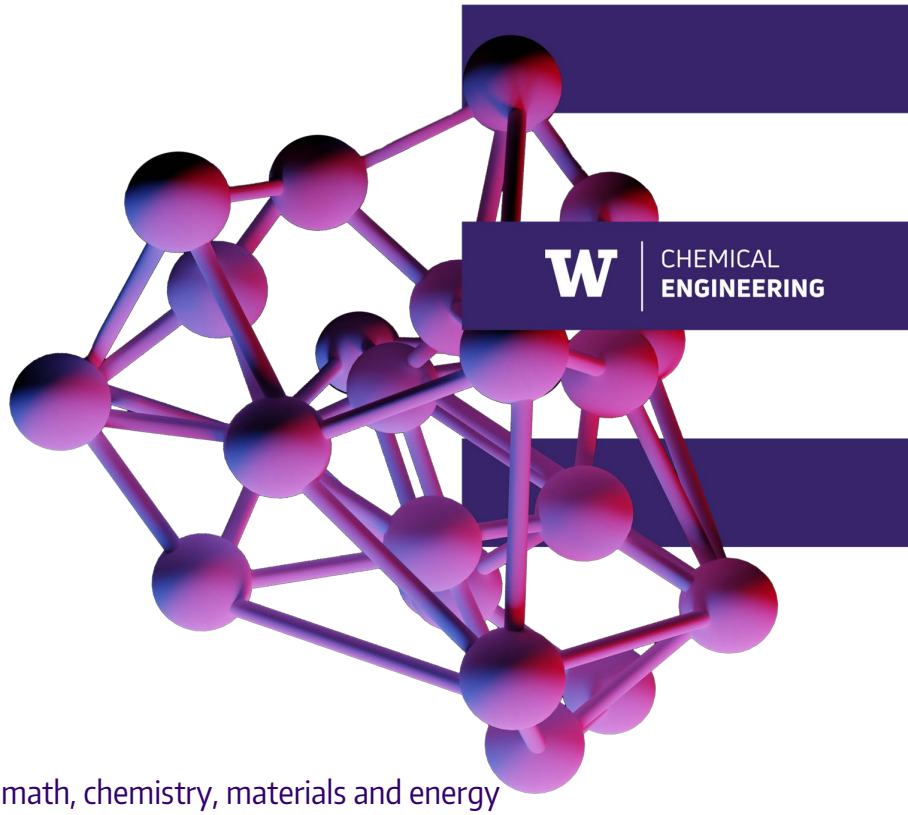
UNIVERSITY of WASHINGTON



Chemical engineers develop the molecules, materials and devices that enable us to better treat disease, produce clean energy and live more sustainably.

Chemical engineers use their knowledge of physics, math, chemistry, materials and energy balances, and transport phenomena to transform raw materials into useful products. Innovations made by chemical engineers are reflected in medical advances, electronic devices, and high-performance materials. From targeted drug delivery systems to more efficient photovoltaics to protein-guided assembly of electronics, chemical engineering produces cutting-edge solutions to today's most pressing societal problems.

What makes chemical engineering special?

UW ChemE is a small, close-knit department with a cohort model. Students know their classmates' names and form study groups, and our advisers are available at a drop-in basis. Our small class sizes enable community building and innovative problem solving. Design coursework and student organizations such as like ChemE Car and the ChemE Brewing & Distilling Club use project-based teams to give students a chance to solve problems outside the classroom.

Students are able to communicate with department leadership and advise on decision-making throughout the department. With UW chapters of AIChE – the Global Home for Chemical Engineers, and WChE – Women in Chemical Engineering, students receive opportunities to participate in social events, professional development opportunities, and work to enhance equity and inclusion in chemical engineering.

What problems are chemical engineers trying to solve?

Chemical engineering is broad in application and scale, and chemical engineers contribute to innovation in every industry by designing, building and analyzing processes that range from the nano-scale to refineries larger than city blocks. Chemical engineers address issues such as:

- How do we transform low value materials into high value products?
- How do we make this product in a scalable manner without a negative impact on the environment?
- How can we scale up a process developed in a lab to reach as many people as possible?
- How can we deliver drugs right to the site they're needed and produce them in a way that people can afford to take them?
- Can we optimize manufacturing processes to be more economical, environmentally-friendly, and safe?

WHERE DO CHEMICAL ENGINEERING ALUMNI WORK?

Air and space

Propulsion and fluid systems
Advanced space technologies
Power and energy systems

Advanced materials
Testing
Manufacturing
Processes
Boeing

Honeywell Aerospace
The Jet Propulsion Lab
NASA

Computing, data and digital technologies

Data science
Structures and scalability
Micro-processors and memory
AWS

Zillow
Google
Cascade Data Labs
Intel

Micron
IM Flash

Health and medicine

Drug delivery
Imaging
Synthetic biology

Biotech and pharmaceuticals
Just Therapeutics
Bristol Myers Squibb

Philips Healthcare
W.L. Gore

Infrastructure, transportation and society

Electrified transportation
Materials
Concrete
Auto parts
Engines

Air pollution and emission reduction
Biofuels
Supply chain

CalPortland
Ernst & Young
Government agencies

Robotics and manufacturing

Process optimization
Prototyping
Scaling and manufacturing

Cosmetics
Brewing
Paper and pulp

PepsiCo
W.L. Gore

RECENT CAPSTONE PROJECTS

- **Membrion, Inc.** - Extracting heavy metals from mining wastewater.
- **Sironix Renewables** - Efficient purification of green surfactants.
- **AvtechTyee** - Co-cure multi-material rod for aerospace applications.
- **Boeing** - Part smoothing models for additive manufactured titanium.

QUICK FACTS

More than 60% of our students participate in undergraduate research.

85% of our B.S. students go directly into industry.

More than 20% of students study abroad, including a quarter-long program in Scotland and labs in Denmark.

More than 60% of our students participate in an entrepreneurial or industry-linked special design project.

Our cohorts are about 75 people and recent cohorts have been 50% women.

LEARN MORE:

Start research in a lab even before placing into a major.

Take a class open to non-majors, such as:

CHEM E 201: Chemical Engineering Today and Tomorrow

CHEM E 498: Diversity & Ethics in Chemical engineering

CHEM E 341: Energy & Environment

CHEM E 355: Biological Frameworks for Engineers.

For more information, visit our undergraduate page: bit.ly/chooseChemE.