Utah System of Higher Education
New Academic Program Proposal
Cover/Signature Page - Full Template

Institution Submitting Request:	**Snow College**
Proposed Program Title:	**AAS degree in Agricultural Technology/Mechanics** **Certificate of Completion in Agricultural Technology/ Mechanics** **Certificate of Proficiency in Agricultural Technology/ Mechanics**
Sponsoring School, College, or Division:	**Business and Applied Technology**
Sponsoring Academic Department(s) or Unit(s):	**Business**
Classification of Instructional Program Code[1] :	**01.0205 Agricultural Mechanics and Equipment/Machine T**
Min/Max Credit Hours Required of Full Program:	**/ 63**
Proposed Beginning Term[2]:	**Fall 2017**
Institutional Board of Trustees' Approval Date:	

Program Type (check all that apply):

☒ (AAS)	Associate of Applied Science Degree
☐ (AA)	Associate of Arts Degree
☐ (AS)	Associate of Science Degree
☐	Specialized Associate Degree (specify award type[3]:)
	Other (specify award type[3]:
☒	Certificate of Proficiency in Agricultural Technology/Mechanics, Certificate of Completion in Agricultural Technology/Mechanics)
☐ (BA)	Bachelor of Arts Degree
☐ (BS)	Bachelor of Science Degree
☐	Specialized Bachelor Degree (specify award type[3]:)
☐	Other (specify award type[3]:)
☐ (MA)	Master of Arts Degree
☐ (MS)	Master of Science Degree
☐	Specialized Master Degree (specify award type[3]:)
☐	Other (specify award type[3]:)
☐	Doctoral Degree (specify award type[3]:)
☐	K-12 School Personnel Program
☐	Out of Service Area Delivery Program

[1] For CIP code classifications, please see
[2] "Proposed Beginning Term" refers to first term after Regent approval that students may declare this program.
[3] Please indicate award such as APE, BFA, MBA, MEd, EdD, JD

Chief Academic Officer (or Designee) Signature:
I, the Chief Academic Officer or Designee, certify that all required institutional approvals have been obtained prior to submitting this request to the Office of the Commissioner.

Steve Hood _____ Date:

☐ I understand that checking this box constitutes my legal signature.

Utah System of Higher Education
Program Description - Full Template

Section I: The Request

Snow College requests approval to offer the following Associate's degree(s): AAS degree in Agricultural Technology/ Mechanics
Certificate of Completion in Agricultural Technology/Mechanics
Certificate of Proficiency in Agricultural Technology/Mechanics effective Fall 2017. This program was approved by the institutional Board of Trustees on .

Section II: Program Proposal

Program Description

Present a complete, formal program description.

The Agribusiness program is currently designed to prepare students with a sound educational background in agriculture business while striving to meet the needs of a student's goals. The addition of a Certificate of Completion that is stackable into a new AAS in Agricultural Technology/Mechanics will expand the scope and credentials of the Agribusiness department and increase the opportunities for students desiring to be involved in the evolving and expanding agriculture technology industry by allowing them to:

- Return to the family farm/ranch with the ability to better manage it as a business and manage and maintain the farm equipment - the second largest group of assets of farm businesses.
- Discover and develop an entrepreneurial mindset for establishing an agricultural technology and machinery maintenance and repair business.
- Gain employment as an agricultural machinery/technology representative in equipment maintenance, repair, and sales.
- Transfer to a university for a four-year Bachelor of Science degree in Agriculture Mechanics, Agriculture Systems and Technology, or a related agriculture field.
- Major in another discipline but give them the tools to work part-time, own, or be involved in an agriculture business, or own and operate a farm/ranch.

Certificates and Degrees

- *Certificate of Proficiency in Agriculture Technology/Mechanics* - A certificate of proficiency will allow student exposure to basic mechanical and technological classes. Credits toward this certificate will focus on principles and functions of agricultural technology and mechanics and introduce students to career opportunities. (18 credits)
- *One-Year Certificate of Completion in Agriculture Technology/Mechanics* - Students who complete this certificate will acquire knowledge and skills in agricultural technology and mechanics that prepare them for entry-level positions in the workforce or return to successfully run the family farm or start their own business. Students will complete a selected set of agriculture technology and mechanics classes. This program is designed for students to learn operational skills as well as fundamental technological and mechanical applications allowing them to contribute to existing

and startup agribusinesses. (32 credits)

- *AAS in Agriculture Technology/Mechanics*- This degree is designed to provide general education along with the agribusiness and management background needed to successfully be employed by or run a business or begin a business in the agriculture technology/mechanics industry. The degree continues the learning process through agriculture business specific courses including selected business department classes complemented with machinery management and agriculture technology classes. The AAS in Agriculture Technology/Mechanics is stackable on the certificate of proficiency and the one-year certificate offering advanced learning in agribusiness management, GIS and GPS, irrigation and hydrology, cash flow projections and analysis, as well as technology in agriculture giving students an impressive array of agribusiness management skills. Twenty-six credits of Agriculture Business, Business, Natural Resources, and Geology classes are built into the Agriculture Technology/Mechanics AAS curriculum and articulate to USU. (63 credits)

Consistency with Institutional Mission

Explain how the program is consistent with the institution's Regents-approved mission, roles, and goals. Institutional mission and roles may be found at higheredutah.org/policies/policyr312/ .

