



<b>Course Number</b> <b>Course Name</b>	FDMA 129 sUAS (Drone) Tech II
<b>Credit Value</b> <b>(Breakdown of theory and lab credits)</b>	3 T
<b>Catalog Course Description</b>	This course is part one of a two-part six credit hour certificate program in Drone Technology. curriculum includes; pilot operation, FAA Part 107 certification preparation, and commercial deployment of Small Unmanned Aerial Vehicles (sUASs), more commonly known as drones. Topics covered will be Still and Moving Imagery, Surveying, and Mapping.
<b>Student Learning Outcomes/Objectives/Competencies of the Course</b>	By the end of the course, students will: <ul style="list-style-type: none"> <li>• <b>Relevant Laws and Regulations</b> – Students will get an overview of the rules currently governing use of UASs. We will provide resources for understanding these policies as well as context about them. A strong emphasis will be placed on preparation for FAA Part 107 certification exam.</li> <li>• <b>Current Applications of the Technology</b> – We will present scenarios in which sUASs have been used for local research well as other prospective applications of the technology. We will discuss strengths, weaknesses, advantages, and limitations of the quadcopters and related programs we have used so far.</li> <li>• <b>Flight Mechanics</b> – Students will learn the basic flight-related terminology describing the actions of the drone while in mid-air, and the logic behind the parts of the vehicle that cause those actions to take place. Pitch, roll, and yaw will be explained in context of a drone.</li> <li>• <b>Piloting Skills</b> – Students will have the opportunity to practice operating several different sUAVs in controlled environments under the supervision of our two licensed operators. Safety will be our main priority; but we also want students to enjoy and feel comfortable learning how to pilot high-quality small sUAVs.</li> <li>• <b>Creative/Entertainment/Marketing Applications</b> – Through multiple organized creative still and moving image projects. Students will learn to plan and execute image capturing for creative/entertainment (filmmaking), and marketing (Real Estate, Construction) applications.</li> </ul>

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	<ul style="list-style-type: none"> <li>• <b>Mission Planning</b> – Students will become familiar with apps such as Drone Deploy that are used as mission planning software for image collection. They will learn the basics of plotting a path and determining the settings that the drone will use to fly its mission autonomously.</li> <li>• <b>Photogrammetry and Image Processing</b> – Students will learn how to convert images taken using a drone into larger composite orthomosaic images using stitching software.</li> <li>• <b>Project-Based Inquiry</b> – As part of this exploration of knowledge, students will have three small projects over the duration of the course.</li> <li>• <b>Safety</b> – As researchers ourselves, we want to emphasize safe, responsible applications of drone technology in fields where they can be cost-effective, time-saving, and non-invasive. Students will learn how to think critically and responsibly about drone use as regulations are constantly changing and updating over time.</li> </ul>
<p><b>College-Wide Student Learning Outcomes</b></p>	<p>Communication: Students will study the theory of cinema and practice the craft of expression through film. Students will consider varying approaches for varying audiences and purposes. Students will evaluate the effectiveness of their expression and that of others. Expression may be personal or intentionally objective and may be fictional (narrative) or non-fictional (documentary).</p> <p>Critical Thought: Students will evaluate the bias and accuracy of their creations and those of others, mindful that bias is unavoidable and in the case of fictional characters intentional. Students will grapple with project management and teamwork. They will delve into artistic, non-scientific thought yet learn the machinery of film and television.</p> <p>Cultural Sustainability: Students will embrace the power and responsibility of personal expression and learn skills--including respect and empathy--to help others communicate their wants, needs and opinions.</p> <p>Information Competency and Research: To document and interpret the world, students will use current technology such as digital cameras; editing workstations and software; and the basic machinery and technology of filmmaking.</p>

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