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## Educational Policies Committee Program Proposal, College of Agriculture and Applied Sciences, June 15, 2018 - Minor in Unmanned Aerial Systems

Utah State University

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

**Institution Submitting Request:** Utah State University

**Proposed or Current Program Title:** Minor in Unmanned Aerial Systems

**Sponsoring School, College, or Division:** College of Agriculture and Applied Sciences (CAAS)

**Sponsoring Academic Department(s) or Unit(s):** School of Applied Sciences, Technology and Education (ASTE)

**Classification of Instructional Program Code<sup>1</sup> :** 49.0102

**Min/Max Credit Hours Required of Full Program:** 12 / 12

**Proposed Beginning Term<sup>2</sup>:** Fall 2018

**Institutional Board of Trustees' Approval Date:**

<input type="checkbox"/> Certificate of Proficiency	<input type="checkbox"/> Entry-level CTE CP	<input type="checkbox"/> Mid-level CP
<input type="checkbox"/> Certificate of Completion		
<input checked="" type="checkbox"/> Minor		
<input type="checkbox"/> Graduate Certificate		
<input type="checkbox"/> K-12 Endorsement Program		
<input type="checkbox"/> NEW Emphasis for Regent-Approved Program		
<input type="checkbox"/> Out of Service Area Delivery Program		

**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.

Please type your first and last name \_\_\_\_\_ Date:

I understand that checking this box constitutes my legal signature.

<sup>1</sup> For CIP code classifications, please see <http://nces.ed.gov/ipeds/cipcode/Default.aspx?y=55>.

<sup>2</sup> "Proposed Beginning Term" refers to first term after Regent approval that students may declare this program.

**Utah System of Higher Education  
Program Description - Abbreviated Template**

**Section I: The Request**

Utah State University requests approval to offer the following Minor: Minor in Unmanned Aerial Systems effective Fall 2018. This program was approved by the institutional Board of Trustees on .

**Section II: Program Proposal/Needs Assessment**

**Program Description/Rationale**

*Present a brief program description. 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. Provide evidence of student interest and demand that supports potential program enrollment.*

The Federal Aviation Administration (FAA) released the new rules for small Unmanned Aerial Systems (UAS) in August of 2016. This 12-credit minor in UAS (a.k.a drones) brings expertise from the USU's Aviation Technology programs to individuals interested in using this technology commercially. The first course will allow the students to become FAA certified drone pilots, with the knowledge, skills and certification to fly commercially. The first test class in the spring of 2017 (i.e., AV 5910), had over 50 interested students for the 20 slots originally allowed. This was the final decision point for moving forward with this program. The UAS minor will give the students additional experience in design, construction, propulsion, guidance, control, programming and data collection. The first elective is aerial photography, a keen interest for natural resources, landscape architecture, engineering as well as aviation technology majors. There is currently no UAS program in USHE, and nationally only a few universities have an established program. The UAS Minor will serve students wanting to use UAS in their professional fields of training, as well as for noncommercial use.

**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](http://jobs.utah.gov/jsp/wi/utalmis/gotoOccinfo.do)) and the Occupation Outlook Handbook ([www.bls.gov/oco](http://www.bls.gov/oco)).*

Every major news organization predicts a large growth in drone operations and the required jobs will be in the thousands per year. 3 years ago, Embry-Riddle Aeronautical University in Florida started their drone program with 11 students--they now have over 200. Experienced drone pilots can earn upwards of \$100K and the large scale aircraft are \$150K. The cost to become a drone pilot is far less than a commercial pilot (\$1-3,000 versus >\$55,000 on top of tuition). Aggie Air, a USU program involved in UAS for scientific applications, has for than a decade been conducting research, designing and flying incredible drones, but needs certified operators to fly the drones. The proposed UAS minor can help fill their need for certified drone pilots.

**Consistency with Institutional Mission/Impact on Other USHE Institutions**

*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/](http://higheredutah.org/policies/policyr312/). Indicate if the program will be delivered outside of designated service area; provide justification. Service areas are defined in [higheredutah.org/policies/policyr315/](http://higheredutah.org/policies/policyr315/).*

Aggie Air has been flying drones for the water lab, agriculture and other sponsors for over a decade. They are nationally known and are working closely with Aviation Technology to develop this program. This minor will be guided by the mission and roles of the land grant institution. This minor is interdisciplinary and crosses over to many majors in the University. The program will require hands-on labs and will only be initially offered at USU-Logan campus.

**Finances**

*What costs or savings are anticipated in implementing the proposed program? If new funds are required, indicate expected sources of funds. Describe any budgetary impact on other programs or units within the institution.*

For the initial course offering, minimal costs are expected. The existing labs, classrooms and field trips to the outdoors will allow the program to begin. Ideally, the future program would include an indoor 'drone zone' and lab space for students to design, build and test their vehicles, as well as plans to expand to a drone simulator. This program will not affect the other aviation technology programs, but will complement many other programs at USU.

### Section III: Curriculum

#### 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 receive the award. **For NEW Emphases, skip to emphases tables below.**

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

		Course Number	NEW Course	Course Title	Credit Hours
General Education Courses (list specific courses if recommended for this program on Degree Map)					
<b>General Education Credit Hour Sub-Total</b>					
<b>Required Courses</b>					
+	-	AV 3500		Intro to UAS	3
+	-	AV 3510	×	UAS Design, Construction and Maintenance	3
+	-	AV 3520	×	UAS Sensors, Guidance and Control	3
+	-				
+	-				
+	-				
+	-				
+	-				
+	-				
<b>Required Course Credit Hour Sub-Total</b>					9
<b>Elective Courses</b>					
+	-	AV 3550	×	UAS Advanced Design and Construction	3
+	-	AV 3560	×	UAS Aerial Photography	3
+	-	AV 3900		Independent Study	3
+	-				
+	-				
+	-				
+	-				
+	-				
+	-				
<b>Elective Credit Hour Sub-Total</b>					3
<b>Core Curriculum Credit Hour Sub-Total</b>					12

#### Program Curriculum Narrative

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

AV 3900 Independent Study allows students to design a tailored independent study with an instructor. With the 3 core courses, students have only 1 elective required to complete the minor. With the rapidly changing technology of Unmanned Aerial Systems (drones), additional course electives will be created. 4 courses in the minor will encourage many students across the campus to explore the possibilities on how drones can enhance their job prospects, and provide synergy with other majors. Current plans are to offer AV 3500 each semester, with AV 3510 and Av 3560 in the fall, and AV 3520 and AV 350 in the spring. Syllabi have been created for each course and the lessons plans are under development. Current faculty and an adjunct instructor are planned for this first year as the test courses are developed and taught.

**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*