SOUTH DAKOTA BOARD OF REGENTS
ACADEMIC AFFAIRS FORMS

Substantive Program Modification Form

UNIVERSITY:	**SDSU**
CURRENT PROGRAM DEGREE:	**Bachelor of Science (B.S.)**
CURRENT PROGRAM MAJOR/MINOR:	**Agricultural Systems Technology**
CURRENT SPECIALIZATION:	**N/A**
CIP CODE:	**01.0201**
UNIVERSITY DEPARTMENT:	**Agricultural & Biosystems Engineering**
BANNER DEPARTMENT CODE:	**SABG**
UNIVERSITY COLLEGE:	**Agricultural, Food & Environmental Sciences**
BANNER COLLEGE CODE:	**3F**

University Approval
To the Board of Regents and the Executive Director: I certify that I have read this proposal, that I believe it to be accurate, and that it has been evaluated and approved as provided by university policy.

Dennis D. Hedge — 4/3/2023
Vice President of Academic Affairs or President of the University — Date

1. This modification addresses a change in:

☒ Total credits required within the discipline ☒ Total credits of supportive course work
☐ Total credits of elective course work ☐ Total credits required for program
☐ Program name ☐ Existing specialization
☐ CIP Code ☐ Other (explain below)
☐ Modification requiring Board of Regents approval
Must have prior approval from Executive Director or designee

2. Effective date of change: 2023-2024 Academic Year

3. Program Degree Level:
Associate ☐ Bachelor's ☒ Master's ☐ Doctoral ☐

4. Category:
Certificate ☐ Specialization ☐ Minor ☐ Major ☒

5. If a name change is proposed, the change will occur:
☐ On the effective date for all students
☐ On the effective date for students new to the program (enrolled students will graduate from existing program)
Proposed new name:
Reminder: Name changes may require updating related articulation agreements, site approvals, etc.

6. Is the program being modified associated with a current articulation agreement?

Yes ☐ No ☒

a. If yes, will the articulation agreement need to be updated with the partner institution following the approve of the program change? Please explain:

