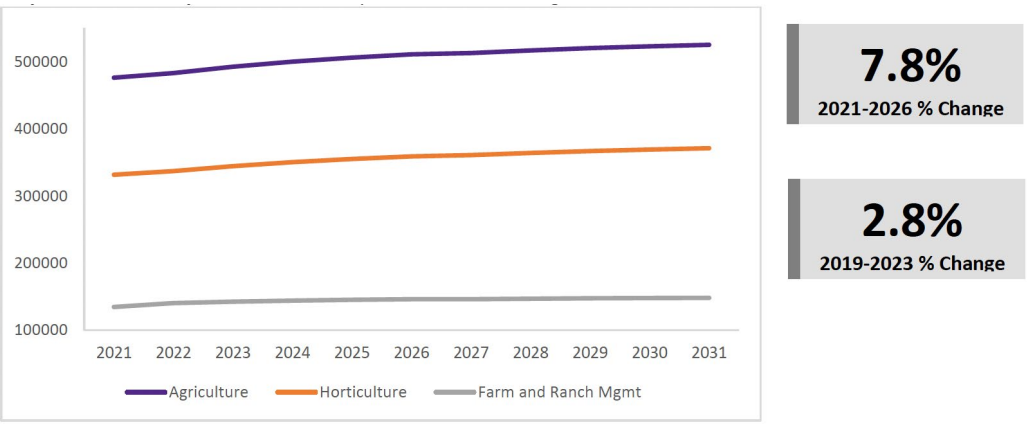

Figure 1; Project Number of Jobs in Related Occupations (Agriculture, Horticulture, and Farm and Ranch Management) within the nine-state region

The number of educational programs in the nine-state region has decreased over the past decade. However, from 2018 to 2022, job postings in these areas increased by 71% (Figure 2). Kansas is not one of the top three states for the number of postings, but it is the number one state by percentage of increase in job postings at 111.8%. This equates to almost 22,000 related job postings in Kansas in 2018 to 2022. This more than doubling shows the need within the state that we serve.

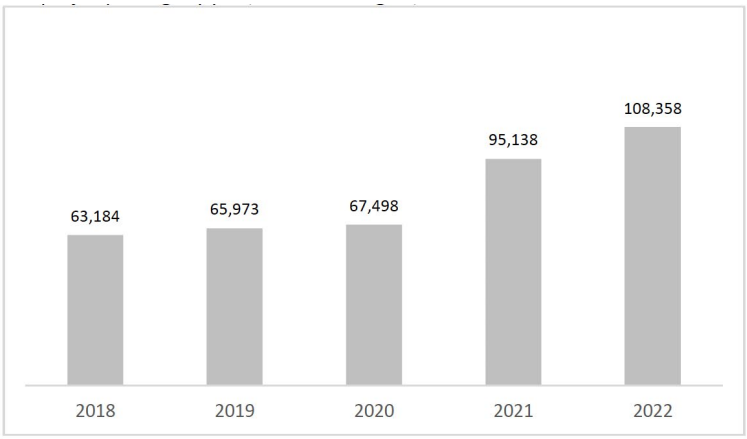

Figure 2: Unique job postings for related occupations by year within the nine-state region, 2018-2022

When looking at specific In-Demand Specialized Skills, five of the top ten are management-related. This directly relates to the communication, non-formal education, and business built into the foundation of each degree.

Illinois State, Iowa State and Tarleton State have the largest market share. Thirty-three institutions in the region report having completions in 2021 for a bachelor's degree in at least one of the three related areas (i.e., agriculture, horticulture, and farm and ranch management); only four institutions report distance-offered completions: Texas A&M University-Commerce, University of Nebraska-Lincoln, Missouri State University, and Colorado State University. For distance offered bachelor's degree programs, using all 7 CIP codes listed above, Fort Hays State University did have completions in 2020 (N=35), but none in 2021.

V. Projected Enrollment for the Initial Three Years of the Program

Year	Total Headcount Per Year		Total Sem Credit Hrs Per Year	
	Full- Time	Part- Time	Full- Time	Part- Time
Implementation	5	10	135	90
Year 2	15	25	435	225
Year 3	35	55	990	475

VI. Employment

Data from the K-State Market Intelligence & Analysis team using Lightcast Analyst tool determined the current employment opportunities for Unique Job Postings within a 9-state region from 2018-2023. The nine-state region included: Arkansas, Colorado, Illinois, Iowa, Kansas, Missouri, Nebraska, Oklahoma, Texas.

