UNIVERSITY OF SURREY

THE FLUOR PILOT PLANT

A UNIQUE, INDUSTRY-INSPIRED LEARNING EXPERIENCE

At the School of Chemistry and Chemical Engineering, we embrace a 'learning by doing' philosophy. In recent years we have invested in cutting-edge teaching and research facilities, including our **£1.7M fully operational pilot plant**. This gives chemical engineering, chemistry and pharmaceutical sciences students invaluable hands-on experience running a pilot-scale industrial plant and developing key practical skills.

Training begins in a specialist virtual reality environment where students build their understanding and confidence, before moving to real-world operations. Throughout their degree, students gain experience as both plant operators and managers. This innovative VR and hands-on learning won the 2023 Royal Society of Chemistry Horizon Prize for Higher Education.

Our pilot plant has also earned recognition from Fluor and The Organisation for the Prohibition of Chemical Weapons (OPCW) for its excellence in industry preparation.

With a focus on employability, our award-winning training, inspirational teaching and industry links equip students with the skills they need to thrive in their careers.

Professor Adrian Dobbs

Head of School for Chemistry and Chemical Engineering

SCHOOL OF CHEMISTRY AND CHEMICAL ENGINEERING
UNIVERSITY OF SURREY

ROYAL SOCIETY OF CHEMISTRY

2023 WINNER Royal Society of Chemistry HORIZON PRIZE

The Fluor Pilot Plant Advantage

Unlike other university pilot plants which focus on isolated unit operations, our plant integrates multiple core processes into a single, functioning system like in industry.

HANDS-ON EXPERIENCE

Get behind the controls of a fully operational £1.7M pilot plant. From start-up to shut down, you'll run real industrial processes - chemical reactions, filtration, heat exchange, and even CO_2 capture - building the skills and confidence to operate complex systems safely and efficiently.

TEAM-BASED LEARNING

Work as part of an engineering team to plan, operate, and manage plant activities. Collaborate, lead, and communicate in high-pressure situations, developing the essential skills that employers look for.

REAL-TIME PROBLEM SOLVING

Step beyond textbook experiments and face real-world challenges. You'll troubleshoot process issues, adapt to unexpected scenarios, and make critical decisions, just like professional engineers do every day in industry.

STATE-OF-THE-ART FACILITIES

Train in a cutting-edge environment featuring a high-spec control room with live data displays, immersive virtual reality simulations, and industry-grade systems that mirror real plant operations from day one.

"Our pilot plant is more than just a teaching tool – it's an opportunity for real industrial experience. Through our unique training, our students gain hands-on exposure to real industrial processes. Whether at undergraduate or postgraduate level, this training equips students with the technical skills, confidence, and problem-solving abilities that set them apart."

Dr Dimitrios Tsaoulidis, Senior Lecturer in Chemical Engineering

Shaping Future Innovators

A degree from the School of Chemistry and Chemical Engineering empowers you to thrive across various sectors, including energy, pharmaceuticals, healthcare, oil and gas, waste management and sustainable manufacturing.

Recent graduates are now employed in roles such as:

- Associate Process Engineer, Fluor
- Chemical Engineer, Saudi Aramco
- Data Engineer - Xiatech
- Software engineer - JPMorgan Chase & Co.

Why choose Surrey?

Surrey's Role in Global Chemical Safety

For over 20 years, the Fluor Pilot Plant has been a key training site for the Organisation for the Prohibition of Chemical Weapons (OPCW) Associate Programme, supporting global chemical safety efforts.

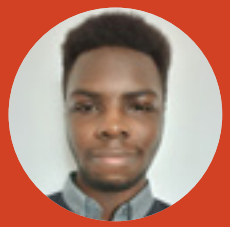
As part of the programme, associates from diverse scientific backgrounds spend three weeks at Surrey, operating the plant as both a production facility and a chemical business. This hands-on training enhances their expertise in process operations, industrial safety, and risk management, preparing them for placements in the global chemical industry.

Many associates go on to become chemical weapons inspectors and national representatives for the Chemical Weapons Convention, contributing to international security. The OPCW's long-standing partnership with Surrey highlights the plant's world-class reputation in chemical process safety and industrial training; a legacy further underscored by the OPCW's 2013 Nobel Peace Prize.

Award-Winning Education

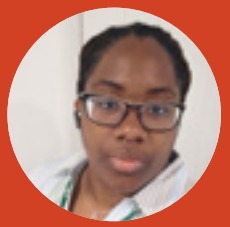
In 2023, we were honoured to receive the **Horizon Prize for Education** from the Royal Society of Chemistry in recognition for our pioneering work in developing an integrated training facility for chemists and chemical engineers.

Our state-of-the-art pilot plant blends realistic, immersive virtual reality simulations with hands-on practical work, offering an unparalleled learning experience in large-scale chemical processes.



"My course provided me with the opportunity to use the theoretical knowledge I had gained, in a practical setting by working on the pilot plant. I was also able to continue working on the plant in my master's year and over the summer as part of the Organisation for the Prohibition of Chemical Weapons (OPCW) programme which I thoroughly enjoyed."

Oyoma, Chemical Engineering MEng



"The practical experience I gained working with the Fluor Pilot Plant while completing my undergraduate and master's degrees was instrumental in preparing me for my future career."

Abigail, Chemical Engineering MEng

"I appreciated the learning by doing in the laboratory setting, both during the practical and the research project, which allowed me to apply my learnings and develop new analytical skills. The opportunity to work in a highly regulated GMP environment during pilot plant sessions was another highlight of the course."

Imane, Pharmaceutical Sciences MSc

FLUOR

"Fluor continuously invests in developing future engineers, so we are particularly pleased to work with the University of Surrey to provide students with industry experience by running a small-scale manufacturing plant as part of their practical experience module."

David Seaton, Chairman and CEO of Fluor Corporation

Learn More About Our School

SCHOOL OF CHEMISTRY
AND CHEMICAL ENGINEERING
UNIVERSITY OF SURREY

Even our mascot **Steve the Stag** couldn't resist getting hands-on in the pilot plant - watch Steve in action

Disclaimer: Information correct at the time of publishing in June 2025. For the latest information visit **surrey.ac.uk**