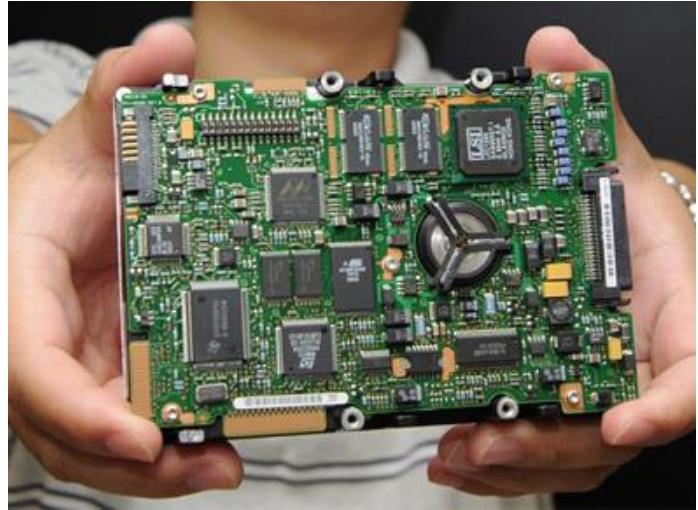


## Chemical & Molecular Engineering

Chemical engineering combines chemistry with engineering concepts. At Stony Brook, it emphasizes molecular-level engineering in the nanotechnology, nanocomposites, nutraceutical, pharmaceutical, environmental, healthcare, and energy industries. Students learn the molecular bases of chemical phenomena, process control, and unit operations, thermodynamics and synthesis. Within CME you might specialize in business, physics, applied mathematics, chemistry, health professions, tissue engineering, polymer science, energy, or materials science, or customize a specialization of your own. If you have the GPA and are accepted, some specialization tracks can also lead to a minor in chemistry, physics, or materials science, or allow you to place into accelerated programs, such as the five-year BE/MBA program with our College of Business, or the Scholars in Medicine or new Scholars in Dentistry programs with Stony Brook Medicine.



Chemical engineers work in a variety of industries, including polymers, advanced materials, manufacturing, petroleum, energy, pharmaceuticals, biotechnology, nuclear oversight, environmental health & safety, cosmetics, and food processing.

Key words: polymers, process, materials, health care, tissue engineering, pharmacology, nanotechnology, industrial chemical process, chemical synthesis, fluid dynamics, food engineering, fuel cell, metallurgy, pharmacology, plastics.

### Transferable Skills

- Abstract reasoning
- Project management
- Effective communication
- Systems design
- Simulations & modeling
- Application of safety protocols to manufacturing environments
- Laboratory skills
- Reaction analysis
- Molecular modeling
- Analytical problem solving
- Polymer synthesis
- Teamwork
- Application of heat transfer & fluid principles
- Designing sustainable energy solutions
- Cell culture
- Design & engineering of drug delivery systems

### Career Communities to Consider

- IT & Engineering
- Government & Public Service
- Business
- Healthcare