Snow College's Regent's-approved mission is to, transmit knowledge and skills for career and technical education, customized training for employers and education leading to transfer opportunities at the associate of arts and associated of science degree level as well as offering associate of applied science degrees to improve the quality of life and economic development of the local service area and the state of Utah. Snow College's mission dovetails into the Regent's-approved mission through continuing a tradition of excellence, encouragement of a culture of innovation, and cultivating an atmosphere of engagement to advance students in the achievement of their educational goals. This degree contributes to both the Regent's-approved mission and Snow College's mission by providing, in a very targeted way, educational opportunities for students interested in agriculture technology and mechanics from the six-county area, as well as from throughout the state which will improve the quality of life and provide economic development for the Central Utah Six County Area as well as the state of Utah. A stackable Certificate of Proficiency, Certificate of Completion, and AAS degree in Agriculture Technology/Mechanics extends the fulfillment of Snow College's role as a rural residential two-year college providing students interested in the latest in agriculture technology and mechanics from the six-county area and throughout the state educational opportunities that leads to employment opportunities or further educational opportunities in agriculture technology and mechanics. Agriculture Technology/Mechanics also fits with the Agribusiness Program Prioritization Priorities as identified in Snow College's strategic plan. The AAS in Agriculture Technology/Mechanics will strengthen academic and student connections between Snow College Ephraim and Snow College Richfield, thus expanding Snow College's mission to a larger area of Central Utah.

Agriculture Technology/Mechanics is a natural fit in the Agribusiness program within the Business Department, which is housed in the Business and Applied Technology Division. The addition of the Agriculture Technology/Mechanics degree to the Agribusiness program will not affect existing administrative structures of either the Business Department or the Business and Applied Technology Division.

Section III: Needs Assessment

Program Rationale

Describe the institutional procedures used to arrive at a decision to offer the program. Briefly indicate why such a program should be initiated. State how the institution and the USHE benefit by offering the proposed program.

As the number of registered students interested in agriculture has increased over the last five years, many have expressed interest in and a desire to study agriculture technology and mechanics. Many Snow College Richfield students who are in or contemplating education in Heavy Diesel, Auto or Industrial Technology have expressed interest in Agriculture Technology/Mechanics. Local agricultural businesses have also stated a desire for employee's with basic knowledge and skill in computers, mechanics, management, technology, and agriculture in general. As a result of this expressed interest and with encouragement from Dr. Brian Warnick (PhD) who serves as associate dean for academic programs in the College of Agriculture and Applied Sciences at Utah State University, the Snow College Agribusiness program desires to offer an AAS in Agriculture Technology/Mechanics that will dovetail with USU's BS in Agriculture Systems and Technology degree. Students desiring an AAS in Agriculture Technology/ Mechanics will be provided an ample foundation of technological and mechanical classes mingled with business classes giving them a sound base for successful employment or running their own business. A major goal in the development of this program was to make the AAS in Agriculture Technology/Mechanics a near seamless transfer for Snow College graduates to USU. Completing the AAS Degree with its proposed classes, students will be well prepared for upper division classwork. For those students seeking only a certificate of proficiency or completion, a strong foundation in agriculture technology/mechanics skills will be achieved.

Utah State University's support of Snow's AAS in Agriculture Technology/Mechanics proposal is evidence through the communicated benefit they see within Utah's higher education system for this degree and the benefit that it will be to them as students elect to transfer to USU. This AAS degree will contribute to economic development of central and rural Utah by providing students the training and scholarly skills in basic business, economics, technology, and mechanic's to successfully contribute to rural economies through agricultural businesses, including entrepreneurial business pursuits. In 2015 "The Annual Report of Utah College's Farm/Ranch Management" indicated that the average farm in the report spent $61,793 on repairs, including repairs of machinery, irrigation equipment, and other equipment. If each of the 4,428 farms in the service area spent this amount on repairs, the total cost would be more than $270 million. As a general rule, half the repair costs for farm equipment goes towards parts, and the other half is used for labor. Applying this we can surmise that area farmers spent $135 million for the labor portion of their repairs. Farmers and ranchers could save a significant amount if they, an employee, or family member received training, knowledge, and skills to do much of the work. Conversely the majority of the technical repairs take place in area dealerships and repair centers, of which there are 11 in Snow College's service area.

Labor Market Demand

Provide local, state, and/or national labor market data that speak to the need for this program. Occupational demand, wage, and number of annual openings information may be found at sources such as Utah DWS Occupation Information Data Viewer (jobs.utah.gov/jsp/wi/utalmis/gotoOccinfo.do) and the Occupation Outlook Handbook (www.bls.gov/oco).

Jobs in production agriculture are difficult to quantify. Utah Department of Workforce Services provides thorough data on "non-farm" jobs but very little data is provided for farm and ranch jobs. Many agriculture-related jobs are categorized in retail, manufacturing, processing or service sectors.

