
**SOUTH DAKOTA BOARD OF REGENTS
ACADEMIC AFFAIRS FORMS**

New Baccalaureate Degree Minor

UNIVERSITY:	SDSU
TITLE OF PROPOSED MINOR:	Uncrewed Aircraft Systems
DEGREE(S) IN WHICH MINOR MAY BE EARNED:	Any
EXISTING RELATED MAJORS OR MINORS:	Geographic Information Sciences (B.S., minor,



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The Department of Geography and Geospatial Sciences currently offers undergraduate and

Uncrewed Aircraft Systems (UAS) plays a significant role in the defense, commercial and public sectors. According to Markets and Markets, the drone services market, which is based on the type of service provided, is segmented by industry to include construction and infrastructure, agriculture, utility, oil and gas, mining, defense and law enforcement, mapping, surveying, media and entertainment, scientific research, insurance, aviation, marine, healthcare and social assistance, and transportation, logistics, and warehousing.⁴ The drone services market is expected to grow from \$13.9 billion in 2021 to \$40.7 billion in 2026, an increase of 23.8%.⁵ The FAA forecasts that the commercial drone fleet in the US will increase 1.38 times from 2021 to 2026, an increase of 37.9%.⁶ The FAA also forecasts that between 2021 and 2026 the number of people obtaining a commercial Remote Pilots licenses will increase by over

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These numbers are highlighted to show the overall forecasted growth in the commercial drone fleet in the US and the number of new remote pilots projected over the next five years. This will be reflected in the labor market. The US Department of Labor does not have an occupational code for a drone pilot, however, based on the numbers above there will be a need for employees with skill in UAS technology. While some jobs could require just a drone pilot, most occupations requiring the operation of the technology will be part of an existing job role. For example, workforce areas that anticipate an increase of drone usage include agriculture, construction, emergency management, transportation, energy, and mapping and surveying.⁸ According to the Occupational Information Network (O*NET) - sponsored by the US Department of Labor - from 2018 to 2028 occupations that could employ drone skills in South Dakota such as Precision Agriculture Technicians will increase 14%, Agricultural Engineers 13%, Soil and Plant Scientists 16%, Range Managers 6%, Transportation Inspectors 13%, Property, Real Estate, and Community Association Managers 9%, Emergency Management Directors 10%, Wind Energy Operations Manager 7%, Construction Managers 7%, Surveyors 14%, Cartographers and Photogrammetrists 13%, and Geographic Information Systems Technologists and Technicians 5%.⁹

6. Provide estimated enrollments and completions in the table below and explain the methodology used in developing the estimates.

The estimates below are based on 10% of student enrollment in the Geography (36) and Geographic Information Sciences (25) majors for year 4. The number will increase as Geography, Geographic Information Sciences, and other majors identify the benefit of adding this minor. GEOG 270 Introduction to Small Uncrewed Aircraft Systems has had over 120 students complete the course from the fall of 2020 to the fall of 2022.

⁴ Markets and Markets <https://www.marketsandmarkets.com/ResearchInsight/drone-services-market.asp> (last accessed September 2, 2022).

⁵ Markets and Markets <https://www.marketsandmarkets.com/Market-Reports/unmanned-aerial-vehicles-uav-market-662.html> (last accessed September 2, 2022).

⁶ Federal Aviation Administration. FAA Aerospace Forecast FY 2021-2025. https://www.faa.gov/data_research/aviation/aerospace_forecasts (page 63, last accessed September 13, 2022).

					Fiscal Years*					
					1st	2nd	3rd	4th		
<i>Estimates</i>					FY 24	FY 25	FY 26	FY 27		

Prefix	Number	Course Title	Prerequisites for Course	Credit Hours	New (yes, no)
GEOG	280	Introduction to Remote Sensing	none	3	No
GEOG	372-372L	Introduction to GIS and Lab	none	3	No
GEOG	386	UAS Applications for Emergency Management	none	3	No

9. What are the learning outcomes expected for all students who complete the minor? How will

City Campus, etc.) or deliver the entire program through distance technology (e.g., as an online program)?

