



WHY IT MATTERS...

MANUFACTURING & PRODUCT DESIGN ENGINEERING



Loughborough University

George Winfield

CEO (SPYRAS)

For my university placement year I worked for DePuy Synthes, a Johnson&Johnson owned, medical device company designing custom spinal instruments for spinal surgery and also programming and manufacturing 3D printed spines for surgery. They then went on to sponsor my 3rd year thesis.



I was the responsible UK based engineer. I fell in love with the medical side and how engineering is changing the boundaries of medicine. Following graduation I went to Imperial and completed a Research Masters (MRes) - half research and half business (more 'real-world' experience) and only 4 people on my course.

This led to me working on a paper sensor project; using a hygroscopic (ability to adsorb water) material to monitor breathing. What if this technology could lead to a start-up company!

Post 16 Education	Higher Education
AS Level Chemistry	BEng Product Design Engineering, Loughborough University
A Levels Design Tech, Geography & Biology	MRes in Medical Device Design and Entrepreneurship, Imperial College London

I picked those A Levels as I was told to pick the ones I did well in at GCSE - what a mistake that turned out to be! I wanted to do Product Design so took my technical design files to Loughborough University for an interview. I quickly realised that others in the interviews had brought very art based design files. I realised then that engineering was more to my mindset. But, I hadn't taken Maths at A Level! So I did AS maths in Y13 and then worked part-time at a manufacturing firm to complete my A2 Maths. I got a B and went Loughborough University.

For me a BEng in Product Design Engineering bridged the gap between design, engineering and manufacturing with an overview of all aspects of the engineering discipline. It let me satisfy the design side of myself whilst applying my technical abilities to engineering, and eventually finding my niche in Biomedical.

George's advice: Do what you enjoy to an extent but think about opportunities that have tangible outcomes and will open doors. If a degree is for you then think about the job market; the environment is always shifting in terms of what businesses look for so get as much real world experience as you can! Try internships paid or unpaid, shadow someone in the field.



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George's experience as a student

I loved my time at University. Don't get me wrong, my time at Loughborough was very different to my time at Imperial. I went to Imperial at the age of 24 and I had already 'been there done that' as a student at Loughborough so Imperial was very much about networking and taking advantage of that. Loughborough was a great experience and I still have my mates from there today.

George's Career

By the end of finishing my PG degree in 2018, we had raised around £70k in grants and awards to try and see if our breathing research had potential for early detection of sepsis through continuous breathing monitoring. Fast forward a year to the end of 2019 and we have since founded the business (SPYRAS) where I lead as CEO in a team of 5. Building on our knowledge and the team we have won numerous national awards; including the Mayor of London Entrepreneur of the Year, Royal Academy of Engineering labelling me as 'The UK's most promising engineering CEO' and Spyras a runner up in the SantanderUK Universities competition! To kick-start 2020 off we were thrilled to receive a £310k Innovate UK grant means we are looking to develop our breathing technologies and analytics for the sports and consumer market where we can provide analysis on breathing pattern, volume and gases.

As a business, we focus hard on recruiting top software engineering talent with their ability to code hardware and software solutions.

Who knows where you are going to end up! I have friends who did engineering who are now in finance, lawyers who are now medical students. The main thing is that they took a degree that allowed them to develop core foundations and challenge thinking, all of which has led to them being leaders in their industry and given them the foundations to pivot their career as they please. Don't view it as the 'Be all and end all' if you pick the wrong subject, just decide on what will build you and the skillsets you have. I decided to invest in myself and build the best foundations for myself by doing an engineering related degree.

Loughborough University offers degrees in

Manufacturing Engineering / Product Design Engineering / Design / Industrial Design / Product Design and Technology

Please note: Degrees and their titles change over time. Some of these graduates may have studied degrees that have evolved and changed in response to changes in demand from employers.