Nationally there is more data on the need for agriculture-related graduates with an AAS, AS, BS, or higher

college degree. A national study between Cooperative State Research, Education, and Extension Service of the U.S. Department of Agriculture and Purdue University College of Agriculture (Goecker, Allan D. et al), reported that the agricultural, food, and renewable natural resources sectors of the U.S. economy will generate an estimated 57,900 annual openings for individuals with baccalaureate or higher degrees in food, renewable energy, and environmental specialties between 2015 and 2020. Approximately 57,900 graduates will be needed in Agriculture/Natural Resources, with only 61 percent (35,400 qualified graduates in food, agriculture, renewable natural resources and the environment) will be available each year. The other 39 percent will come from allied disciplines including biological sciences, engineering, health sciences, business, and communication.

Employers have expressed a preference for graduates from colleges of agriculture, veterinary medicine, forestry and natural resources who tend to have stronger interests and more work experiences for careers in food, renewable energy, and the environment than those from allied fields of study. These graduates will likely continue to be preferred by many employers (www.purdue.edu/usda/employment).

National data shows a growing demand for farm equipment mechanics and service technicians. Approximately 13,800 job openings are expected between 2012 and 2022, a projected growth of 10 percent (National Center for O*NET Development 2015). The growth in Utah is projected at 22 percent over the same time period, more than double the national rate, and 50 percent of this growth will take place in the Central Utah region (Utah Department of Workforces Services 2015).

A Utah State University and Utah Department of Agriculture and Food 2010 report, "The Economic Impact of Agriculture on the State of Utah", stated that the ag business supply and service, production and processing sectors of agriculture products accounts for $16.3 billion in total economic output in Utah or 14.8 percent of gross state product. Utah ranks 35th out of 50 states in the total number of farms with 12 million acres in agriculture production for a ranking of the 26th state in the amount of land in farms. It is recognized that agriculture supporting businesses - supply and services - offer a significant number of off-farm job opportunities that are considered to be agriculturally based.

Agriculture, Forestry, Fishing and Hunting Employment and Wages

	2014 Employment	2014 Average Monthly	Dec 2013 to Dec 2014 Percent Change
Agriculture, Forestry, Fishing & Hunting	891	$2,469	2.8%
Crop Production	204	$2,411	-3.4%
Animal Production	610	$2,437	6.6%
Support Activities for Agriculture	76	$2,883	-8.3%
Total area non-farm payroll Jobs	21,410	$2,572	1.8%
Agriculture, Forestry, Fishing & Hunting as percent of total	4.2%	96.0%	

Source: Utah Department of Workforce Services. Data is compiled quarterly; hence the most recent full-year data is available for the previous year and shows the general level of industry employment.

Snow College's rural six-county service area is highly agricultural. More than 16 percent of Utah's farm are located in this region, which contains less than 3 percent of the population (U.S. Census Bureau 2015; USDA Census of Agriculture 2012). Approximately 10.7 percent of the six-county workforce (ages 16 and up) is employed in the agriculture, forestry, fishing, hunting and mining job sectors, compared to 2.1 percent statewide and 1.9 percent nationwide (U.S. Census Bureau, American Community Survey 2013).

In Snow College's Central Utah service area the Utah Department of Workforce Services reports a projected increase of 4.4% in farm equipment mechanics and service technicians jobs from 2014-2024. (http://jobs.utah.gov/jsp/wi/utalmis/oidoreport.do). Conversely, industrial machinery mechanics has a high volume of projected job growth with over 210 annual openings statewide and the central Utah region contributing to the largest number of openings. (http://jobs.utah.gov/jsp/wi/utalmis/oidoreport.do).

The agriculture industry is very large and an important part of our national, state and local economies and our rural heritage. It is very diverse, involving business, sport, entertainment, and recreation. Precision agriculture is a growing industry that can save both time and money for the agricultural community and has created a demand for qualified personnel in all of its related fields including increased opportunities for entrepreneurial businesses. Precision operations using the latest in agriculture technology offer the potential of higher crop yields, more precise application of treatments, early detection of crop health issues, and increased revenues. This in turn provides for not only a healthier economic state in rural communities, but conservation of natural resources as well. Offering an agricultural focused program with a certificate of proficiency, certificate of completion, and an AAS in Agriculture Technology/Mechanics provided in a stackable framework will help fill this demand.

Demand for equipment mechanics and service technicians is expected to go up, with an expected 3,100 new jobs filled by 2018. Sophisticated advancements in technology as well as the use of heavy equipment contributes to the demand for farm equipment mechanics and the skills they can provide. The Bureau of Labor Statistics reported that there would be an increase of 10% from 2012-2022 in agricultural mechanic and technician jobs, as fast as the average for all occupations.

Agriculture Technology/Mechanics Jobs Currently open in the Region

	UDWS local area	UDWS Statewide
Full Time	30	100+
Part Time	20	100+

Current job openings in the area for agricultural mechanics related employment with Utah Department of Workforce Services.

