

E – Electronic engineering

Dr David Chesmore, senior lecturer in the Department of Electronics at the University of York, specialises in environmental electronics and sustainable engineering. His areas of interest include environmental instrumentation, ecological and agricultural applications.

Course overview

BEng/MEng Electronic Engineering at the University of York has a strong sustainability focus thanks to David's passion for the subject. A recent compulsory module in the first year included a general introduction to climate change and business ethics, and covered the role of electronics in renewable energy (e.g. solar panels, wind turbines) and ways of sensing and measuring the environment (e.g. pollution levels).

“Remember, electronics are absolutely everywhere – the impact is huge! You have to consider the significance of landfill waste and the implications of the various chemicals and minerals used in electronics and batteries.”

Dr David Chesmore

In the third year, students must design a complete system in groups of 5 or 6 - for example, a functioning weather monitoring station. The module also covers electrical recycling, green manufacturing processes, how to design energy-saving systems for low power usage and sustainable mineral extraction. Gold extraction is a particularly important topic involving many social, political and environmental issues - including the use of cyanide in the extraction process, which can cause devastating water pollution.

Student experience

“We aim to be objective in addressing environmental problems such as climate change and renewable energy sources – simply giving students the facts and

letting them decide. That's why measuring and monitoring the environment is so important - to determine the facts.”

Dr David Chesmore

This year, students were required to write an essay about fracking. After researching the industry, sensing methods and related issues (e.g. seismic effects), they considered how negative impacts may be mitigated or avoided in the future. David mentioned that feedback from students on this assignment was overwhelmingly positive and there was some excellent research undertaken.

“Be multidisciplinary! – engineers must be good at switching disciplines in order to make more informed decisions – for example you could look at the chemistry of pollution.”

Dr David Chesmore

Students can also choose an optional module in the fourth year (if doing the MEng), covering water pollution monitoring and satellite remote sensing, and some students have even gone on to careers in water-related industries in other countries.

Links

- **[MSc Energy & sustainability with electrical power engineering, University of Southampton](#)**
- **[MSc Power engineering & sustainable energy, Swansea University](#)**
- **[Engineering for Sustainable Development: Guiding Principles, The Royal Academy of Engineering](#)**

Related subjects: Aerospace engineering, Artificial intelligence, Computer systems Engineering, Electrical engineering, Mechanical engineering, Robotics

Further information: https://www.york.ac.uk/electronics/undergraduate/courses/electronic_engineering/
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