

Getting innovative and hands-on with employability skills

Practical work you can talk about

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STEM

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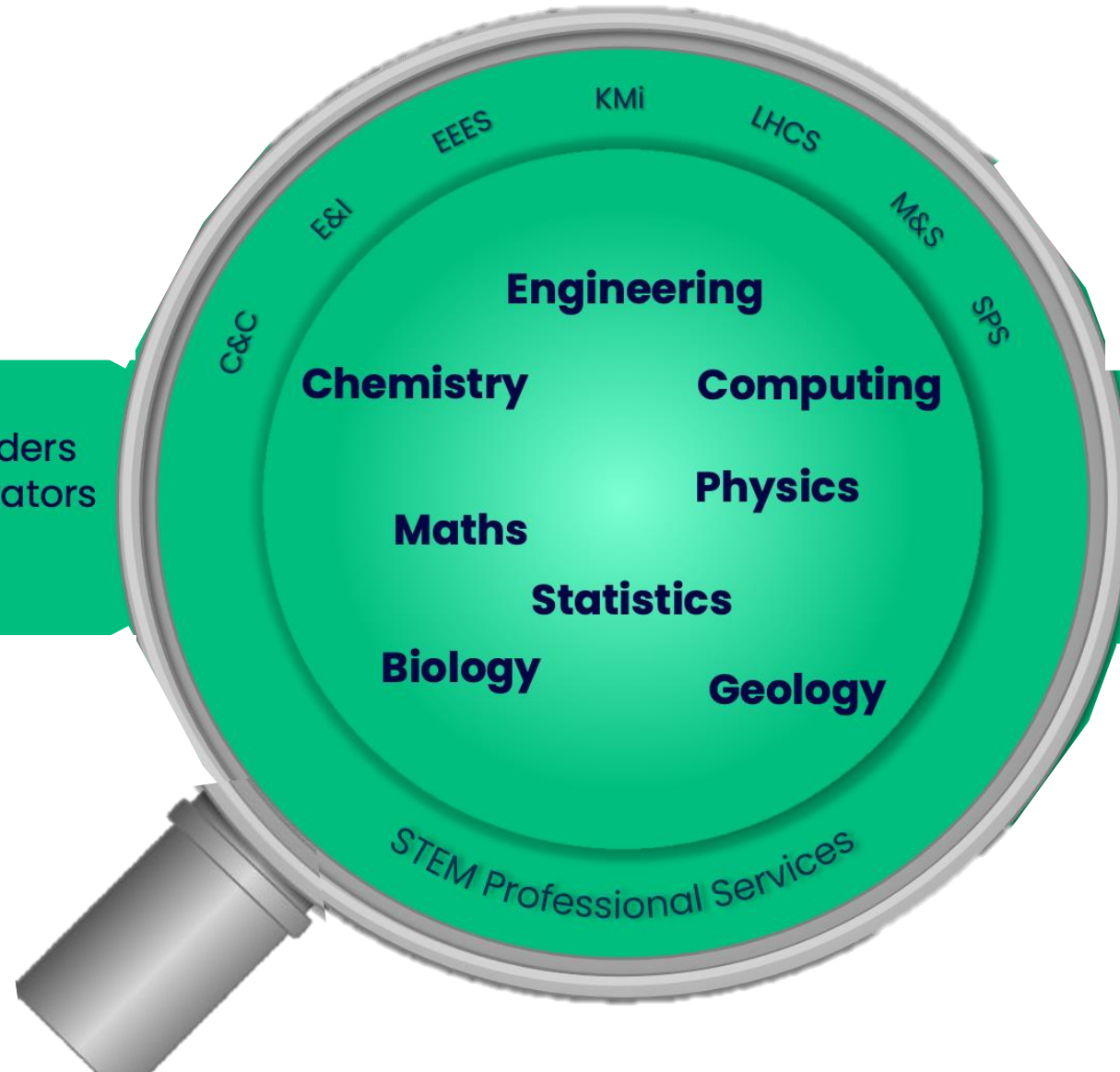
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Audience profile:
See Poll on primary STEM subject

STEM Vision:

Inclusive, innovative and high impact STEM teaching and research, equipping society for tomorrow's challenges



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Audience profile:
See Poll interdisciplinary STEM themes

Our STEM in your future

A STEM Graduate ... a STEM researcher ...

