



# WHY IT MATTERS...

## MATERIALS & BIO ENGINEERING



Loughborough  
University

### Harriet Hulland

#### Metallurgist at Babcock International

My materials engineering degree gave me the technical knowledge of the structure of materials that I use on a day to day bases to determine root cause analysis for failure investigations and to assess corrosions issues and advice how to best mitigate them where possible.



Without materials engineering many of the things that we use to protect our submarines would not exist, like the acoustic and anti-radar tiles which clad the outsides of the subs, which prevent our submarines from being discovered by their enemies.

The shielding which surrounds the nuclear reactor so that the crew remains safe from the radiation while the reactor powers the electrical generators on the ship. These are materials challenges that have been overcome which would not have been possible without the field of materials engineering.

<b>Post 16 Education</b> A Levels in Maths Physics and Chemistry	<b>Higher Education</b> MEng in Materials Engineering
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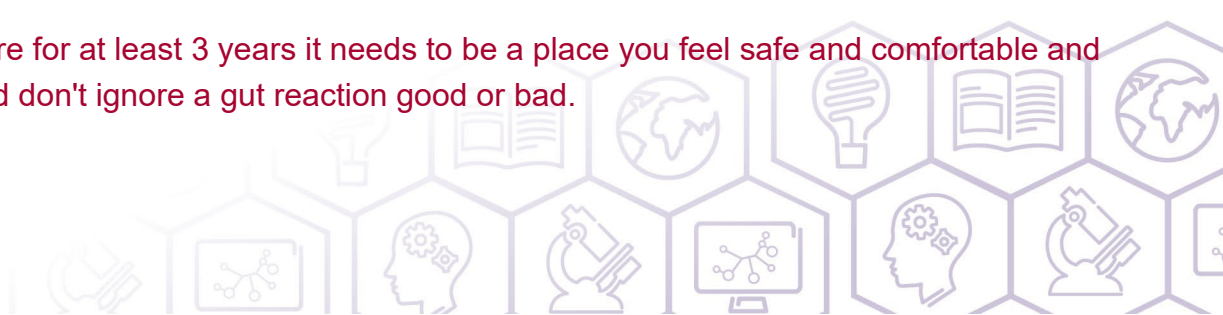
### Why did you choose to study Materials?

I chose to pursue materials engineering as i thought it was the combination of physics and chemistry that I liked with the engineering slant that I found most interesting without some of the hardcore maths that I didn't like.

I also did some research into the field and found it quite interesting, and I thought that I could make a good career out of it which I thought was important as I knew I wouldn't stay in academia.

**Harriet's advice:** my main piece of advice would be go and visit the universities and departments of the courses you are interested in as sometimes talking to lectures and students about the course they can seem quite different to the way they are described on paper.

You will be there for at least 3 years it needs to be a place you feel safe and comfortable and want to live and don't ignore a gut reaction good or bad.





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### Harriet's experience as a student

I chose Loughborough because it felt safe and welcoming when I went to the open-day I also wanted a campus university.

I enjoyed studying at university and found it was more relaxed than school but because my course had a lot of contact hours, I usually had lectures 09:00-17:00 most days so I tended to treat it like school and do my uni work in my gaps between lectures so that when I got home I didn't have to work too much.

As we got Wednesday afternoons off for sport, I joined the girls rugby team and played most weeks. I would strongly suggest joining a club or picking up a sport as it's nice to meet people who are not on your course.

### Harriet's career

I work for Babcock International as a Metallurgist. We support the maintenance and refit of the Royal Navy's fleet of submarines and warships.

I complete failure investigations on components. I also work to help maintain operational condition of the nuclear systems on board so that the submarines can perform their duties of protecting the country without risk of breaking down.

I have always been interesting the defence industry; when I was at school I thought I would join the Royal Navy as an Officer but decided that my interests would allow me to serve better out side of the forces.

The metals related modules of my course are the ones I found most interesting and during our first year we had a guest lecturer from Rolls Royce come and talk about the robotic welding techniques they use to make submarines and I remember finding it particular interesting.

So when I saw Babcock's Materials engineering graduate scheme advertised I decided I should apply as I didn't want to work in research particularly.

**Loughborough University offers undergraduate BEng and MEng degrees in**

Materials Science and Engineering / Automotive Materials / Bioengineering / Biomaterials Engineering