7. Primary Aspects of the Modification:

Existing Curriculum				*Proposed Curriculum (highlight changes)*			
Pref.	**Num.**	**Title**	**Cr. Hrs.**	**Pref.**	**Num.**	**Title**	**Cr. Hrs.**
Systems General Education Requirements			**32**	**Systems General Education Requirements**			**32**
Systems General Education Requirements - Electives			**9**	**Systems General Education Requirements - Electives**			**18**
						SGR #1	3
						SGR #1	3
						SGR #2	3
		SGR #3	3			SGR #3	3
		SGR #4	3			SGR #4	3
		SGR #4	3			SGR #4	3
Systems General Education Requirements - Required			**23**	**Systems General Education Requirements - Required**			**14**
ENGL	101	Composition I (SGR #1)	3	~~ENGL~~	~~101~~	~~Composition I (SGR #1)~~	~~3~~
ENGL	201	Composition II (SGR #1)	3	~~ENGL~~	~~201~~	~~Composition II (SGR #1)~~	~~3~~
CMST	101	Fundamentals of Speech (SGR #2)	3	~~CMST~~	~~101~~	~~Fundamentals of Speech (SGR #2)~~	~~3~~
ECON	202	Principles of Macroeconomics (SGR #3)	3	~~ECON~~	~~202~~	~~Principles of Macroeconomics (SGR #3)~~	~~3~~
				ECON	201	Principles of Microeconomics (SGR #3)	3
MATH	114	College Algebra (SGR #5)	3	MATH	114	College Algebra (SGR #5)	3
PHYS	101	Survey of Physics (SGR #6)	4	PHYS	101	Survey of Physics (SGR #6)	3
PHYS	101L	Survey of Physics Lab (SGR #6)	0	PHYS	101L	Survey of Physics Lab (SGR #6)	1
CHEM OR CHEM	106-106L 112-112L	Chemistry Survey & Lab (SGR #6) (3,1) General Chemistry I & Lab (SGR #6) (3,1)	4	CHEM OR CHEM	106-106L 112-112L	Chemistry Survey & Lab (SGR #6) (3,1) General Chemistry I & Lab (SGR #6) (3,1)	4
College Requirements			**9**	~~**College Requirements**~~			~~**9**~~
Students must complete a minimum of 11 credits from the approved list of Group 1 courses in Agriculture, Food and Environmental Science. Some departments require specific courses from the list, whereas others leave the selection entirely to the student and the advisor.				~~Students must complete a minimum of 11 credits from the approved list of Group 1 courses in Agriculture, Food and Environmental Science. Some departments require specific courses from the list, whereas others leave the selection entirely to the student and the advisor.~~			
AST	333	Soil and Water Mechanics	3	~~AST~~	~~333~~	~~Soil and Water Mechanics~~	~~3~~
AST	333L	Soil and Water Mechanics Lab	0	~~AST~~	~~333L~~	~~Soil and Water Mechanics Lab~~	~~0~~
AST	342	Applied Electricity	3	~~AST~~	~~342~~	~~Applied Electricity~~	~~3~~
AST	342L	Applied Electricity Lab	0	~~AST~~	~~342L~~	~~Applied Electricity Lab~~	~~0~~
PS	103	Crop Production	2	~~PS~~	~~103~~	~~Crop Production~~	~~2~~
PS	103L	Crop Production Lab	1	~~PS~~	~~103L~~	~~Crop Production Lab~~	~~1~~
PS	213	Soils (Major Requirements) (2)	--	~~PS~~	~~213~~	~~Soils (Major Requirements) (2)~~	~~--~~
PS	213	Soils Lab (Major Requirements) (1)	--	~~PS~~	~~213~~	~~Soils Lab (Major Requirements) (1)~~	~~--~~
Major Requirements			**79**	**Major Requirements**			**88**
Major Core			47	Major Core			56
ACCT	210	Principles of Accounting I	3	ACCT	210	Principles of Accounting I	3
AST OR AST	213-213L 313-313L	Ag, Industrial & Outdoor Power & Lab (3,0) Farm Machinery Systems Management & Lab (3,0)	3	AST OR AST	213-213L 313-313L	Ag, Industrial & Outdoor Power & Lab (2,1) Farm Machinery Systems Management & Lab (2,1)	3
AST	119	First Year Seminar	1	AST	119	First Year Seminar	1
AST	273	Microcomputer Applications in Agriculture	3	AST	273	Microcomputer Applications in Agriculture	3
AST	273L	Microcomputer Applications in Agriculture Lab	0	~~AST~~	~~273L~~	~~Microcomputer Applications in Agriculture Lab~~	~~0~~
AST	333	Soil and Water Mechanics (College Requirement)	--	AST	333	Soil and Water Mechanics & Lab	2