In addition, four of the five Agriculture Technology/Mechanics advisory committee members from equipment and irrigation supply businesses indicate they each typically have 4-6 job openings each year. They would like to fill the openings with employees that have education, particularly education in the latest technology on farm equipment. Irrigation equipment is rapidly becoming more sophisticated, with computer-based technologies that require technical expertise to operate and maintain the equipment. This demand includes pivot irrigation maintenance and operation especially employees trained in Variable Rate Irrigation technology as to increase the efficiency of water use in irrigation systems.

Student Demand

Provide evidence of student interest and demand that supports potential program enrollment. Use Appendix D to project five years' enrollments and graduates. Note: If the proposed program is an expansion of an existing program, present several years enrollment trends by headcount and/or by student credit hours that justify expansion.

With the introduction of the Pathways program throughout high schools in the State of Utah, and in particular the Agriculture Systems and Technology pathway, student demand has been increasing with requests about an Agriculture Technology/Mechanics degree. High School CTE directors have been

asking for an increased opportunity for these students to engage in mechanical and technological programs and possible concurrent enrollment in college courses. Currently there are numerous high school students, as well as teachers and advisors who have inquired about an AAS in Agriculture Technology/Mechanics. Many of these students would not normally pursue higher education without such course offerings. These offerings include general education classes so if they choose to pursue a BS degree they will not be set back more than a couple of classes. Additional agriculture students at Snow College will increase the number of students in business classes as well as GE classes across campus.

The Agribusiness growth trends over the past five years have been exponential. It is anticipated that Agriculture Technology/Mechanics program will bring an additional 18-20 students each year. Snow College's Institutional Research Office and AGBS class roles provided data for the following table.

Students declaring Agribusiness as their chosen major (declared fall during fall semester)	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
	6	15	29	44	95	115
Class Enrollment						
AGBS 1010 (offered Fall)	22	27	37	37	56	56
AGBS 1100 (offered Fall)	18	19	31	31	38	36
AGBS 2020 (offered Spring)	21	19	13	19	51**	
AGBS 2030 (offered Spring)	9	12	15	18	24**	
AGBS 2400 (offered Spring)		12	17	11		
AGBS 1700 & 1900			30	30	31	29
AGBS 2700 & 2900			30	34	32	
AGBS 2200 and 2205 Lab (offered Fall)	13	9	8	21	19	18
PE 1560 Riding and Horsemanship (offered Spring)	15	14	9	16	8	
Total Head Count Enrollment by Year	98	100	125	219	271	

* Estimated number

** Two Sections for these classes

Similar Programs

Are similar programs offered elsewhere in the USHE, the state, or Intermountain Region? If yes, identify the existing program(s) and cite justifications for why the Regents should approve another program of this type. How does the proposed program differ from or compliment similar program(s)?

Utah State University (USU) offers both a one year certificate and an AAS in Agriculture Machinery and Technology. The one-year certificate program is designed to familiarize students with the agricultural equipment industry with the associate's degree being a second-year continuation of the certificate program. USU's Associate of Applied Science Degree in Agricultural Machinery Technology consists of a minimum of 15 credits of University Studies courses, 30 credits in the major, and 15 credits in business or related elective coursework, for a total of not less than 60 credits. Many students in this program elect to complete their BS degree in Agriculture Systems and Technology with an Agriculture Mechanics emphasis. Most students beginning in the AAS program at USU are from the surrounding region of the Logan campus. Snow College's proposed AAS in Agriculture Technology/Mechanics will be similar to USU's allowing students in Ephraim and surrounding areas an opportunity to stay close to home and

familiarize themselves with the local agriculture community and businesses. This will give students the opportunity and potential of future employment in their local communities. After completion students may elect to transfer to Utah State University to complete their BS in Agriculture Systems and Technology and will have an advantage because of the business classes offered through Snow college to receive a composite major not only in Agricultural Systems and Technology, but Agriculture Business as well.

Collaboration with and Impact on Other USHE Institutions

Indicate if the program will be delivered outside of designated service area; provide justification. Service areas are defined in higheredutah.org/policies/policyr315/ . Assess the impact the new program will have on other USHE institutions. Describe any discussions with other institutions pertaining to this program. Include any collaborative efforts that may have been proposed.

The program will not be delivered outside Snow College's designated service area. Active discussion and collaboration has occurred with Utah State University's College of Agriculture and Applied Sciences and the faculty who teach Agriculture Machinery and Technology in the School of Agricultural Systems and Technology Education to make Snow College's proposed AAS degree transition into Utah State University's BS in Agriculture Systems and Technology with little difficulty. In fact, Dr. Brian Warnick (PhD) associate dean for academic programs in the College of Agriculture and Applied Sciences, has encouraged students seeking transfer from Snow College to USU to complete as many course as possible before transferring. Thus freeing up time and allowing students quicker progression through the program. Snow College's Agriculture Technology/ Mechanics degree will provide Utah State University with students that otherwise they might not recruit. Students who desire a Baccalaureate Degree in Agriculture Systems and Technology will have a connected and articulated pathway to Utah State University's Agricultural Systems and Technology Education program. Utah State University is supporting and encouraging Snow College's movement to create an AAS in Agriculture Technology/Mechanics. Snow College's AAS degree will have a strong academic business base allowing students desiring a BS in Agriculture Systems and Technology the ability to add general education classes and not significantly increase their time spent at USU.

