

# Certificate in Unmanned Aerial Systems Science and Applications (Sub-Bacc)-NewDsg-2017-05-22

- The workflow icon is no longer available. Please click on the Page Status after the orange circle icon near the page title. \*

## Form Information

 The page you originally access is the global template version. To access the template document that progresses through the workflow, please complete the following steps:

**First Step:** ONLY change the text in the [brackets] so it looks like this: **CRIM 101 Intro to Criminology-CrsRvs-2015-08-10**

- If DUAL LISTED list BOTH courses in the page title***

**Second Step:** Click “SAVE” on bottom right

- DO NOT TYPE ANYTHING INTO THE FIRST PAGE OTHER THAN THE TEXT IN BRACKETS***
- Please be sure to remove the Brackets while renaming the page***

**Third Step:** Make sure the word ***DRAFT*** is in yellow at the top of the proposal

**Fourth Step:** Click on “**EDIT CONTENTS**” (*not EDIT*) and start completing the template. When exiting or when done, click “**SAVE**” (*not Save Draft*) on bottom right

When ready to submit click on the workflow icon and hit approve. It will then move to the chair as the next step in the workflow.

*\*Indicates a required field*

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<b>Proposing Department/Unit*</b>	Geography & Regional Planning	<b>Contact Phone*</b>	7243572250

<b>(A) Request Type:*</b>	certificate
<b>(B) Minor or Certificate Title:*</b>	Certificate in Unmanned Aerial Systems (UAS) Science and Applications
<b>(C) List number of credits:*</b>	12
<b>(D) If Certificate or Letter, select level:</b>	baccalaureate
<b>(E) Course Level:*</b>	undergraduate-level
<b>(F) Narrative Catalog Description:*</b>	This certificate provides students with foundational knowledge and technical skills in the emerging sector of small Unmanned Aerial Systems (UAS). Students will learn the regulatory environment for UASs in the United States, as well as the basics of UAS design and operation, aeronautics and flight theory, requirements for FAA Part 107 Remote Pilot certification, remote sensing and photogrammetric concepts, mission planning, UAS mission flight techniques, and processing techniques for data deliverables. The certificate is designed to provide students with knowledge, skills, experience and credentials to participate in the expanding UAS sector as a certified FAA Part 107 Remote Pilot, operator, or ancillary ground crew member/observer.

<p><b>(G) List of Program Requirements in</b></p> <p>catalog layout including course numbers, titles, credits and any footnotes.*</p>	<p><i>Note: PASSHE requires a minimum of 6 credits in a minor be advanced standing (300 and above)</i></p> <p><b>Certificate in Unmanned Aerial Systems (UAS) Science and Applications    12</b></p> <p>GEOG 316    Introduction to Geographic Information Systems <i>or</i></p> <p><i>or</i> 425    Global Positioning Systems Concepts and Techniques    3cr</p> <p>GEOG 415    Introduction to Remote Sensing    3cr</p> <p>GEOG 460    Foundations of Unmanned Aerial Systems (UAS)</p> <p>                  Science and Applications    3cr</p> <p>GEOG 463    Unmanned Aerial Systems for Remote Sensing and</p> <p>                  Spatial Data Acquisition    3cr</p>
<p><b>(H) Student Learning Outcomes*</b></p> <p><i>Please be sure to list all Student Learning Outcomes that relate to this Minor or Certificate</i></p>	<ol style="list-style-type: none"> <li>1. Demonstrate knowledge of federal rules and regulations regarding the operations of Unmanned Aerial Systems (UAS) in national airspace and the certification and conduct of UAS pilots in the United States</li> <li>2. Describe basic UAS design and the role of specific components in UAS flight and operation</li> <li>3. Describe basic remote sensing, photogrammetric and geospatial scientific concepts important to UAS data acquisition and processing</li> <li>4. Acquire the necessary knowledge to prepare for the Part 107 Aeronautical Knowledge Test, part of the requirements to obtain pilot certification to fly small UASs (sUAS)</li> <li>5. Apply skills and techniques to safely launch and fly a UAS, plan UAS flight missions, and acquire and process data</li> </ol>
<p><b>Rationale for Proposal</b></p>	
<p><b>(I) Why is this being proposed?*</b></p>	<p>The Certificate in Unmanned Aerial Systems (UAS) Science and Applications is being proposed because of rapidly expanding UAS applications and high forecast sectoral growth and employment demand. Specifically, the implementation of small Unmanned Aerial Systems (sUAS) for expanding commercial applications in the United States, as well as updated Federal Aviation Administration (FAA) regarding sUAS pilot certification (Title 14 of the Federal Code of Regulations, Part 107). In addition, the curricular content of the certificate fits well with the existing geospatial curriculum (remote sensing, geographic information systems (GIS), global positioning systems (GPS)) offered by the Department of Geography &amp; Regional Planning. The certificate will provide IUP students knowledge, experience and credentials to pursue employment and research opportunities in this fast-growing sector.</p>
<p><b>(J) What role, if any, does it serve the College /University above and beyond the role it serves in the department?*</b></p>	<p>Students from across the university who are interested in applying UAS-based data collection techniques to their fields of interest would benefit from pursuing the certificate. The certificate will provide IUP students knowledge, experience and credentials to pursue employment and research opportunities in the fast-growing commercial sUAV sector.</p>

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