While creating comprehensive employment projections for a program with a high amount of flexibility may be challenging, an analysis was conducted using Agriculture, General; Farm/Farm and Ranch Management; Applied Horticulture/Horticulture Operations, General; Public Horticulture; Urban and Community Horticulture; Applied Horticulture/Horticulture Business Services, Other; Horticulture Science. Occupation projections in each area, or part of each area, are projected to increase.

- Agriculture occupations are projected to grow by 10% through 2031.
- Farm and Ranch Management occupations are projected to grow by 10% through 2031.
- Horticulture occupations are projected to grow by 12% through 2031.

From 2018 to 2022 job postings in related occupations increased by 71.5%. Most of the posted jobs were in Texas, Illinois, and Colorado. When the percent of change was reviewed, Kansas had the greatest increase with 111.8%,

followed by Nebraska at 104.1% and Arkansas at 99.3%. While it is difficult to create an analysis for all options of the degree, the segments studied show promising and growing opportunities with completers.

VII. Admission and Curriculum

A. Admission Criteria

No unique admission criteria for this program.

B. Curriculum

Year 1: Fall **SCH = Semester Credit Hours**

Course #	Course Name	SCH
CORE 2	K-State CORE 2 - Communication - Select 1 course from the list (i.e. COMM 106 - Public Speaking I)	3
CORE 4	K-State CORE 4 - Natural & Physical Sciences - Select 1 course, with lab, from the list (i.e. AGRON 120 & 121, HORT 201 (also meets Ag Foundation Req)	4
CORE 3	K-State CORE 3 - Mathematics & Statistics - Select 1 course from the list (i.e. STAT 225 - Intro to Statistics)	3
AGED 101	Foundations of Diversified Ag	1
Ag Foundations Course (CORE 7)	An intro course in Agriculture Foundations from list (CORE 7)	3
	TOTAL CREDITS	14

Year 1: Spring

Course #	Course Name	SCH
CORE 1	K-State CORE 1 – English - Select 1 course from the list (i.e. ENGL 100 - Expository Writing I)	3
CORE 6	K-State CORE 6 - Arts & Humanities - Select 1 course from the list	3
Natural/ Physical Science Elective	One additional course from K-State CORE Req #4 (e.g., BIOL 101, 198, CHEM 110 & 111)	4
Ag Foundations Course/ CORE 5	An intro course in Agriculture Foundations from list (AGEC 120; will meet req CORE 5)	3
Bus, Econ, Mgmt, Leadership Elective	Any course in the list (e.g., MANGT 220)	3
	TOTAL CREDITS	16

Year 2: Fall

Course #	Course Name	SCH
CORE 1	K-State CORE 1 – English - Select 1 course from the list (i.e. ENGL 200)	3
Ag Elective Courses	Any courses in agriculture	6

Ag Foundations Course	Intro courses in agriculture foundations from list	2
Bus, Econ, Mgmt, Leadership Elective	Any course in list	3
	TOTAL CREDITS	14

Year 2: Spring

Course #	Course Name	SCH
CORE 5	K-State CORE 5 - Social & Behavioral Science - Select 1 course from the list	3
AGCOM 222/ CORE 6	Agricultural Business Communications (Also meets K-State CORE 6)	3
Ag Elective Courses	Any course in agriculture	6
Ag Foundations Course	An intro course in agriculture from list	2
Free electives		2
	TOTAL CREDITS	16

Year 3: Fall

Course #	Course Name	SCH
AGCOM 300	Careers in Ag Communications	3
Mgmt Elective Course	Departmental List	3
Ag Concentration Course	Course List	3
CORE 7	Elective – CORE 7	3
Free Electives		3
	TOTAL CREDITS	15

Year 3: Spring

Course #	Course Name	SCH
Ag Concentration Courses	Course list (select 1 course that will fulfill the applied learning overlay requirement)	6
Bus, Econ, Mgmt, Leadership Elective, 300+	Any course in the list	3
Free electives		3
	TOTAL CREDITS	15

Year 4: Fall

Course #	Course Name	SCH
AGED 533 or AGED 537		3
Comms/ Ag Ed elective course	Any course in list	3
Ag concentration course	Departmental list	3
Bus, Econ, Mgmt, Leadership Elective, 300+	Any course in the list	3
Free Electives		3
	TOTAL CREDITS	15

