

November 2, 2019 - Chico Preview Day

EECE Department
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CHICO STATE

ELECTRICAL & COMPUTER ENGINEERING

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Our Students

- 🐾 94 **BS Computer Engineering** majors
- 🐾 168 **BS Electrical/Electronic Engineering** majors Students from across the US and 10 countries
- 🐾 39 students who are minoring in **Computer Engineering**
- 🐾 Both programs are accredited by the Engineering Accreditation Commission of ABET
- 🐾 **Scholarships and Awards**
 - 41 EECE students (15.8 %) on Dean's List in Spring 2018
 - Our students were awarded 5 College scholarships for the 2018-2019 academic year.
 - Graduating seniors **Matthew Hardenburgh, Andres Marquez, John Chad** and **Michael Doris** received the 2019 EECE Faculty and Chair Awards.

EECE participants in the CSU Chico Design Expo 5.11.2019



STUDENT ACTIVITIES

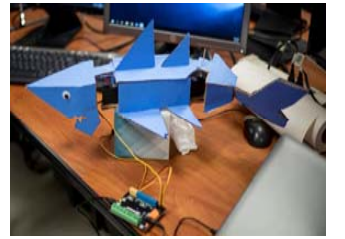
The **CSU Chico IEEE Micromouse Team** does it again! Robert Goldansky and Michael Musick won the *IEEE Region 6 Central Area Micromouse* and the *UCLA All-American Micromouse* competitions in Spring 2019. We are rooting them on as they step up to a new compete next year, the *California Micromouse Competition* at UC San Diego. Robert and Michael are also the president and vice president of our CSU Chico IEEE Student Branch this year.

Our **IEEE Drone Team** plan to compete in the national *Collegiate Drone Racing Championship* in Spring 2020. This will be the first race for the team, which was formed in Fall 2018. Our pilots are rapidly honing their skills as they navigated their drones around Chico – which they design and built themselves.

Keep up with these and the other activities that our IEEE Student Branch has going on by following the link on the EECE Department/Student Organizations webpage.

Eta Kappa Nu (HKN) made huge contributions to the EECE community during the academic year. Members volunteered their time to serve as lab assistants in our lower division classes and as weekend lab monitors, which helped our students enormously as they worked to complete various design projects. **HKN** honor society includes outstanding mechatronic students along with our equally outstanding computer and electrical/electronic engineering students.

The **Society of Women Engineers** hosted their 7th Annual Imagineer Day. Over 250 K-8th graders came to campus for the day-long STEM experience. SWE recruited volunteers from a number of clubs to support this event. The 7th & 8th graders applied their scientific, engineering, and artistic talents to the design of biomimetic robots under the guidance of volunteers from the CSU Chico IEEE student branch. Everyone is looking forward to the next Imagineer Day!



DEPARTMENT UPDATES

New instructional techniques are revolutionizing our EECE laboratories!

First, OCNL 346, the lab classroom where students construct and test digital circuits (EECE 144) and programs for their field-programmable gate arrays (EECE 343) and microcontrollers (EECE 344) has been completely remodeled.

The old lab benches have been replaced with collaborative workstations with integrated power strips. Students now power their circuits via the USB outlets, without the need to be tied to benchtop power supplies. The lab also has a large touch screen display with three auxiliary monitors that can be used by individual students to show off their experimental results to the rest of the class. The increase in student engagement during the lab classes has been phenomenal. A high-resolution webcam will be used when teaching distance learning classes, taping student presentations, and hosting video conferences. The funds for the OCNL 346 remodel were came from a CSU Chico Student Learning Fee proposal, authored by **Dr. Hadil Mustafa**, and with the generous support of the College of Engineering, Computer Science, and Construction Management.



There is new equipment in EECE 144, EECE 211L, and EECE 343 activities and EECE 344 and labs. Students are using some of the world's smallest oscilloscopes, arbitrary function generators, and digital logic analyzers on the market and all of these instruments come in one package. The ADI ADALM2000 and Digilent Analog Discovery II, both of which are operated from students' laptops, are used in EECE 144, 211L and 344.