Existing Curriculum				*Proposed Curriculum (highlight changes)*			
Pref.	**Num.**	**Title**	**Cr. Hrs.**	**Pref.**	**Num.**	**Title**	**Cr. Hrs.**
AST	333L	Soil and Water Mechanics Lab (College Requirement)	--	AST	333L	Soil and Water Mechanics & Lab	1
AST	342	Applied Electricity (College Requirement)	--	AST	342	Applied Electricity	2
AST	342L	Applied Electricity Lab (College Requirement)	--	AST	342L	Applied Electricity Lab	1
AST	390	Seminar	1	AST	390	Seminar	1
AST	412	Fluid Power Technology	3	AST	412	Fluid Power Technology	2
AST	412L	Fluid Power Technology Lab	0	AST	412L	Fluid Power Technology Lab	1
AST	423	Rural Structures	3	AST	423	Rural Structures	2
AST	423L	Rural Structures Lab	0	AST	423L	Rural Structures Lab	1
AST	426	Technology Applications for Precision Agriculture	3	AST	426	Technology Applications for Precision Agriculture	2
AST	426L	Technology Applications for Precision Agriculture Lab	0	AST	426L	Technology Applications for Precision Agriculture Lab	1
AST	443	Food Processing and Engineering Fundamentals	3	AST	443	Food Processing and Engineering Fundamentals	2
AST	443L	Food Processing and Engineering Fundamentals Lab	0	AST	443L	Food Processing and Engineering Fundamentals Lab	1
AST	463	Agricultural Waste Management	3	AST	463	Agricultural Waste Management	3
AST OR AST OR AST	494 496 497	Internship (1) Field Experience (1) Cooperative Experience (1)	1	AST OR AST OR AST	494 496 497	Internship (1) Field Experience (1) Cooperative Experience (1)	1
BIOL	101	Biology Survey I	2	BIOL	101	Biology Survey I	2
BIOL	101L	Biology Survey I Lab	1	BIOL	101L	Biology Survey I Lab	1
BLAW	350	Legal Environment of Business	3	BLAW	350	Legal Environment of Business	3
GE AND GE OR PRAG	121 123 326	Engineering Design Graphics I (1) Computer Aided Drawing (1) Precision Ag Data Mapping (2)	2	GE AND GE OR PRAG	121 123 326	Engineering Design Graphics I (1) Computer Aided Drawing (1) Precision Ag Data Mapping (2)	2
MATH	120	Trigonometry	3	MATH	120	Trigonometry	3
PRAG	203	Introduction to Precision Agriculture	3	PRAG	203	Introduction to Precision Agriculture	2
PRAG	203L	Introduction to Precision Agriculture Lab	0	PRAG	203L	Introduction to Precision Agriculture Lab	1
PRAG	340	Climate Risk Management with Precision Agriculture	3	PRAG	340	Climate Risk Management with Precision Agriculture	3
PS	103	Crop Production (College Requirement)	--	PS	103	Crop Production	2
PS	103L	Crop Production Lab (College Requirement)	--	PS	103L	Crop Production Lab	1
PS	213	Soils	2	PS	213	Soils	2
PS	213L	Soils Lab	1	PS	213L	Soils Lab	1
Technical Electives			32	Technical Electives			32
		Select 32 credits from the following courses. It is strongly recommended that students choose one of the following emphasis areas.				Select 32 credits from the following courses. It is strongly recommended that students choose one of the following emphasis areas.	
Business Emphasis				Business Emphasis			
ACCT	211	Principles of Accounting II	3	~~ACCT~~	~~211~~	~~Principles of Accounting II~~	~~3~~
AGEC	271	Farm and Ranch Management	3	AGEC	271	Farm and Ranch Management	3
				AGEC/ BLAW	352	Agricultural Law	3