A. Communicates well

B. Expects education for life

C. Is a 'Knowledge Exchanger'

D. Can articulate risk and uncertainty

E. Engages with formal and informal learning

F. Balances depth of subject knowledge with networking

G. Takes a holistic / systems view and copes with complexity

H. Has awareness of Arts/Social Sciences/Languages/Society

Consider True/False?
Select most appealing
Select most challenging

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Audience view:
See Poll on practical work

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Dr Stanley Love, NASA

- Physicist
- Astronomer
- Planetary Scientist
- Astronaut
- Space Engineer
- Artemis Capsule Communicator



The OpenSTEM Labs

Taking laboratories, field sites and observatories to students

- **Interactive:** real data and authentic interfaces
- **Available:** beyond conventional teaching hours
- **Ownership by engagement:** >100,000 student-hours/year
- **Onscreen experiments:** hypothesis-driven enquiries
- **Live data streams:** user-determined sampling
- **Remotely controlled instruments:** individual and group access
- **Labcasts and Fieldcasts:** hypothesis-driven investigations
- **Technical computing:** browser access to software and processing power



Virtual Internship Scheme

Employability for underrepresented students and recent graduates

- **35 paid internships** since 2021 for students from minoritized ethnicities, disabled students, and students from the most deprived areas
- **Flexible, part-time and virtual** – to fit around study and busy lives
- **Diverse opportunities** – many working on co-creation of a more inclusive curriculum and inclusive student experience
- **Winner** of a 2023 sparqs student engagement award in the Diverse Voices category



“My experience with the internship has truly been uplifting... All the experiences that I have gained played a vital role in my job applications and interviews. As a result, I was able to secure a position on a teacher training program that I wanted.”

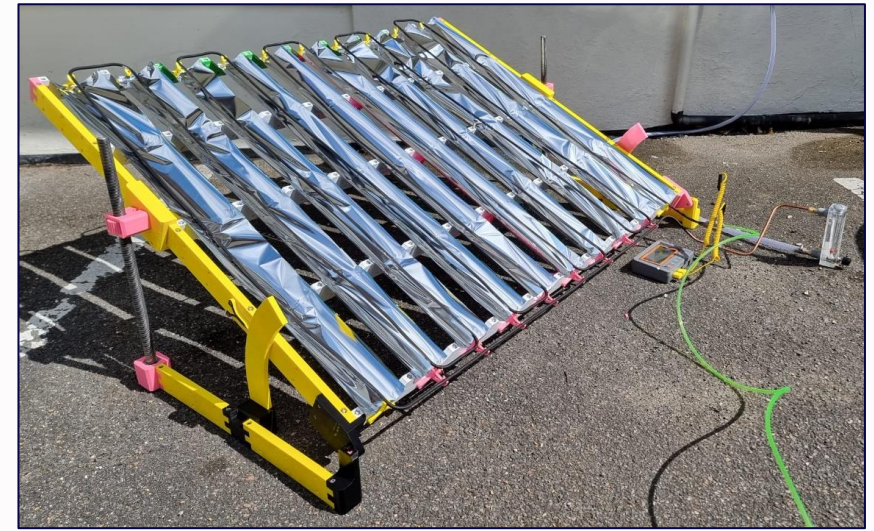
–Norain, STEM intern



Project modules

Addressing the 'sustainability skills gap' in the UK workforce

- **Employers report that** the largest skills gaps include waste reduction, data analysis and energy tracking or usage.
- **Practical, problem solving** – to create and solve a real-world problem from start to finish using prior knowledge from Stage 3 modules
- **Critical information** – Find, critically evaluate and use current information on renewable energy technologies – a rapidly changing field
- **Appraise** results and draw well-grounded conclusions based on the evidence assembled



The magic of renewables

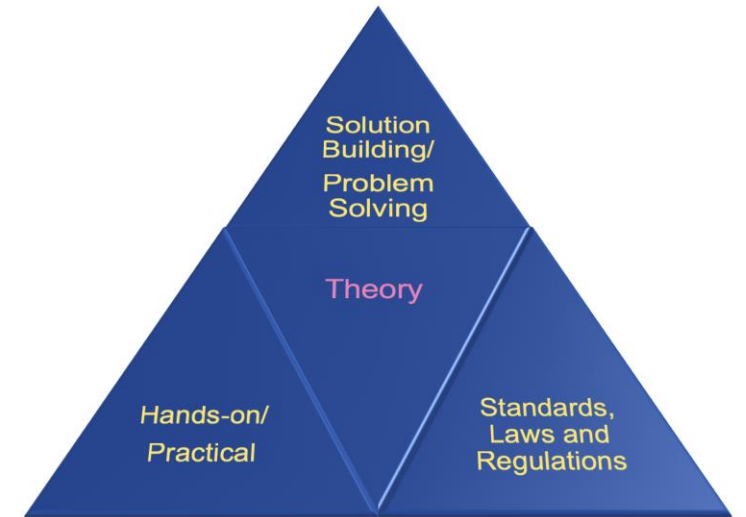
“I was forced to explore areas of science/engineering entirely new to me, such as solar concentrator design/integration methods. During the research phase, I had to scour informational databases, extensively read through and comprehend a multitude of topics – increasing my knowledge significantly.”

