WHY IT MATTERS...
ELECTRICAL & ELECTRONIC ENGINEERING

Loughborough University

Prof. Will Whittow

Professor in Radiofrequency Materials

My specific research area is about antennas and electromagnetics.

This is relevant to many different sectors including: 5G, driverless cars, satellite communications, Internet of Things and sensors, medical implants in the human body and anything else where we want to sense the environment or send information wirelessly.

Our group has a large EPSRC grant “SYMETA” about 3D-printing the next generation of radiofrequency devices (see Figure 1). I am currently leading another EPSRC project ‘ANISAT’ which is aiming to design new radiofrequency materials and devices for satellite communications. As Cubesats (a type of miniaturized satellite) become smaller, they become more economically advantageous in terms of the launch costs, however, the challenges of incorporating effective communication systems in a small space increase.

Post 16 Education	**Higher Education**
A-Level Maths, Physics and Economics	BSc Physics PhD Computational Electromagnetics in an Electrical Engineering Department

Will’s advice: Consider an Engineering degree.

Engineering contributes to ~ 5-6 million jobs in the UK. This is a good degree if you are curious and like solving problems. There are few people in this world who get to do something they enjoy as their career. If you are not studying maths (and physics) consider the Foundation Studies Year which enables students to do a year at uni before their degree starts. You will be working for many years, and one extra year is not a big deal time-wise but will massively increase your career earnings.

There are many paths through life and lots of good options.

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Why did you choose to study Physics?

I didn't know what I wanted to study at university. I had no idea what Engineering was at the time. I actually applied to both Physics and Economics. In the end, I chose Physics as I liked my A-Level Physics teacher. With hindsight, this wasn't a great way to make a decision as clearly he wouldn't be teaching me at university!

Will's experience as a student

Very different in my day if I missed a lecture, I had to photocopy notes, now there is a lot more support online. We covered lots of amazing, crazy stuff like general relatively and quantum mechanics.

Will's Career

I am now a Professor at Loughborough University.

When I was at school I had no idea what I wanted to do at Uni. I had this misconception that Engineering was more practical and less academic. I was very wrong on the 2nd point!

Following my undergraduate degree, I did a PhD in Engineering; that only really happened as I had an interview and the interviewer went on holiday and I ended up doing a PhD with the academic in the office next door!

My PhD led to research roles and then I became an academic in 2012; as an academic I carry out both research and teaching work at the University.

Now I know that Electronics is the future of everything and it is what makes ordinary objects intelligent. Electrical Engineering includes renewable energy; driverless cars; communication; medical technology that allows patients to be treated at their homes; internet security; robotics; and a million other things. Electronics / Electrical Engineering is often hidden and goes un-noticed to an extent, but it is a very important part of the UK economy, contributing 6% to the UK GDP (UKESF, Spring 2018)

As an Engineer, you can make a real difference to the world and help to shape our futures by contributing to the challenges we may face in Energy; Communications; Healthcare; Manufacturing, Transport and many other sectors.

Loughborough University offers BEng and MEng undergraduate degrees in Electronic and Computer Systems Engineering, Electronic and Electrical Engineering, Robotics, Mechatronics and Control Engineering.