Year 4: Spring

Course #	Course Name	SCH
AGED 433	Agricultural Project Management	3
Occupational Health/Safety Elective, 300+	Any ASMS course 300 and above	3
Free Electives		9
	TOTAL CREDITS	15

Total Number of Semester Credit Hours ……. 120

Agriculture Electives (100 – 299 level) - AGCOM, AGEC, AGED, AGRON, AGTEC, ASI, ASMS, ATM, ENSCI, ENTOM, FDSCI, FFM, GENAG, GRSC, HNR, HORT, PMC, UFM, WOEM

See Attachment for additional course listings.

VIII. Core Faculty

Note: * Next to Faculty Name Denotes Director of the Program, if applicable
FTE: 1.0 FTE = Full-Time Equivalency Devoted to Program

Faculty Name	Rank	Highest Degree	Tenure Track Y/N	Academic Area of Specialization	FTE to Proposed Program
Jonathan Ulmer*	Professor	PhD	Y	Agricultural Education	.1
Dan Moser	Professor	PhD	Y	Agriculture Academic Programs and Animal Science	.05
Jason Ellis	Professor	PhD	Y	Agricultural and Natural Resources Communications	.05

Number of graduate assistants assigned to this program ……. .5

IX. Expenditure and Funding Sources

A. EXPENDITURES	First FY	Second FY	Third FY
1. Personnel – Reassigned or Existing Positions			
Faculty	$22,500	$23,175	$23,870
Administrators *(other than instruction time)*	$6,175	$6,360	$6,551
Graduate Assistants			
Support Staff for Administration (*e.g., secretarial*)	$1,250	$1,280	$1,326
Fringe Benefits *(total for all groups)*	$9,875	$10,172	$10,477
Other Personnel Costs			
Total Existing Personnel Costs – Reassigned or Existing	$39,800	$40,987	$42,224
2. Personnel – New Positions			
Faculty	$34,000	$35,020	$72,141
Administrators *(other than instruction time)*			
Graduate Assistants	$10,250	$10,558	$10,874
Support Staff for Administration (*e.g., secretarial*)			
Fringe Benefits *(total for all groups)*	$12,655	$13,035	$25,329
Other Personnel Costs			
Total Existing Personnel Costs – New Positions	$56,905	$58,613	$108,344
3. Start-up Costs - One-Time Expenses			
Library/learning resources			
Equipment/Technology	$2,750		$1,375
Physical Facilities: Construction or Renovation			
Other			
Total Start-up Costs	$2,750		$1,375
4. Operating Costs – Recurring Expenses			
Supplies/Expenses			
Library/learning resources			
Equipment/Technology			
Travel	$375	$375	$750
Other			
Total Operating Costs	$375	$375	$750
GRAND TOTAL COSTS	$99,830	$99,975	$152,693

B. FUNDING SOURCES *(projected as appropriate)*	Current	First FY (New)	Second FY (New)	Third FY (New)
Tuition / State Funds		$33,750	$99,000	$219,750
Student Fees		$4,950	$14,520	$32,230
Other Sources				
GRAND TOTAL FUNDING		$38,700	$113,520	$251,980
C. Projected Surplus/Deficit (+/-) (Grand Total Funding *minus* Grand Total Costs)		($61,130)	$13,545	$99,287

X. Expenditures and Funding Sources Explanations

A. Expenditures

1. Personnel – Reassigned or Existing Positions

Teaching: The new courses or course modalities will require a reassignment of existing teaching responsibility. One course per faculty member (.125 FTE) on an average salary of $90,000. Years two and three assume a 3% salary increase. Administration: The director role will be a reallocation of .1 teaching FTE at an annual salary of $123,000. Years two and three assume a 3% salary increase. Support: Staff time of .05 FTE at a salary of $60,000 will be reallocated to support the program. Years two and three assume a 3% increase.

2. Personnel – New Positions

Additional instructional capacity for core courses for the BS Program is required for Years one and two. Anticipated instructor starting salary is $68,000 with a 3% increase for Year two. A second instructor is proposed for Year three because of increased enrollment, program management needs, and additional advising and recruitment efforts. This salary will be comparable to the first instructor after two years of 3% increases - $72,141.

