

Energy and the Environment Summer School (EESS 2026)

- Runs over **two weeks** from Monday 20 July to Friday 31 July 2026
- **Varied activities** on each teaching day, including:
 1. **Interactive lectures** by academic experts
 2. **Hands-on experience** in our **Diamond** laboratories
 3. Tackle our **Energy Engineering Challenge**
 4. Integrated tuition in **English technical communication**
 5. **Field trips** to Drax power station and industrial museum
 6. **Excursions** and **social events**

Expert tuition on cutting-edge topics

- **Interactive lectures** on hot topics in clean energy, many taught by senior professors. Topics include:
 1. **Wind, tidal** and **wave** energy
 2. **Hydrogen** and ammonia: production and storage
 3. Power generation and **carbon capture**, utilisation and storage (CCUS)
 4. **Nuclear energy** – fission and fusion
 5. Large scale **energy storage** technologies
 6. **AI** for materials discovery
 7. **Batteries** and battery materials

Hands-on learning in our world-class laboratories

- Regular hands-on learning in our world-class Diamond laboratories
 1. Learn the principles of health, safety and risk management by freezing chocolate with liquid nitrogen at $-196\text{ }^{\circ}\text{C}$
 2. Design and test a wind turbine
 3. Use an electrolyser to split water into hydrogen and oxygen, using the hydrogen to power a fuel cell
 4. Learn how to optimise the configuration of multiple solar cells
 5. Experiment with light levels in a bioreactor

Improve your technical communication skills

- Six interactive sessions to develop your technical writing and speaking skills
 1. Learn to communicate engineering concepts with confidence to different audiences
 2. Tightly linked with other activities (laboratory work, Energy Engineering Challenge)
 3. Practical exercises with personalised feedback
 4. Taught by expert staff from our English Language Teaching Centre (ELTC)

Energy engineering challenge

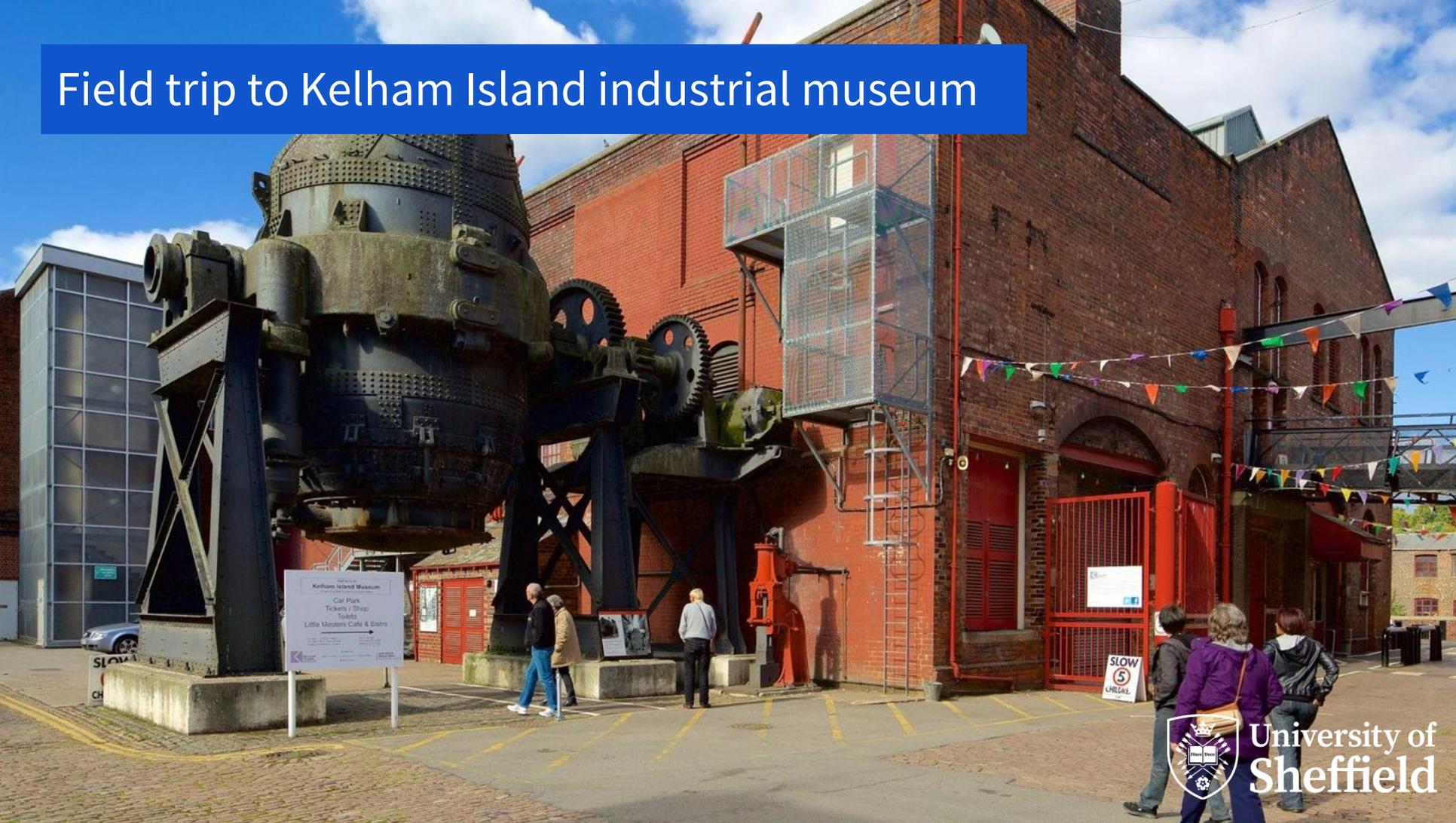
- An exciting **team-based challenge**
- Work in small teams to develop **innovative solutions** to tackle the **energy crisis** for a small town
- Present your solution to a panel of **experts from academic and industry**
- **Prizes for the top team** that recognise their creativity, innovation, teamwork and sustainable thinking.

