GREEN PROCESS ENGINEERING

What is Green Process **Engineering?**

Western's Green Process engineering students address society's growing sustainability concerns by focusing on developing products and processes that are inherently clean and sustainable without sacrificing economic viability and efficiency. Students will apply principles of green chemistry, biology, physics and math to design new pathways that use alternative and renewable materials and energy sources to ensure minimum waste generation at the source.



CAREER POSSIBILITIES

Environmental Pollution Control and Remediation

Sustainable Commodity Manufacturing

Sustainable Energy Storage and Production

Alternative Fuel Development and Manufacturing

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VOLTAGE / SPA

SHIVANI CHOTALIA BESC. '15 HBA. '15

Senior Analyst of Engineering & Projects, NRStor Inc.

- International Research Internship, China
- Engineers Without Borders Western, President
- Combined Degree Ivey HBA

My time at Western Engineering was full of fantastic opportunities to get involved in the engineering community as a soph and mentor to new students, learn about global development and lead an awesome team as president of EWB Western, and work around the world through the WE Go Global research internship in China. All of these opportunities helped me realize my passion for using engineering innovation to combat climate change. Now I work with a startup company to commercialize new energy storage technologies that have a real impact on our energy system and the communities they serve.



WESTERN'S GREEN PROCESS ENGINEERING

All Western Engineering students must complete a common first year. Courses include: Applied Mathematics — Calculus, Applied Mathematics — Linear Algebra, Business for Engineers, Chemistry, Computer Programming Fundamentals, Foundations of Engineering Practice, Physics, Properties of Materials and Statics. Upon completing first year, students may apply to the Green Process Engineering program.

Green Process Engineering

The program provides a platform that integrates the fundamental principles of Chemical Engineering to the design of commercial products and processes that are safe, economical and environmentally friendly. The program emphasizes the use of alternative sources of energy and renewable feedstocks with reduced carbon emissions, and design of alternative pathways to processes or products with reduced environmental footprints and process intensification.

In addition to fundamental chemical engineering courses, students take specific courses such as; Green Chemistry; Fundamentals of Green Engineering; Solar Fuel Cells; Green Fuels; Green Power; Photovoltaics and Energy Storage; Sustainability and Life Cycle Analysis and Green Process Design. Through technical electives, students have the opportunity to explore emerging topics in fields of catalysis, (bio)energy, wastewater treatment, drinking water quality, solid waste management, and oil processing.

In their fourth year, students have the option of investigating a focus area of their interest in greater depth by working in a research lab under the supervision of a faculty mentor, gaining practical skills while completing an original research project. In addition, they complete their studies with a capstone design project dealing with the design of a green chemical process of industrial relevance.

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