3. Start-up Costs – One-Time Expenses

Purchase a laptop computer for the shared programs' GTA and a laptop with docking station and monitors for the first instructor in Year one and another laptop with docking station and monitors for the second instructor in Year three.

4. Operating Costs – Recurring Expenses

These budgeted expenses are to provide travel for professional in-state meetings, which also may include recruiting and relationship building with community college and technical college partners.

B. Revenue: Funding Sources

Tuition: calculated based on the enrollment - #students X #credits X $150 (budget blended tuition return to college). Fees: calculated based on the enrollment - #students X #credits X College of Agriculture Student Credit Hour fee ($22/SCH).

C. Projected Surplus/Deficit

The Bachelor of Science is anticipated to be revenue-positive after the second year.

XI. References

Lightcast ™. (n.d.) https://lightcast.io

U.S. Bureau of Labor Statistics. (n.d.) *Quarterly census of employment and wages*. Available from https://www.bls.gov/cew/

U.S. Department of Education, National Center for Education Statistics. (2022) *Integrated Postsecondary Education Data System (IPEDS)*. Available from https://nces.ed.gov/ipeds/datacenter.

Attachment

Ag Foundations Courses

Category	Courses
Plant Science	AGRON 120 & 121; HORT 201 & 202; UFS
Natural Resources	PMC 210, PMC 275, WOEM 350
Agribusiness	AGEC 120
Communications & Ag Education	AGCOM 110, AGED 533
Animal & Food Science	ASI 102, FDSCI 202
Grain Science	GRSC 101, GRSC 150 & 151, GRSC 312
Entomology	ENTOM 101, 120 125, 135, 150, 202, 305, 306
General Agriculture	GENAG 210, 225

Communications & Ag Education Elective List[1]		
Select 6 hours:		
Subject	**Courses**	Cr.
AGCOM 310	Communicating in the Ag Industry	3
AGCOM 345	Application of Layout and Printing Techniques in Ag & Natural Resources	3
AGED 505	Field Experience in Ag Education	1
	AND	
AGED 620	Principles & Philosophy in Agricultural & Career & Technical Education	2
AGED 533	Educating the Public about Agriculture	3
AGED 537	Planning Programs in Extension & Non-Formal Education	3
AGED 790	Teaching Methods in Agriculture	3

Management Requirement[3]:		
Select 1 course:		
Subject	**Courses**	Cr.
AGEC 308	Farm & Ranch Management	3
AGEC 318	Food and Agribusiness Mngt	3
AGEC 470	Cooperative Management	3
ENTRP 340	Business Innovation and the Entrepreneurial Market	3
MANGT 366	Intro to Business Analytics & Information Systems	3
MANGT 421	Intro to Operations & Supply Chain Management	3
MANGT 450	Non-profit Management	3
MANGT 531	Human Resources Mngt	3
Business/Economics/Leadership Electives[4]:		
Select 12 hours, 6 hours must be ≥300 level:		
ACCTG, AGEC, BUS, ECON, ENTRP, FINAN, LEAD, MANGT, MKTG, MIS, PFP, SALES		

Concentration Area[2] – 300 level or above	**15**
Students will select a concentration within the area of agriculture that best aligns with their career goals. Select upper division courses from one prefix: AGCOM, AGEC, AGED, AGRON, ASI, ASMS, ATM, BAE, ENSCI, ENTOM, FDSCI, GRSC, HORT, PMC, UFS, WOEM, (one PLPTH class may be used in the AGRON, HORT, or ENTOM concentration) or 12 hours in Global Food Systems (must include GENAG 325 and 425). A student wishing to have a customized program with more than one prefix used (with the exception of Global Food Systems) will need approval from the program director. Concentration courses must be exclusive to courses in Agriculture (with the exception of BAE, ATM, & ENSCI) unless completing an interdisciplinary certificate, minor, or secondary major which will also need director approval.	

Applied Learning Overlay Course List[5]
Courses can be used to meet other degree requirements
Select 1 course:
AGEC 445, 460 AGED 434, 630 AGCOM 550 AGRON 302, 405 ASI 310, 326, 385, 420, 470, 495, 560, 561, 599, 610, 660 BIOL 695, 698 ENTOM 399, 486 FDSCI 530, 603, 660 GENAG 399 GENBA 375 GRSC 491, 499, 591 HORT 490, 495 LEAD 399, 405 PMC 492, 495 PLPTH 495 WOEM 495, 570