Mechanical Engineering Program

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19 October 2020
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
Why Cal Maritime Mechanical Engineering

- Small size & personal connection with faculty and staff
- Unique practical and system level experiences
- Preparation for the engineering workplace
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

Cal Maritime Makerspace
@calmaritimemakerspace
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

3D Printing

Sewing Machine

Soldering

Laser Cutting
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) wtsai@csum.edu

• Makerspace
  • Erin Cole, ecole@csum.edu

• University Advisor
  • Katie Hansen, khansen@csum.edu, advisor@csum.edu