Introduction

Dr. William Tsai, Associate Professor

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Overview

• Introduction
• Senior Capstone Projects
• Machine Shop
• Makerspace
• Curriculum
  • Core
  • General vs. License Option
Why Choose the Cal Maritime ME Program?

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

• Undergraduate teaching focused
  • 6 ME full-time faculty
  • 182 ME undergraduates
  • 0 ME graduate students

• Core ME program + Hands on experience
• ABET Accredited
• Ranked #3 in 2020 Best Colleges for Mechanical Engineering by gradreports.com
Senior Capstone Projects

Dr. Tomas Oppenheim, Assistant Professor

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Senior Capstone Project – SAE Baja
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Senior Capstone Project – DoE Collegiate Wind Turbine Competition
Senior Capstone Project – DoE Collegiate Wind Turbine Competition
Senior Capstone Project – SMUD Solar Regatta
Senior Capstone Project – Prosthetic Hand
Machine Shop

Dr. Tomas Oppenheim, Assistant Professor
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Welding Shop
Machine Shop
Makerspace

Ms. Erin Cole, Instructional Support (IS) and Makerspace Technician

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THE MAKERSPACE
What is the makerspace?

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

Current
- Flashforge Creator Pro 3D printers
- Soldering kits
- Sewing machine
- Misc. hand tools
- Paper crafting supplies
- Workbenches/group work space

Anticipated for Fall
- Prusa i3 MK3 3D printer
- Embroidery machine
- Expanded wood-working capacity
Training Workshops

3D Printing

Sewing Machine

Soldering
Events from this spring

- Fiber Fridays
- Valentine’s Workshop
- Stress Busters
- Printmaking
- Arduino
- TinkerCAD
- Solidworks
Projects from this spring

- Miniatures
- DIY weighted blanket
- RC cars
- Quadcopters
- Camera hacks
- Clothing
- Uniform repair
- Electronics
- Robots
- And more!
ME Curriculum

Dr. William Tsai, Associate Professor, wtsai@csum.edu
Mr. Keir Moorhead, Maritime Vocation Instructor, kmoorhead@csum.edu
Core Experience

• Mix of theoretical and applied courses
• Theory Based
  • Programming, Statics/Dynamics, Fluids, Material Science
• Lab Based
  • Instrumentation, Material/Mechanical, Fluid/Thermal
• Applied Courses:
  • Welding, Machining, Electromechanical Machinery, Auto-feedback
• Electives
CRU 150: Sea Training I

- Freshman Summer
- 1st Sea Training aboard
  Training Ship Golden Bear
License Option

• Additional Engineering Plant Operations Courses
  • Mechanical and electrical machinery and equipment
  • Power plant and facilities operations

• US Coast Guard Third Engineer’s License
Sophomore and Junior Summer Experience

License Option
• Commercial Cruise
  - Matson Navigation Company
  - US Navy
  - FOSS
• 2nd Training Cruise aboard TS Golden Bear

General Option
• Sophomore & Junior Summer Co-op (Internships)
  - Northrop Grumman
  - Genentech
  - ACCO Engineered Systems
  - Oracle
  - BAE Systems
Challenging but Worthwhile Program

• General Option: 136+16 units
• License Option: 153+26 units
  • Fall/Spring + Summer Units
• More than academics
  • Corps and Leadership Development
Student Perspective

Samantha Kruschke
Senior, License Option

Samuel Rodriguez
Senior, General (ME) Option
Closing Remarks

- Small campus environment in the CSU system
- Emphasize both theoretical and hands on engineering
- A lot of work but a lot of relevant experience for engineers
Questions

- Department Chair
  - Nader Bagheri, nbagheri@csum.edu

- ME Faculty
  - Tomas Oppenheim, toppenheim@csum.edu
  - William Tsai (Co-op Coordinator) wtsai@csum.edu

- ET Faculty/ ME Alumnus (License Track)
  - Keir Moorhead, kmoorhead@csum.edu

- Makerspace
  - Erin Cole, ecole@csum.edu

- University Advisor
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