External Review and Accreditation

Indicate whether external consultants or, for a career and technical education program, program advisory committee were involved in the development of the proposed program. List the members of the external consultants or advisory committee and briefly describe their activities. If the program will seek special professional accreditation, project anticipated costs and a date for accreditation review.

There were no external consultants involved in this proposal. Snow College's Business Division advisory committee met in September 2015, January 2016, and October 2016 and expressed their support for the AAS in Agriculture Mechanics degree in the Agribusiness program. The Business Advisory Committee includes: Malcom Nash (Sevier County Economic Development Director), Dennis Larson (retired banking finance and business), Nathan Costa (Richfield High School Counselor), Rusty Bastian (President of Redmond Minerals), Ilene Rollo (consultant and retired President of Utah Heritage Credit Union), Leonard Blackham (retired Moroni Feed Company and Commissioner Utah Department of Agriculture and Food), Kevin Christensen (Sanpete County Economic Development Director), Rosemary Bowden (Intermountain Health Care Regional Director), and David Parish (President of D. J. Management). The committee recognizes the need and demand for this proposed offering in Snow College's service area and that it is in alignment with Snow College's Strategic Plan for agriculture education and economic development in central Utah. The Agriculture Technology/Mechanic purposes are harmonious with both Agribusiness

and Farm/Ranch Management classes in the Agribusiness Program. Currently there is no plan to seek any special professional accreditation.

Section IV: Program Details

Graduation Standards and Number of Credits

Provide graduation standards. Provide justification if number of credit or clock hours exceeds credit limit for this program type described in R401-3.11, which can be found at higheredutah.org/policies/R401.

Graduation standards will be equivalent to the current standards for the AAS in Agribusiness, which requires 63 credit hours. Specifically, of those credit hours required 12 will be GE, 21 Required Support Credits, 29-31 Emphasis Area Credits, bringing the total to 63-65.

Admission Requirements

List admission requirements specific to the proposed program.

All interested students will be admitted to the program as they apply for Snow College.

Curriculum and Degree Map

Use the tables in Appendix A to provide a list of courses and Appendix B to provide a program Degree Map, also referred to as a graduation plan.

Section V: Institution, Faculty, and Staff Support

Institutional Readiness

How do existing administrative structures support the proposed program? Identify new organizational structures that may be needed to deliver the program. Will the proposed program impact the delivery of undergraduate and/or lower-division education? If yes, how?

Agriculture Technology/Mechanics is a natural fit in the Agribusiness program within the Business Department, which is housed in the Business and Applied Technology Division. Adding Agriculture Technology/Mechanics to the Agribusiness program will not affect existing administrative structures of either the Business Department or the Business and Applied Technology Division. Successful relationships with other academic divisions and with other departments within our division provide a balanced opportunity for student success in agriculture technology and mechanics. Many classes will be in conjunction with classes that are already taking place on Snow College's Richfield and Ephraim campus's. Five new classes will be added: Farm Machinery Maintenance and Repair, Small Engine Power Systems, Chemicals and Applications, Irrigation Systems Equipment Maintenance and Repair, and Drones in Agriculture and Associated Computer Applications. Grant funding has been received through two different sources to fund additional resources required for this additional coursework, and provide for needed equipment.

Snow College administration encouraged the Ag Business program to seek funding through the National Science Foundation ATE (NSF-ATE) grant opportunities for launching Agriculture Technology and Mechanics. In March 2016 Snow College was awarded $198,671 from NSF-ATE specifically to for development and startup of an Agriculture Technology and Mechanics program. In addition the Ag.

Business program in April 2016 applied for and was awarded from Utah Cluster Accelerated Program (UCAP) Department of Work Force Services $133,745 to purchase equipment and develop high school pathways into the Agriculture Technology and Mechanics program.

An Advisory committee is all ready in place to help support and provide industry information and collaboration for instructional material.

Faculty

Describe faculty development activities that will support this program. Will existing faculty/instructions, including teaching/ graduate assistants, be sufficient to instruct the program or will additional faculty be recruited? If needed, provide plans and resources to secure qualified faculty. Use Appendix C to provide detail on faculty profiles and new hires.

One new member to the Farm and Ranch Management program has been hired with funding received through grant work. Ongoing budgeting for this position will be based upon student enrollment in the program. Required faculty development activities will be minimal. Current Snow College faculty from Ag. Business, Business, Natural Resources, and Snow College staff will teach 49 credits in Agriculture Technology and Mechanics AAS degree and certificates. Instruction for the additional 14 credits will be allocated between the current faculty and staff to distribute teaching loads over all the AGBS classes, including classes in Farm/Ranch Management.