Existing Curriculum				*Proposed Curriculum (highlight changes)*			
Pref.	**Num.**	**Title**	**Cr. Hrs.**	**Pref.**	**Num.**	**Title**	**Cr. Hrs.**
AGEC	354	Agricultural Marketing and Prices	3	AGEC	354	Agricultural Marketing and Prices	3
				AGEC	364	Introduction to Cooperatives	3
				AGEC	371	Agricultural Business Management	3
AGEC	454	Economics of Grain and Livestock Marketing	3	AGEC	454	Economics of Grain and Livestock Marketing	3
				AGEC	471	Advanced Farm & Ranch Management	3
				AGEC	478	Agricultural Finance	3
AGEC	479	Agricultural Policy	3	AGEC	479	Agricultural Policy	3
ECON	201	Principles of Microeconomics	3	~~ECON~~	~~201~~	~~Principles of Microeconomics~~	~~3~~
				MGMT	360	Organization and Management	3
		Any 200 level or above selected from ACCT, AGEC, AS, BADM, BLAW, DSCI, ECON, ENTR, FIN, MKTG, MGMT, PS, STAT	10			Any 200 level or above selected from ACCT, ~~AGEC,~~ AS, BADM, BLAW, DSCI, ECON, ENTR, FIN, MKTG, ~~MGMT,~~ PS, STAT	3
		Science Electives selected from CHEM, PHYS, BIOL, MICR	3			Science Electives selected from CHEM, PHYS, BIOL, MICR	3
Farm Operations Emphasis				Farm Operations Emphasis			
AGEC	271	Farm and Ranch Management	3	AGEC	271	Farm and Ranch Management	3
AGEC	354	Agricultural Marketing and Prices	3	AGEC	354	Ag Marketing and Prices	3
AS OR DS	101-101L 130-130L	Introduction to Animal Science & Lab (3,1) Introduction to Dairy Science & Lab (3,0)	3-4	AS OR DS	101-101L 130-130L	Introduction to Animal Science & Lab (3,1) Introduction to Dairy Science & Lab (2,1)	3-4
PRAG	423	Soil Fertility and Plant Nutrient Management	3	PRAG	423	Soil Fertility and Plant Nutrient Management	3
PS	223	Principles of Plant Pathology & Lab	3	PS	223	Principles of Plant Pathology & Lab	3
PS OR PS	405-405L 407-407L	Insect Biology & Lab (3,0) Insect Pest Management & Lab (2,1)	3	PS OR PS	405-405L 407-407L	Insect Biology & Lab (3,0) Insect Pest Management & Lab (2,1)	3
PS	440-440L	Crop Management with Precision Ag	4	PS	440-440L	Crop Management with Precision Ag	4
		Any 200 level or above selected from AGEC, AST, BADM, ACCT, AS, ECON, PS, ENTR	10-11			Any 200 level or above selected from AGEC, AST, BADM, ACCT, AS, ECON, PS, ENTR	8-9
		Science Electives, Selected from CHEM, PHYS, BIOL, MICR	2			Science Electives, Selected from CHEM, PHYS, BIOL, MICR	3-4
Precision Ag Emphasis				Precision Ag Emphasis			
AST OR AST	213-213L 313-313L	Ag Industrial and Outdoor Power & Lab (3,0) Farm Machinery Systems Management & Lab (3,0)	3	AST OR AST	213-213L 313-313L	Ag Industrial and Outdoor Power & Lab (2,1) Farm Machinery Systems Management & Lab (2,1)	3
CSC	130	Visual Basic Programming	3	CSC	130	Visual Basic Programming	3
ET	210	Introduction to Electronic Systems	4	ET	210	Introduction to Electronic Systems	3
ET	210	Introduction to Electronic Systems Lab	0	ET	210	Introduction to Electronic Systems Lab	1
ET	232	Digital Electronics & Microprocessors	0	ET	232	Digital Electronics & Microprocessors	2
ET	232L	Digital Electronics & Microprocessors Lab	0	ET	232L	Digital Electronics & Microprocessors Lab	1
ET	240	Techniques of Servicing	3	ET	240	Techniques of Servicing	3
GEOG	372	Introduction to GIS	3	GEOG	372	Introduction to GIS	2
GEOG	372L	Introduction to GIS Lab	0	GEOG	372L	Introduction to GIS Lab	1
GEOG	483	UAS Remote Sensing	3	GEOG	483	UAS Remote Sensing	2
GEOG	483L	UAS Remote Sensing Lab	0	GEOG	483L	UAS Remote Sensing Lab	1
PRAG	304	Electrical Diagnostics in Farm Machinery	3	PRAG	304	Electrical Diagnostics in Farm Machinery	2
PRAG	304L	Electrical Diagnostics in Farm Machinery Lab	0	PRAG	304L	Electrical Diagnostics in Farm Machinery Lab	1

