

ENGINEERING DISCIPLINES CHEMICAL ENGINEERING

CONCEPT Chemical engineering is clean, transformational and lifesaving. Ten challenges face the world in the next 50 years, including the following: energy, water, food, environment, poverty, terrorism/war, disease, education, democracy and population. A chemical engineer's problem-solving strengths can help provide solutions to each of these areas.

BACKGROUND

Chemical engineers must understand the following:

- Basic sciences of chemistry and physics
- How to apply these basic sciences to engineering design, analysis and control of the process

Chemical engineers specialize in:

- Process scale-up
- Process/Plant design
- Operation and process control
- Optimization
- Process safety

EXAMPLES

The University of Nebraska's Chemical Engineering Department recently helped solve the following problems. These are examples of problems a chemical engineer is challenged with daily.

- 1. Development of vaccines
- 2. Development of therapeutics used to treat patients
- 3. Development of rapid diagnostic testing for Covid 19
- 4. Increased the production of cleaners and sanitizers.