Staff

Describe the staff development activities that will support this program. Will existing staff such as administrative, secretarial/ clerical, laboratory aides, advisors, be sufficient to support the program or will additional staff need to be hired? Provide plans and resources to secure qualified staff, as needed.

Staff development activities will not increase beyond what the Agribusiness staff is already doing to stay current in all areas of agriculture. There will not be a need for any additional staff.

Student Advisement

Describe how students in the proposed program will be advised.

Snow College's student success center has been informed of the AAS in Agriculture Technology/ Mechanics degree. Advisors in the student success office will be encouraged and invited to communicate with Agribusiness faculty for program updates and class coordination. Advisors will also be invited to send students to the Agribusiness program for advisement as they currently do for other Agriculture students. Currently the majority of student advising for students after their initial freshman fall semester occurs within the Agribusiness program faculty and staff members.

Library and Information Resources

Describe library resources required to offer the proposed program if any. List new library resources to be acquired.

No new library resources will be required.

Projected Enrollment and Finance

Use Appendix D to provide projected enrollment and information on related operating expenses and funding sources.

Section VI: Program Evaluation

Program Assessment

Identify program goals. Describe the system of assessment to be used to evaluate and develop the program.

Students in Agriculture Technology/Mechanics program should expect to gain an understanding of current technologies, business, physical science, and mechanical principles as they relate to the agriculture industry. Students will gain experience in farm equipment operation and become safety trained through the Utah Farm Bureau safety training program. Students will be able to articulate connections between business principles and production segments within the industry. Students will acquire and demonstrate the communication skills to present ideas and proposals in a logical and accurate way both verbally, in writing, and in presentation format. In-class and out-of-class presentations will provide opportunities to formulate, organize and then demonstrate their perspectives and insights in technological and mechanical agriculture. Students will gain an understanding of both local, regional, and national agriculture business relationships and trends. They will acquire the ability and demonstrate through examinations their ability to recognize strengths and weaknesses of a business based on industry benchmarks and their ability to develop and monitor management plans that can improve the economics of an agricultural business. Students will use current technology to accomplish tasks in an evolving agricultural environment with experiences using spreadsheets, word documents, presentation, accounting,and analysis software. These software applications will be taught within the courses and assessed through demonstration and examination. The software applications will be applied to agricultural business needs and will provide a framework for demonstrating the students ability to apply current technology to the management of the industry.

Student Standards of Performance

List the standards, competencies, and marketable skills students will have achieved at the time of graduation. How and why were these standards and competencies chosen? Include formative and summative assessment measures to be used to determine student learning outcomes.

A student who completes an AAS degree in Agriculture Technology/Mechanics at Snow College should expect to leave with the following outcomes.

<u>Acquire substantive knowledge:</u>

Students will understand the fundamentals of physical science laws and principles, mechanical applications, business management, production, sales, and the relationship of technology in the agriculture industry.

Students will understand that agriculture technology/mechanics encompasses a growing industry in agriculture, and can in turn provide for a healthier economic state in our rural communities, as well as conservation of local natural resources.

Students will understand all aspects of safety when it comes to operation, repair, and maintenance of agricultural equipment. This will include certification through the Utah Farm Bureau safety program.

<u>Communications:</u>

Students will be able to organize and effectively present themselves to prospective employers and

customers using both verbal and written communication.

Students will produce clear, concise, purposeful, and grammatically correct written documents.

Appendix A: Program Curriculum

List all courses, including new courses, to be offered in the proposed program by prefix, number, title, and credit hours (or credit equivalences). Indicate new courses with an X in the appropriate columns. The total number of credit hours should reflect the number of credits required to be awarded the degree.

For variable credits, please enter the minimum value in the table for credit hours. To explain variable credit in detail as well as any additional information, use the narrative box at the end of this appendix.

	Course Number	NEW Course	Course Title	Credit Hours
	General Education Courses (list specific courses if recommended for this program on Degree Map)			
			General Education Credit Hour Sub-Total	
	Required Courses			
+ -	MATH 1030, 1040		or MATH 1050 (any course that meets the MA requirement)	4
+ -	SS or AI		Any class that meets the Social Science or American Institution	3
+ -	Oral Communication		Any class that meets the OC requirement	3
+ -	ENGL 1010		Expository Composition	3
			Choose of the following courses:	
+ -				
+ -				
			Required Course Credit Hour Sub-Total	13
	Elective Courses			
+ -	AGBS 1100		Agriculture Career Exploration	2
+ -	BUS 1020		Computer Technology	3
+ -	GEO 1700		Fundamentals of GPS and GIS	3
+ -	AGTM 1210	X	Small Engines	2
+ -	AGTM 1050	X	Farm Equipment management, maintenance, and repair	3
+ -	AGTM 2500	X	Irrigation Systems, Equipment maintenance, and Repair	3
+ -	AGTM 2600	X	Drones in Agriculture and Associated Computer Applications	3
+ -	DMT 1930/2930		Leadership and Professional Development	2
			Choose of the following courses:	
+ -				
+ -				
			Elective Credit Hour Sub-Total	21
			Core Curriculum Credit Hour Sub-Total	34