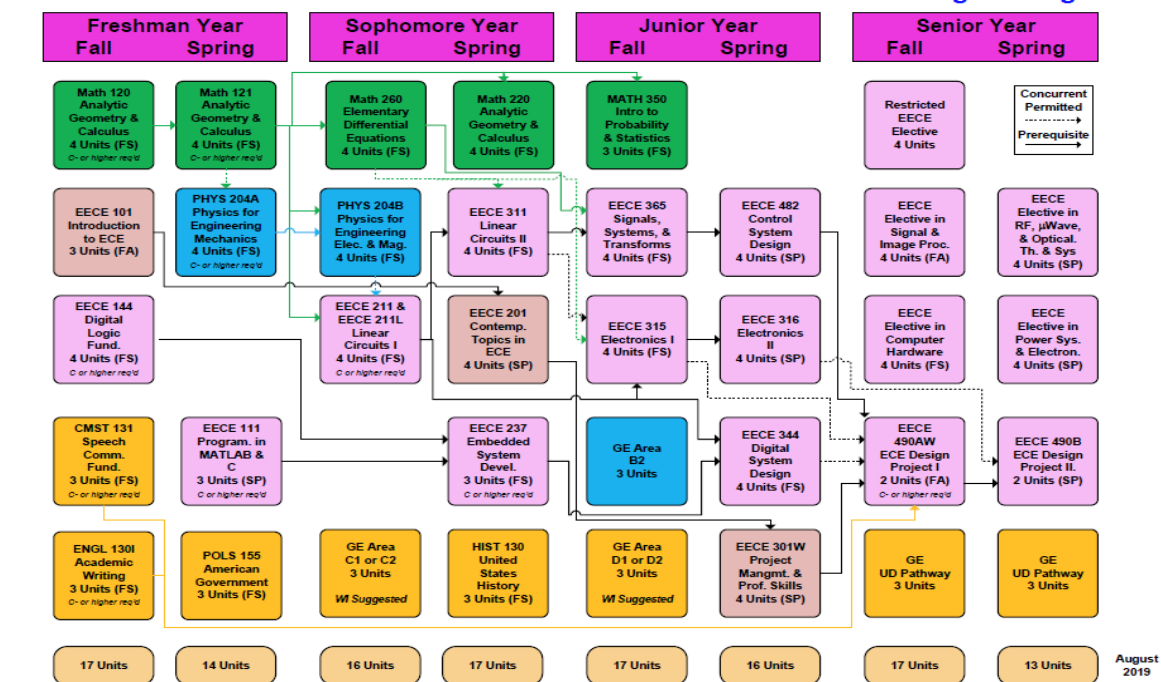


DE2-115 field-programmable gate array (FPGA) boards were purchased over the summer by the EECE and MMEM departments with additional funds supplied by the College of Engineering, Computer Science, and Construction Management.

"I am really happy I did end up at Chico State instead of Cal Poly. I've been able to afford living easily, the program provided is enjoyable, and the college provides a lot of resources to the students. I may be able to finish my bachelor's degree debt free."

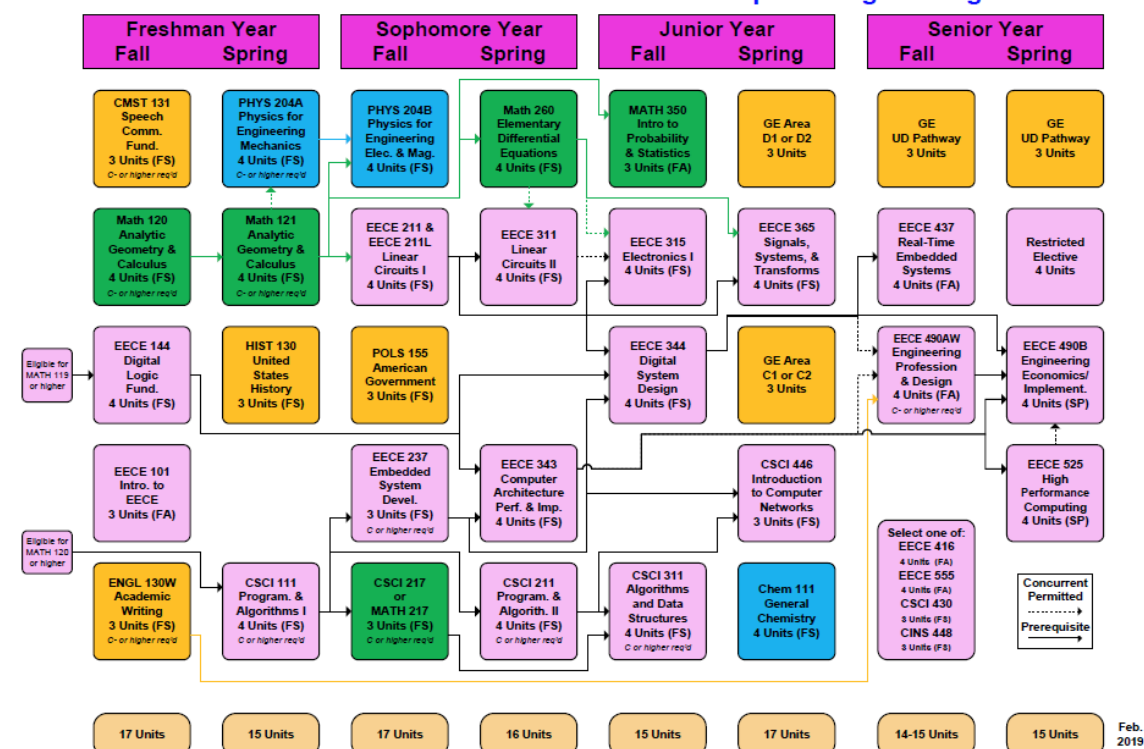
-Randall Fowler, BS Electrical/Electronic Engineering

California State University, Chico Department of Electrical and Computer Engineering 2021/2022 Curriculum BS in Electrical/Electronic Engineering



If you aren't able to attend Chico Preview Day, contact CSU Chico Admissions Office to arrange a tour of the College of Engineering, Computer Science, and Construction Management and a time to talk with an EECE faculty member about studying computer or electrical/electronic engineering. Go to www.csuchico.edu/admissions/tours for more information.