Field trip to Drax power station



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Field trip to Kelham Island industrial museum



Visit
Kelham Island Museum
Open daily 10am - 5pm
Car Park
Tickets / Shop
Toilets
Little Mendars Cafe & Bistro

SLOW
CHILDREN

Excursion to Chatsworth House



University of
Sheffield

Excursion to Bakewell



University of
Sheffield

Structure: Week 1

| Day | Early Morning | Late Morning | Afternoon |
|-----------|---|---------------------------------------|--|
| Saturday | Arrival – optional collection from Manchester Airport | | |
| Sunday | Arrival – optional collection from Manchester Airport | | |
| Monday | Welcome and housekeeping | Energy transition | Danger and hazard laboratory |
| Tuesday | Wind, tidal and wave energy | Technical communication for engineers | Wind turbine design and test |
| Wednesday | Hydrogen and ammonia: production and storage | Technical communication for engineers | Clean energy – solar, wind, electrolysers and fuel cells |
| Thursday | Power generation and carbon capture, utilisation and storage (CCUS) | Field trip to Drax power station | |
| Friday | Nuclear energy – fission and fusion | Technical communication for engineers | Energy Engineering Challenge |
| Saturday | Excursion to Chatsworth House and Bakewell | | |

Structure: Week 2

| Day | Early Morning | Late Morning | Afternoon |
|-----------|---|---------------------------------------|--|
| Monday | Large scale energy storage technologies | Technical communication for engineers | Characterising solar cells |
| Tuesday | Batteries and battery materials | Technical communication for engineers | Bioreactor lighting laboratory |
| Wednesday | AI for materials discovery | Energy Engineering Challenge | Field trip to Kelham Island Museum |
| Thursday | Life cycle analysis and sustainability | Technical communication for engineers | Life cycle analysis and sustainability |
| Friday | Energy systems engineering | Energy Engineering Challenge | |
| Saturday | Departure – own transport to Manchester Airport or other onward destination | | |

Admission

- You should be studying an *Engineering or Physical science* discipline and progressing well (achieving equivalent of UK 2:2 (50%) or US GPA 2.7)
- Evidence of English proficiency at IELTS 5.5 level (with minimum 5.0 in each component) or equivalent:
- College English Test 6 (CET-6) with a score of at least 425
- Duolingo English Test with a score of at least 95 overall, with no component lower than 80
- For more information on how to apply scan the QR code