Can students complete this degree without emphases? Yes or X No

	Course Number	NEW Course	Course Title	Credit Hours
	Name of Emphasis:		Mechanical Emphasis	
+ -	DMT 1000		Diesel Safety and Basics	1

	Course Number	NEW Course	Course Title	Credit Hours
+ -	DMT 1101/1105		Diesel Engine Repair and Overhaul	5
+ -	MIT 1350		Related Machine Tool	2
+ -	DMT 1600		Electrical and Electronics	5
+ -	BUS 1600		Entrepreneurship Seminar	1
+ -	DMT 1801/1805		Computerized Engine Controls & Fuel	4
+ -	AGBS 2020		Ag Econ/ Agribusiness Management	3
+ -	DMT 2311/2315		Hydraulics and Pneumatics	4
+ -	DMT 2801/2805		Emissions Control Systems	4
			Choose of the following courses:	
+ -				
+ -				
			Emphasis Credit Hour Sub-Total	29
			Total Number of Credits to Complete Program	63
			Remove this emphasis	

	Course Number	NEW Course	Course Title	Credit Hours
	Name of Emphasis:		Technology Emphasis	
+ -	INDM 1050		Industrial Safety	1
+ -	WELD 1020		Shielded Metal Arc Welding	4
+ -	MTT 1110/1125		Intro to Precision Machining	8
+ -	INDM 1500		Industrial Pneumatics	3
+ -	INDM1600		Industrial Electricity	3
+ -	INDM 1620		Industrial Electronics	3
+ -	INDM 1800		Industrial Hydraulics	3
+ -	INDM 1820		Industrial Pumps	3
+ -	INDM 1900		Industrial Controls and PLC	3
+ -				
			Emphasis Credit Hour Sub-Total	31
			Total Number of Credits to Complete Program	65
			Remove this emphasis	

Program Curriculum Narrative

Describe any variable credits. You may also include additional curriculum information.

Course requirements for Certificate of Proficiency in Agriculture Technology/Mechanics as well as the Certificate of Completion are outlined in the Degree Map Section of this document.

Degree Map

Degree maps pertain to undergraduate programs ONLY. Provide a degree map for proposed program. Degree Maps were approved by the State Board of Regents on July 17, 2014 as a degree completion measure. Degree maps or graduation plans are a suggested semester-by-semester class schedule that includes prefix, number, title, and semester hours. For more details see http://higheredutah.org/pdf/agendas/201407/TAB%20A%202014-7-18.pdf (Item #3).

Please cut-and-paste the degree map or manually enter the degree map in the table below.

Certificate of Proficiency in Agriculture Technology/Mechanics

BUS 2200 Business Communication or ENGL 1410 English Mechanics	3
AGTM 1930 Leadership & Professional Dev. I	1
AGTM 2930 Leadership & Professional Dev. II	1
AGTM 1715 Applied Technical Math or MATH 1010 Algebra	4
AGTM 1101/1105 Engine Repair	5
AGTM 1030 Related Welding	3
AGTM 1210 Small Engines	2
Total Number of Credits	19

Certificate Completion in Agriculture Technology/Mechanics

AGTM 1600 Electricity and Electronics	5
AGTM 1301/1305 Diesel Drive trains	6
AGTM 1050 Farm Equip Maintenance & repair	3
Total Number of Credits	33

Agriculture Technology/Mechanics AAS

Mechanical Emphasis

Fall Freshman Year

Class	Credits
AGBS 1100	2
MATH	4
BUS 1600	1
AGTM 1050	3
AGTM 1210	2
GEO 1700	3
Total	15

Spring Freshman Year

Class	Credits
ENG 1010	3
SS or AI	3
OC	3
AGBS 2020	3
AGTM 2500	3
AGTM 2600	3
Total	18

Technology Emphasis

Fall Freshman Year

Class	Credits
AGBS 1100	2
ENG 1010	3
BUS 1020	3
AGTM 1050	3
AGTM 1210	2
GEO 1700	3
Total	16

Spring Freshman Year

Class	Credits
MATH	4
SS or AI	3
OC	3
AGTM 2500	3
AGTM 2600	3
Total	16

Fall Sophomore Year

Class	Credits
DMT 1000	1
DMT 1101/1105	5
DMT 2311/2315	4
DMT 1600	5
DMT 1930	1
Total	16

Spring Sophomore Year

Class	Credits
DMT 1801/1805	4
MTT 1350	2
BUS 1020	3
DMT 2801/2805	4
DMT 2930	1
Total	14

Total number of credits 63

Fall Sophomore Year

Class	Credits
INDM 1050	1
INDM 1600	3
INDM 1620	3
INDM 1800	3
INDM 1820	3
WELD 1020	4
Total	17

Spring Sophomore Year

Class	Credits
INDM 1500	3
INDM 1900	3
MTT 1110	3
MTT 1125	5
Total	14

Total number of credits 63

Appendix C: Current and New Faculty / Staff Information

Part I. Department Faculty / Staff

Identify # of department faculty / staff (headcount) for the year preceding implementation of proposed program.

