Whittier Union HIGH SCHOOL DISTRICT

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NEWS RELEASE

FOR IMMEDIATE RELEASE: April 17, 2023 **CONTACT:** Andrea Garcia **PHONE:** 909-445-1001

Whittier Union Cardinal Academy of Technology Students Receive Hands-on Experience, Prepare for Careers in STEAM

WHITTIER – The 2022-23 school year has seen the long-awaited rollout of Whittier High School's Cardinal Academy of Technology (CAT), a four-year engineering pathway that provides students with a comprehensive overview of science, technology, engineering, art and mathematics (STEAM) concepts and sets them on course for careers in STEAM-related fields.

CAT combines the best of two programs offered in previous years at Whittier High – the Cardinal Computer Academy and the STEM Academy, which centered on computer information technology and engineering – and is updated to provide students with the tools they need to navigate the rapidly expanding STEM job market.

CAT has proven to be very popular in its first year, with 80 freshmen enrolled in the first-year intro class. The pathway was created by Whittier High teachers Daniel Oliver and Steve Swanson, who developed the program and curriculum after seeking student input on what they wanted from a tech-based engineering pathway.

"We wanted to consolidate our curriculum into one program so that it could have the most impact for our students," Swanson said. "We had many cases of students leaving one academy to take a class in the other, sometimes more than once. We thought it would be a great idea to have them guide the pathway. What we discovered after looking at the input is that students prefer hands-on learning and having the same teachers every year."

Whittier High students enrolled in CAT will stay with each other as a cohort, taking the required CAT courses – Intro to Engineering for freshmen, Engineering Design for sophomores, Mechatronics for juniors and the Capstone project for seniors – as well as core classes in English, social studies, science and visual arts.

Whittier High sophomore Andres Gutierrez takes Engineering Design, which focuses on computer-assisted design (CAD) and computer-assisted mechanics (CAM). Gutierrez is fully immersed in learning engineering principles such as planning, drawing, designing, building and coding, but he said that what he appreciates the most about the class is that it spurs his imagination and teaches students to be responsible and resilient.

"After you receive your instruction, you make your design and pray it all works. My favorite thing I've learned in class is how to hold back tears when your coding fails," Gutierrez said. "I really enjoy this academy and I'm incredibly happy to be a part of it. This is the best class for college and career preparation. The teachers, classmates and classrooms are all amazing parts of the CAT community."

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CAT employs a wide variety of technological tools for students, including a computer numerical control (CNC) milling machine, which uses computer programming to cut various materials; laser cutters that cut through acrylic and wood, 3-D printers and a large format banner printer. These tools allow students to put their ideas into practice immediately and see if they will succeed or fail, a key component of engineering education.

“One of the things I really liked as a student was allowing my own creativity to guide my education,” Oliver said. “We want our students to indulge their curiosities and interests in ways that they are truly passionate about, and not hold back. Our goal is to produce independent and critical thinkers who are driving the ship with their own curiosities.”

The CAT curriculum is augmented by field trips to view engineering principles at work, including trips to USC, the California Science Center and the National Hot Rod Association Museum. A freshman trip to Knott’s Berry Farm’s Engineering Day allowed students to get a behind the scenes look at how Knott’s designs its roller coasters and thrill rides.

Senior Capstone projects this school year include a handmade electric guitar made entirely from scratch and a fully working robot modeled after R2D2 from the movie “Star Wars.” For this project, Oliver and Swanson invited an engineer who designs droids for Disney+ TV shows like “The Mandalorian” to mentor the student working on the project.

“The Cardinal Academy of Technology is the perfect pathway for Whittier High students who are looking for careers in engineering and design, or for any student who just wants to learn how to take things apart and put them back together,” Principal Tim Liggett said. “Thank you to Daniel Oliver and Steve Swanson for putting together a program that is truly resonating with our students.”

PHOTO CAPTION

WUHSD_CAT1: A Whittier High School student explores science, technology, engineering, art and mathematics (STEAM) concepts while in the Cardinal Academy of Technology, a four-year engineering pathway that prepares students for careers in STEAM-related fields.

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