Mechanical Engineering Program

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Overview

- Introduction
- What is Mechanical Engineering?
- Why Cal Maritime Mechanical Engineering?
- Cadet Perspective



Meet the Faculty

- Dr. Nader Bagheri, PE Department Chair and Professor
 - Ph.D. from UC Davis
 - Fluid/thermal design, power systems (fluid mechanics, energy design)
- Dr. William Tsai Associate Professor
 - Ph.D. from UC Berkeley
 - Flow measurement, fluid systems (fluid mechanics, heat transfer)
- Dr. Tomas Oppenheim Assistant Professor
 - Ph.D. from Cambridge
 - Mechanical limbs, ocean instrumentation (material science)



Meet the Faculty (cont.)

- Dr. Jim Gutierrez, PE Professor
 - Ph.D. from UC Davis
 - Composite materials (material science)
- Dr. Michael Holden
 - Ph.D. from Stanford University
 - Autonomous watercraft, UAVs (mechatronics and controls)
- Dr. Thomas Nordenholz
 - Ph.D. from UC Berkeley
 - Wind turbines, renewable energy (mechanics, energy)
- Dr. Tony Snell
 - Ph.D. from University of Minnesota
 - Robotics, controls systems (electronics and controls)



What is Mechanical Engineering



Why Cal Maritime Mechanical Engineering

- Undergraduate teaching focused
 - 7 ME faculty
 - 170 ME undergraduates
- Core ME program + Hands on experience
- ABET Accredited
- Ranked #3 in 2020 Best Colleges for Mechanical Engineering by gradreports.com



Engineering Accreditation Commission





Why Cal Maritime Mechanical Engineering

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Senior Capstone Project – SAE Baja







Senior Capstone Project – DoE Collegiate Wind Competition









Machine and Welding Shops







What is the makerspace?



- Resource for working on projects & a place for creativity!
 For students, faculty, & staff
 - Tools & trainings
 - For school & personal projects



Some of Our Tools

- 4 3D printers (Flashforge & Prusa)
- Soldering kits
- Sewing machine
- Embroidery machine
- PCB mill
- Miter saw/basic wood-working tools
- Laser cutter
- Misc. hand tools
- Paper crafting supplies
- Workbenches



Workshops









Options: License and General

- On your application, you can select between two options
- License Option
 - Graduate with B.S. and US Coast Guard 3rd Assistant Engineers License
 - Complete additional courses required for licensures
 - More exposure to system operations
- General Option
 - Graduate with B.S.
 - Includes one sea training experience
 - Broader options for summer experience and additional courses



Sea Training

• License option students sail as engineers for three summers



Summer Internships

 General option students have one summer of sea training, two summers of 8+ week internships





Beyond the Classroom

- Corps of Cadets
- Professional Preparation
- Leadership Development
- Residential Campus





Cadet Perspective

Cameron Lourenco Senior, License Option



Gillian Hopper Senior, General (ME) Option





Closing Remarks

- Small campus environment in the CSU system
- Emphasize both theoretical and hands on engineering
- Challenging, but worth it!





Questions

- Department Chair
 - Nader Bagheri, nbagheri@csum.edu
- ME Faculty
 - Tomas Oppenheim, toppenheim@csum.edu
 - William Tsai (Co-op Coordinator) <u>wtsai@csum.edu</u>
- Makerspace
 - Erin Cole, <u>ecole@csum.edu</u>
- University Advisor
 - Katie Hansen, khansen@csum.edu, advisor@csum.edu







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