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Principles of Green Chemistry - CHE00001M

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- **Department:** Chemistry
- **Module co-ordinator:** Dr. Avtar Matharu
- **Credit value:** 20 credits
- **Credit level:** M
- **Academic year of delivery:** 2020-21
 - See module specification for other years: [2018-19](#) [2019-20](#)

Module will run

Occurrence

A

Teaching cycle

Autumn Term 2020-21

Module aims

This introductory module explores the principles and theory of green chemistry. The module is divided into 4 subject areas, and students will learn a range of practices and technologies which provides a basis for the applications which form the later parts of the course.

Module learning outcomes

- To learn the fundamental philosophy and tools of green chemistry
- To learn how to use green chemistry metrics
- To develop an awareness of the legislative, financial and social factors connected with reducing environmental impact
- To understand the importance and role of solvents in chemical and related processes
- To understand why solvent replacements are being sought
- To understand the importance of heterogeneous catalysis to green chemistry
- To recognise the key difference between homogeneous and heterogeneous catalysis in chemical processes

Assessment

Task	Length	% of module mark
24 hour open exam Green Chemistry & Sustainable Industrial Technology	N/A	80
Essay/coursework Principles of Green Chemistry	N/A	10
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Special assessment rules

None

Reassessment

Task	Length	% of module mark
Essay/coursework Reassessment Essay	N/A	100

Module feedback

Students will receive written feedback on each assessment apart from the examination.

Indicative reading

General Background

Green Chemistry: An Introductory Text

M. Lancaster, Royal Society of Chemistry, 2012, ISBN 9781847558732

Handbook of Green Chemistry, Green Processes, Designing Safer Chemicals

P. Anastas and P. Trevor, 2013, ISBN 3527326391

Green Chemistry Metrics: Measuring and Monitoring Sustainable Processes

A. Lapkin and D. Constable, 2008, ISBN 9781405159685

Sustainable Solvents: Perspectives from Research, Business and International Policy

(Green Chemistry Series)

J. H. Clark, A. Hunt, C. Topi, G. Paggiola and J. Sherwood, 2017, ISBN 1782623353

Sustainable Catalysis (Green Chemistry Series)

M. North, J.H. Clark, 2015, ISBN 1782620583

Alternative Energy Sources for Green Chemistry (Green Chemistry Series)

G. Stefanifis, A. Stankiewicz, J.H. Clark, A. de la Hoz, J. Fan, R. Mato Chain, J. Santamaria

2016 ISBN 1782621407

Green Chemistry for Surface Coatings, Inks and Adhesives: Sustainable applications (Green Chemistry Series)

R. Höfer, A.S. Matharu, Z. Zhang. 2019, ISBN 9781782629948

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Coronavirus (COVID-19): changes to courses

The 2020/21 academic year will start in September. We aim to deliver as much face-to-face teaching as we can, supported by high quality online alternatives where we must.

Find details of the measures we're planning to protect our community.

Course changes for new students