California State University, Chico Department of Electrical and Computer Engineering 2020/2021 Curriculum B.S. in Computer Engineering



"I love the EECE department and its staff. The entire department was welcoming and fostered a place of collaboration and learning that positioned me to excel. I wouldn't be where I am at today without their help and support."

– Josh Kurash, May 2019 graduate who is now employed at Chevron

FACULTY SPOTLIGHT



Congratulations to **Dr. Kurtis Kredo II!** He received the *CSU Chico Outstanding New Project Investigator Award*. Dr. Kredo is the principal investigator on a project "High Speed, Cost Effective Simulation and Design Techniques for PEPDS", funded by the Office of Naval Research (ONR). The project began in December 2018 and will run through December 2022. The goal of the research project is to explore simulation and design techniques for Power Electronic Power Distribution Systems (PEPDS). The results from this project will enable system designers to simulate, design, and implement a system using a single representation of the model or algorithm underdevelopment.

His research collaborators include **Drs. Roy Crosbie, John Zenor, Hadil Mustafa, and Zahrasadat Alavi**. Not shown are Mr. Nick Conant (BS CMPE) and Mr. Konstantin Rebrov (CSCI) who undergraduate researchers on the ONR project. Dr. Kredo also serves as the director of the CSU Chico McLeod Institute of Simulation Sciences.

RESEARCH PROGRESS

EECE faculty have done it again! **Dr. Hassan Salehi** with co-PIs **Dr. Ghang-Ho Lee** and **Dr. Patrick Donnelly** (OSU-Bend) received a NSF Major Research instrumentation (MRI) grant in September 2019. The research team will use the optical computer tomography system and deep learning workstation to advance their research on biomedical sensing, imaging, and analytics and will help catalyze interdisciplinary efforts in healthcare and industrial non-destructive testing. **Dr. Zahrasadat Alavi** and **Dr. Kathleen Meehan** with **Dr. Monica So** (CHEM) are co-PIs on a NSF MRI grant led by **Dr. Ozgul Yasar** (MEM). This grant will fund the purchase of a Raman spectroscopy system, which will enhance the nanomaterials characterization research that is building at CSU Chico.

Dr. Zahra Alavi and **Dr. Hassan Salehi** have each received a CSU Chico Research, Scholarly, and Creative Activities (RSCA) award. Dr. Alavi and two undergraduate research assistants, Mr. Tomas Galvan-Huerta (BS ELEC) and Mr. Jose Johnson (CHEM), are employing Fourier transform infrared (FTIR) spectroscopy to evaluate chemical and quality changes of fresh fruits and vegetables during processing for retail baby food. **Dr. Salehi** is researching applications of a hybrid imaging modality based on optical illumination and ultrasound detection, optical-resolution photoacoustic microscopy (OR-PAM).

Mr. Majd Barchini, (BS ELEC), jumped at an opportunity to join **Dr. Hassan Salehi's** research group shortly after transferring to CSU Chico from Butte College in Spring 2018. He presented the results of his project, "Deep Learning Classification of Optical Coherence Tomography Images for Oral Radiology: Optimization Methods" at the *2019 IEEE MIT Undergraduate Research Technology Conference* in October. Mr. Pouya Zakeri, a Chico High School student who is contributing to **Dr. Salehi's** research projects, also presented his work at the same conference. His poster is entitled "Deep Learning Classifier for Oral Radiology Application: Learning Rate Investigation".



ENGINEERING MATH BOOTCAMP



Dr. Zahrasadat Alavi with four other ECC faculty members [Drs. Buffardi (CSCI), Greene (MEM), Johnson, (MEM) and **Meehan** (EECE)] and generous assistance from *CSU Chico MESA Engineering Program* offered the *First Annual Engineering Math Bootcamp* this summer. Goals of the camp are to assist students develop a strong foundation in critical areas of mathematics and to expose them to the engineering and computer science disciplines before beginning their freshman year. Students enjoyed launching pellets with their trebuchets and racing their robots through mazes and along circuitous paths. There was extremely positive feedback about the projects and measurable improvements in math skills at the end of the camp. Students commented on the community of students and faculty that was established during the three weeks. We hope to expand enrollment in the next summer's bootcamp.

If you are coming to CSU Chico in Fall 2020, watch your email in May 2020 for announcements about the program!