Engineering is everywhere
“Engineers have a hand in designing, creating, or modifying nearly everything we touch, wear, eat, see, and hear in our daily lives.”

- American Society of Engineering Education
Engineers are...

• Creative
• Innovative
• Problem Solvers
Fields of Engineering

Civil    Mining    Electrical
Mechanical Petroleum Computer
Aerospace Materials Agricultural
Industrial
Chemical

Biomedical
Construction
Biomedical
Geomatics
Nuclear
High School Preparation

- Pre-calculus or calculus
- Chemistry
- Physics
- Writing, Communication
- Computer - programming, drafting, general
- Honors & advance placement
Purdue School of Civil Engineering
School of Civil Engineering

New San Francisco - Oakland Bay Bridge
New San Francisco - Oakland Bay Bridge

- Purdue CE Interns, Co-Ops, and Alums working on this project
- Highlights the many different careers available to Purdue Civil Engineers
New San Francisco - Oakland Bay Bridge

- Why do we need a new bridge?
- October 17, 1989 -- Loma Prieta Earthquake
New San Francisco - Oakland Bay Bridge

CE Structural Emphasis

- Civil Engineers design the structural components of the bridge to resist the elements (ex. earthquake, tidal wave)
Civil Engineers evaluated soil properties to ensure a stable foundation.
Civil Engineers protect the natural environment of the bay
Civil Engineers design the new bridge for safe and efficient operation. The new bridge is not only designed for cars and trucks, but also transit, pedestrians and bicycles.
New San Francisco - Oakland Bay Bridge
CE Construction Emphasis

- Civil Engineers coordinate and manage the construction of the bridge
Civil Engineering at Purdue
Eight Areas of Specialization

- Materials
- Structural
- Construction
- Environmental
- Architectural
- Geotechnical
- Transportation
- Hydraulics and Hydrology
- Geomatics / Land Surveying
Hydraulics and Hydrology

- Design of large-scale hydraulic systems
- Hydrology and impact of global climate on water and eco-systems
Geomatrics and Land Surveying

- Utilize spatial information about the land, the oceans, and natural resources
- Involves digital mapping, geographic information systems (GIS), and global positioning systems (GPS)
- Separate degree is also available (LSGE Degree)
Materials

- Study of asphalt, concrete, and other bituminous materials
- Mixing Processes
- Strength and fatigue testing
Structures

- Design and analysis of structural elements for bridges, buildings, dams, tunnels, and retaining walls
- Structural forensics
Careers in Civil Engineering

Highlighting CE Alums and Current CE Students
Alt and Witzig is a full service engineering consulting firm in Indianapolis

Photo: Ben taking core samples to determine soil properties

Civil engineers work for consulting firms that provide a broad range of technical information for their clients
National Geospatial Intelligence Agency (NGA) provides computer mapping for defense and weapons systems

Intern/Co-Op opportunities available with security clearance provided

Civil engineers with specialty area of Land Surveying and Geomatics (LSGE, separate degree) may work for private companies or government agencies
Alice Majani
Purdue Intern
Hunt Construction
New Indianapolis Airport

- Hunt Construction is a general contractor that has built over 75% of the major sports complexes in the US.
- Alice is working with project managers to construct the new Indianapolis Airport.
- Constructors work in planning, scheduling, and building infrastructure.
Martha Reese
BSCE Purdue
JD, Georgetown
Chief Environmental Counsel
Dupont Company

- DuPont is a world wide chemical manufacturer
- Martha Reese is a Civil Engineer with an Environmental focus and a law degree
- Civil engineers work for large companies in construction, materials and facilities management

Electronic Polymers

Emergency Response Equipment

Automotive Coatings
Duke Realty is one of the largest real estate developers in the United States

Steven Kennedy manages the construction branch of Duke Realty

Civil engineers provide technical details for site development, including surveying and water resources
Arsee Engineers is a structural engineering firm in Indianapolis.

Jessica is interested in historic renovation and architecture.

Civil engineers renovate, remodel and restore historic structures.
School of Civil Engineering

Stephen Bechtel, Jr
BSCE Purdue
CEO Bechtel

England-France Channel Tunnel (Chunnel)

New Tacoma Narrows Bridge

Hoover Dam

Equatorial Guinea LNG Plant

Limerick Nuclear Plant
School of Civil Engineering

CE Student Activities

Concrete Canoe
School of Civil Engineering

CE Student Activities

Concrete Canoe
CE Student Activities

Steel Bridge
Community Service Project, Puerto Rico

- Semester project to assist communities in Puerto Rico improve water distribution system
- Program in conjunction with the University of Puerto Rico Mayaguez (UPRM)
Study Abroad Program in Guadalajara, Mexico
Cooperative Education and Internship Program

- Numerous firms looking for Co-Op students (more jobs last year than students)
- Nationwide opportunities
- Check out our job webpage on the civil engineering webpage (Industry Opportunities)
<table>
<thead>
<tr>
<th>Company</th>
<th>Industry</th>
<th>Location</th>
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<tr>
<td><strong>84 Components</strong></td>
<td>Design-Build</td>
<td>US-PA-Eighty Four</td>
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<td><strong>A&amp;F Engineering</strong></td>
<td>Engineering Consulting</td>
<td>US-IN-Indianapolis</td>
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<td><strong>A&amp;Z Engineering, LLC</strong></td>
<td>Engineering Consulting</td>
<td>US-IN-Fort Wayne</td>
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It’s an exciting time for Purdue’s School of Civil Engineering!

Questions?
For federal, state of Indiana, and Purdue need-based aid eligibility, a student must be a U.S. citizen or "eligible" non-citizen.

For a non-citizen to be eligible for financial aid consideration, the student must possess a valid Alien Registration Card I-551 or I-151, be classified as a conditional permanent resident with a valid I-151C Registration Card, or have a passport or I-94 (Arrival/Departure Record) showing one of the following designations:

- Refugee
- Asylum Granted
- Indefinite parole and/or Humanitarian Parole
- Cuban-Haitian Entrant