–JR , STEM Final Year project student

Employability-driven curriculum I

Meeting the cyber security needs of industry

- **Curriculum** aligned to CyBOK and CII Sec Skills Framework
- **Institute of Coding** inspired competencies and skills focus
- **Core cyber security modules** aligned with industry-recognised certification (CompTIA CySA+ and EC-Council CeH, Cisco Network Security)
- **Accredited by National Cyber Security Centre** (PG accredited in 2023 and the UG later in Oct 2024.)



BALANCED CURRICULUM

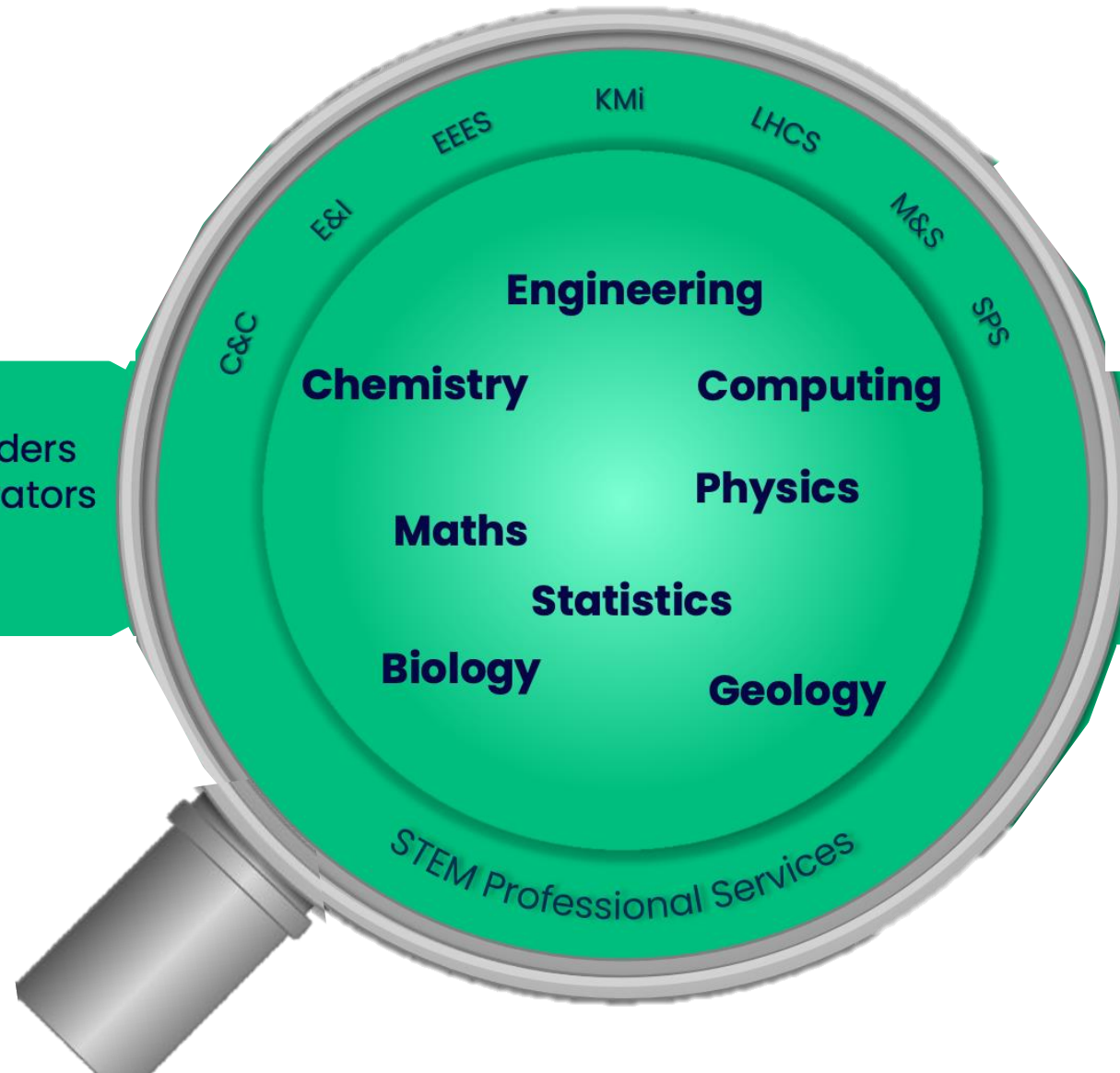
“We are UK’s largest cyber security qualification Provider” (4000+ students currently registered)

Employability-driven curriculum II

Proposals for BSc in Computer Science with Artificial Intelligence

- **Industrial advisory board** – detailed consultation to embed employability skills
- **Qualification-wide Guest lecture series** – talks by industry experts from variety of backgrounds on key qualification topics, and will support professional networking
- **AI Solutions Portfolio** – students can use in interview/selection processes
- **Research focus** – ‘AI in practice’ module where OU research is shared and explored
- **Industry connections** – building OU-industry connections to support students

STEM:



STEM: practical work you can talk about