Existing Curriculum				*Proposed Curriculum (highlight changes)*			
Pref.	**Num.**	**Title**	**Cr. Hrs.**	**Pref.**	**Num.**	**Title**	**Cr. Hrs.**
PRAG	345	Principles and Implications of Chemical Application Systems	3	PRAG	345	Principles and Implications of Chemical Application Systems	3
PRAG	345L	Principles and Implications of Chemical Application Systems Lab	0	~~PRAG~~	~~345L~~	~~Principles and Implications of Chemical Application Systems Lab~~	~~0~~
PRAG	423	Soil Fertility and Plant Nutrient Management	3	PRAG	423	Soil Fertility and Plant Nutrient Management	3
PRAG	440	Crop Management with Precision Ag	2	PRAG	440	Crop Management with Precision Ag	2
PRAG	440L	Crop Management with Precision Ag Lab	1	PRAG	440L	Crop Management with Precision Ag Lab	1
STAT	281	Introduction to Statistics	3	STAT	281	Introduction to Statistics	3
		Any 300 level or above selected from AST, CSC, ET, GEOG, PHYS, or PS	1			Any 300 level or above selected from AST, CSC, ET, GEOG, PHYS, or PS	1
Processing Emphasis				Processing Emphasis			
ABE	444	Unit Operations of Biological Materials Processing	4	ABE	444	Unit Operations of Biological Materials Processing	3
ABE	444L	Unit Operations of Biological Materials Processing Lab	0	ABE	444L	Unit Operations of Biological Materials Processing Lab	1
AS OR DS	101-101L 130-130L	Introduction to Animal Science & Lab (3,1) Introduction to Dairy Science & Lab (3,0)	3-4	AS OR DS	101-101L 130-130L	Introduction to Animal Science & Lab (3,1) Introduction to Dairy Science & Lab (2,1)	3-4
AS	241	Introduction to Meat Science	3	AS	241	Introduction to Meat Science	2
AS	241L	Introduction to Meat Science Lab	0	AS	241L	Introduction to Meat Science Lab	1
AS	350	Meat Prod Safety/HACCP	3	AS	350	Meat Prod Safety/HACCP	3
DS	321	Dairy Product Processing I	5	DS	321	Dairy Product Processing I	4
DS	321L	Dairy Product Processing I Lab	0	DS	321L	Dairy Product Processing I Lab	1
DS	421	Dairy Plant Management	4	DS	421	Dairy Plant Management	3
DS	421L	Dairy Plant Management Lab	0	DS	421L	Dairy Plant Management Lab	1
MICR	231	General Microbiology	4	MICR	231	General Microbiology	4
MICR	231L	General Microbiology Lab	0	MICR	231L	General Microbiology Lab	0
MICR	311	Food Microbiology	4	MICR	311	Food Microbiology	2
MICR	311L	Food Microbiology Lab	0	MICR	311L	Food Microbiology Lab	2
PS	308	Grain Grading & Lab	1	PS	308	Grain Grading & Lab	1
PS	308L	Grain Grading Lab	1	PS	308L	Grain Grading Lab	1
Electives			**0**	**Electives**			**0**

Summary of Credits in Agricultural Systems Technology (B.S.)			
System General Requirements	32	System General Requirements	32
College Requirements	9	~~College Requirements~~	~~9~~
Major Requirements	79	Major Requirements	88
Electives	0	Electives	0
Total number of hours required for major	111	Total number of hours required for major	102
Total number of hours required for degree	120	Total number of hours required for degree	120

8. Explanation of the Change:

Removed a specific course selection from SGR #1 and SGR #2 to allows students more flexibility in meeting their System General Education requirements.

Departments have updated zero credit lab courses. The credits between the lecture and labs were adjusted to accurately reflect contact time.

The College of Agriculture, Food and Environmental Sciences has eliminated the college requirement to complete 11 credits from the Group 1 list. The courses listed as part of the college requirement have realigned to the major requirements.

In addition, the Business Emphasis coursework has been expanded to give students more in depth exposure to agricultural business principles.