	# Tenured	# Tenure -Track	# Non -Tenure Track
Faculty: Full Time with Doctorate	0	0	0
Faculty: Part Time with Doctorate	0	0	1
Faculty: Full Time with Masters	0	0	1
Faculty: Part Time with Masters	0	0	0
Faculty: Full Time with Baccalaureate	0	0	2
Faculty: Part Time with Baccalaureate	0	0	0
Teaching / Graduate Assistants			0
Staff: Full Time	0	0	0
Staff: Part Time	0	0	0

Part II. Proposed Program Faculty Profiles

List current faculty within the institution -- with academic qualifications -- to be used in support of the proposed program(s).

	First Name	Last Name	Tenure (T) / Tenure Track (TT) / Other	Degree	Institution where Credential was Earned	Est. % of time faculty member will dedicate to proposed program.	If "Other," describe
Full Time Faculty							
	Jay	Olsen	Other	MS	BYU		
	Kendra	Sagers	Other	BS	USU		
	Matthew	Goble	Other	BS	USU		
Part Time Faculty							
	Chris	Larsen	Other	PhD	CSU		

Part III: New Faculty / Staff Projections for Proposed Program

Indicate the number of faculty / staff to be hired in the first three years of the program, if applicable. Include additional cost for these faculty / staff members in Appendix D.

	# Tenured	# Tenure -Track	# Non -Tenure Track	Academic or Industry Credentials Needed	Est. % of time to be dedicated to proposed program.
Faculty: Full Time with Doctorate					
Faculty: Part Time with Doctorate					
Faculty: Full Time with Masters					
Faculty: Part Time with Masters					
Faculty: Full Time with Baccalaureate					
Faculty: Part Time with Baccalaureate					
Teaching / Graduate Assistants					
Staff: Full Time					
Staff: Part Time					

Appendix D: Projected Program Participation and Finance

Part I.

Project the number of students who will be attracted to the proposed program as well as increased expenses, if any. Include new faculty & staff as described in Appendix C.

Three Year Projection: Program Participation and Department Budget						
	Year Preceding Implementation	New Program				
		Year 1	Year 2	Year 3	Year 4	Year 5
Student Data						
# of Majors in Department	115	130	140	145	150	150
# of Majors in Proposed Program(s)		15	25	30	35	35
# of Graduates from Department	50	60	65	70	75	75
# Graduates in New Program(s)		7	15	20	25	25

Department Financial Data				
	Department Budget			
		Year 1	Year 2	Year 3
Project additional expenses associated with offering new program(s). Account for New Faculty as stated in Appendix C, "Faculty Projections."	Year Preceding Implementation (Base Budget)	Addition to Base Budget for New Program(s)	Addition to Base Budget for New Program(s)	Addition to Base Budget for New Program(s)
EXPENSES – nature of additional costs required for proposed program(s)				
List salary benefits for additional faculty/staff each year the positions will be filled. For example, if hiring faculty in year 2, include expense in years 2 and 3. List one-time operating expenses only in the year expended.				
Personnel (Faculty & Staff Salary & Benefits)		$80,000	$80,000	$80,000
Operating Expenses (equipment, travel, resources)		$178,927	$8,000	$8,000
Other:				
TOTAL PROGRAM EXPENSES		$258,927	$88,000	$88,000
TOTAL EXPENSES	$0	$258,927	$88,000	$88,000
FUNDING – source of funding to cover additional costs generated by proposed program(s)				
Describe internal reallocation using Narrative 1 on the following page. Describe new sources of funding using Narrative 2.				
Internal Reallocation		$21,854	$21,854	$21,854
Appropriation				
Special Legislative Appropriation				
Grants and Contracts		$237,073	$58,146	$58,146
Special Fees				
Tuition				
Differential Tuition (requires Regents approval)				
PROPOSED PROGRAM FUNDING		$258,927	$80,000	$80,000
TOTAL DEPARTMENT FUNDING	$0	$258,927	$80,000	$80,000
Difference				
Funding - Expense	$0	$0	($8,000)	($8,000)

Part II: Expense explanation

Expense Narrative

Describe expenses associated with the proposed program.

No new facilities will be needed. Currently there is a welding shop on Ephraim's west campus that will allow for equipment repair and maintenance projects as well as needed laboratory work. Expenses are all related to necessary equipment purchases. These equipment purchase will be large in the first year but minimal after that. These initial purchased are being funded by a series of grants. UCAP grant funds will provide equipment and supplies and will also help with travel expenses for training and planning meetings. Funds from a three-year National Science Foundation grant will provide the match for UCAP funds.

Part III: Describe funding sources

Revenue Narrative 1

Describe what internal reallocations, if applicable, are available and any impact to existing programs or services.

By being a faculty in the Agribusiness program this person would have 30% of their teaching responsibility in Farm/Ranch Management. Thus qualifying for funding from the continued application for competitive grants through USDA RME and USDA NIFA Benchmarking for up to 30% of salary and fringe.

Revenue Narrative 2

Describe new funding sources and plans to acquire the funds.