

GEORGE DAVIS

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EDUCATION

University of Texas at Austin, Cockrell School of Engineering
B.S. Chemical Engineering

Expected: May 2026
GPA: 3.7

EXPERIENCE

Process Engineering Intern, *ExxonMobil*, Baytown, TX May 2024 - Present

- Helped reduce energy use in a crude unit by 18 percent, saving about \$420,000 per year.
- Reviewed daily process data to find ways to improve heat exchangers, reactors, and separation systems.
- Worked with operators and engineers to troubleshoot plant issues, keeping key units running at 98 percent uptime.
- Updated operating procedures and diagrams, improving documentation clarity and helping with operator training.
- Developed a real-time monitoring dashboard using PI System and Excel/VBA to track steam consumption.
- Participated in a hazard and operability study for a refinery expansion project, identifying three high-risk pressure scenarios and proposing relief valve specifications to ensure OSHA PSM compliance.

Undergraduate Research Assistant, *Catalysis & Reaction Engineering Lab*, Austin, TX Jan 2024 - Present

- Ran experiments to study catalyst performance for converting methanol into light olefins.
- Tested and examined catalysts using basic surface area, imaging, and material analysis methods.
- Analyzed gas chromatography data in MATLAB to measure product output and reaction rates.
- Followed safety rules for handling chemicals, hot equipment, and pressurized gases.
- Performed material characterization using x-ray diffraction and BET surface area analysis to correlate catalyst pore structure with selectivity toward ethylene and propylene.
- Modeled reaction kinetics for a fluidized bed reactor, calculating activation energy and rate constants to predict catalyst deactivation rates over 100-hour continuous runs.

PROJECTS & EXTRACURRICULAR

Process Design Project Lead, Senior Design Capstone May 2023 – May 2024

- Led a team designing a plant to produce acetic acid, including flow diagrams and economic estimates.
- Used Aspen Plus to study reactor conditions, separations, and heat recovery.
- Completed a safety review to identify possible hazards and proposed simple engineering controls.
- Wrote the final design report covering equipment sizing, major piping needs, control ideas, and project costs.

Biodiesel Production from Waste Cooking Oil, Unit Operations Lab Jan 2024 - Apr 2024

- Built a small batch system to produce biodiesel from used cooking oil.
- Tested different reaction settings to improve fuel conversion.
- Measured fuel quality using viscosity, acidity, and gas chromatography.
- Calculated material balances, energy needs, and estimated cost per gallon.

SKILLS

- Design:** AutoCAD, Microsoft Visio, PI System, LabVIEW, Solidworks
- Analysis:** Aspen Plus, Aspen HYSYS, ChemCAD, MATLAB, Minitab, Python