Civil and Environmental Engineering

Prof. Ian N Robertson

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Chair of the Dept. of Civil and Environmental Engineering
Overview

- What are Civil and Construction Engineering?
- What will you study?
- How to get engaged to maximize learning and satisfaction with the program?
What is Civil Engineering?

“CE takes care of the design, operation and maintenance of public works such as roads, bridges, dams, water and energy systems as well as public facilities like ports, railways and airports. It is also involved in development of private projects such as housing, commercial and industrial buildings”

Infrastructure

- Profession – competence, honesty/integrity, ethics, licensure

- Disciplines
  - Coastal, Construction, Environmental, Geotechnical
  - Hydraulics, Hydrology and Water Resources,
  - Structures, Sustainability, Transportation
Civil Engineering

Provides Solutions to the World’s Most Pressing Infrastructure Problems
CEE Challenges

- Sufficient, safe housing, water and food
- Remediate air, water and soil pollution
- Address climate change threats
- Viable megacities of 15 to 50 million people
- Community resilience to disasters → smart and reliable infrastructure
- Efficient, sustainable transportation
- Making Earth more sustainable
“Build to Last”
Iolani Palace - 1879
Eiffel Tower - 1889
Empire State Building – 1930
Hoover Dam – 1931
Golden Gate Bridge - 1937
Burj Khalifa - 2010
Reef Runway - 1977
Moody Gardens, Galveston TX
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CE: What Will You Study?

- Calculus, Physics, Chemistry, Biology
- Economics, Speech, Humanities
- Fundamentals: Statics, Dynamics, Statistics/Probability
- Fluid mechanics and hydrology
- Water treatment, wastewater, pollution remediation
- Traffic, transportation planning, pavements
- Soil mechanics, slope stability, foundations, retaining walls
- Mechanics of materials, structural analysis, concrete and steel design
- Construction materials, construction management
- Sustainability, ethics,
- Surveying, AutoCAD drafting
- Senior design project
- General, Structures, or Sustainability and Innovation Tracks
- **Mandatory Advising every semester**
CNST: What Will You Study?

- Calculus, Physics, Chemistry, Biology
- Economics, Speech, Humanities, Accounting
- Fundamentals: Statics, Dynamics, Statistics/Probability
- Fluid mechanics and hydrology
- Water treatment, wastewater, pollution remediation
- Traffic, transportation planning, pavements
- Soil mechanics, slope stability, foundations, retaining walls
- Mechanics of materials, structural analysis, concrete and steel design
- Construction materials, construction management, construction law
- Construction equipment, scheduling, safety, estimating and bidding
- Sustainability, ethics,
- Surveying, AutoCAD drafting
- Senior design project
- Mandatory Advising every semester
Structural Member tests

CEE485
Reinforced Concrete Design
Structural Member tests
Clubs

- American Society of Civil Engineers (ASCE)
- Society of Women Engineers, SWE
- Chi Epsilon, XE, honor society
- Institute of Transportation Engineers, ITE
Advisor: Prof. Francis
Annual conference competitions on mainland
K-12 outreach, Community service
Social events
FE Review course
Leadership training
2009 PSWRC hosted by UHM
Chi Epsilon, XE, honor society

- Advisor: Prof. Ooi
- Juniors and Seniors, 3.0+ GPA
- Tutoring, community service, socials
CEE Dept.

- 350 undergraduates
- 65 graduate students
- New Construction Engineering Program
- BAM – Bachelors and Masters
- 16 Faculty members (5 New Faculty)
- Numerous Research opportunities for undergrad and graduate students

4 TRACKS
Civil Engineering
Construction Engineering
Structural Engineering
Sustainability and Innovation

3 DEGREES
Bachelors
Masters
PhD

ABET ACCREDITED

10,000+ degrees conferred

Top 50% ranked graduate program in the US (US News and World Report, 2020)

www.cee.hawaii.edu
Welcome to CEE

- Get involved
- Study hard
- Have fun
Thank-you! Questions?

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