COURSE DETAIL

CHEMISTRY FOR SUSTAINABILITY
Country Netherlands
Host Institution Utrecht University – University College Utrecht
Program(s) University College Utrecht
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Chemistry
UCEAP Course Number 130
UCEAP Course Suffix
UCEAP Official Title CHEMISTRY FOR SUSTAINABILITY
UCEAP Transcript Title CHEM SUSTAINABILITY
UCEAP Quarter Units 6.00
UCEAP Semester Units 4.00

Course Description

The course begins with a review of the scientific background needed to understand the role that chemistry has played in technological progress so far and to answer the question: can chemistry help in achieving sustainability goals, and how?
The course approaches sustainability from a chemistry perspective, starting by introducing the 12 principles of green chemistry and giving examples of their applications in real life. Green chemistry metrics, such as atom economy and environmental factors, to be able to measure and compare aspects of chemical processes in terms of sustainability are reviewed. An overview of the principles of catalysis and different types of catalysts, with an eye on real industrial processes and sustainable chemistry is provided. New processes to help close the carbon cycle and reduce our environmental impact such as hydrogen production, biomass utilization, plastic waste recycling, and reduced use of solvents are discussed. In project groups of 2-3 students, an established industrial chemical process with an emerging, more sustainable route, and deliver a report focused on the green chemical aspects of the process are compared.

Language(s) of Instruction
English

Host Institution Course Number
UCSCICHE31

Host Institution Course Title
CHEMISTRY FOR SUSTAINABILITY

Host Institution Campus
University College Utrecht

Host Institution Faculty
Science

Host Institution Degree

Host Institution Department
Chemistry

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