



MADE
CYMRU

CASE STUDY #3

Upskilling for Industry 4.0

MADE
MANUFACTURE
ADVANCED
DESIGN
ENGINEERING

Upskilling for the future - MADE Cymru MSc student Peter Key shares his learning experience



Until the recent site closure, Peter Key was a Senior Controls Engineer with Ford Motor Company in Bridgend. His main areas of responsibilities included maintenance support across the facility, subject matter expert for controls systems, continuous improvement leader with Six Sigma Kaizen, laser safety officer for the plant, cyber security point of contact and software control administrator. Ford Motor Company is a global car manufacturer with the headquarters in Dearborn, Michigan, USA. Until it closed, he was based in the Bridgend Engine Plant where they produced a range of internal combustion engines ranging from 1.5L inline 3-cylinder engines to 5L V8 engines for Jaguar and Land Rover. Due to the closure, Peter was looking for opportunities to upskill and enhance his already impressive CV. We spoke to Peter to find out about how the course is going.



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David



Cronfa Gymdeithasol Ewrop
European Social Fund



Peter Key,
Current Upskilling for
Industry 4.0 Student

“
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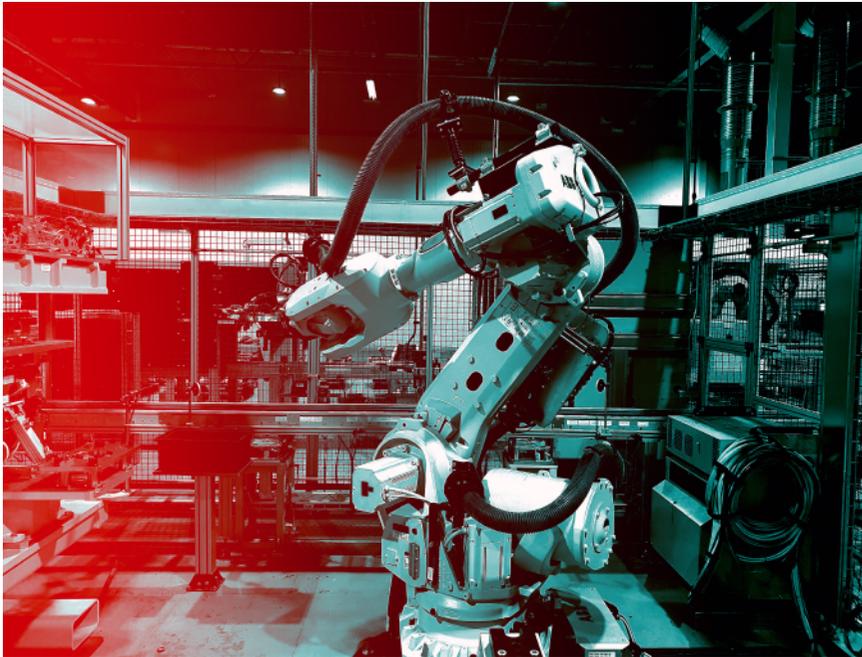
“I heard about MADE Cymru’s MSc in Industry 4.0 Advanced Manufacturing from a number of my colleagues who were part of the previous year’s cohort. Working in a good Industry 3.0 plant, the MSc was a very attractive proposition. The setup of learning virtually over Teams has been very rewarding, it fits around a professional career perfectly. The lecturers set various interactive tasks to engage students very well.

The course has been very rewarding in several ways particularly interacting with professionals outside of my core engineering field and understanding the different perspectives of the other students. Outside of lectures we have broken off into smaller groups to discuss lecture topics and the wider implications of the applications of Industry 4.0.

The Covid-19 pandemic has probably benefited my studying as it has been good to have the focus of the course and the interaction with my lecturers and other students weekly. It has meant I have had more time to commit to reading around the course, there is plenty of good material to expand your knowledge if you’re motivated to do so.

The MSc has opened my perspective, having worked for Ford for many years you tend to have a fairly tunnelled view of manufacturing. Through the lectures and conversations with other students I feel my outlook has expanded considerably. Certainly now, more than ever, I am aware of the ethical and societal implications of Industry 4.0 and the impact on the lives and careers for many people.





Robot cells for the dragon engine head assembly area – both leak test machines, employing the design principles of TPM such as Autonomous Maintenance, Preventative Maintenance and Early Equipment Management with current technology ideally placed to be enhanced with the technologies of Industry 4.0.

The course is well organised with lots of very relevant material, professionally delivered by knowledgeable lecturers. We have had several guest speakers that relate the theory well to real world application. I would not hesitate to recommend the course to fellow professionals.

I've been working on a research project as part of the course. Having a strong background in maintenance support my project is focused on Total Productive Maintenance (TPM) and how Industry 4.0 enhances the eight pillars of TPM. After doing a deep dive on the TPM pillars and the technologies of Industry 4.0, I am setting out a possible transition path to upgrade current manufacturing facilities to Industry 4.0. I'm also looking at implementing a Machine Learning (ML) to predict component failures in Preventative Maintenance (PM) using various regression algorithms programmed in JAVA".





Jaymie Phillips,
MADE Cymru –
Lecturer (I4.0)

“Peter came to the course with an incredible amount of manufacturing experience and skills. We’ve been very impressed with his research project and are excited about the impact it could have to an organisation. Watching the students interact and collaborate has been particularly inspiring to the MADE Cymru team – there’s such a mix of industry size and sector – the knowledge share is an additional benefit to the course.”

Find out more...

In the constantly evolving world of manufacturing, the Upskilling for Industry 4.0 courses are an opportunity to explore new Industry 4.0 digital technologies that can aid the continuous improvement journey, having the potential to increase efficiency, maximise productivity and future-proof the manufacturing industry. All courses are online, flexible and there’s a choice of shorter and longer options. At the moment, the courses are fully funded for eligible businesses.

Upskilling for Industry 4.0 course options:

Continuous Improvement with Industry 4.0 (short course Level 5)

Smart Manufacturing with Industry 4.0 (short course Level 7)

MSc Industry 4.0 Advanced Manufacturing (Level 7)

MADE Cymru is a suite of programmes designed to navigate organisations through Industry 4.0 via collaborative research & development and upskilling. Part/Fully Funded by the European Social Fund/European Regional Development Fund through the Welsh Government. Delivered by University of Wales Trinity Saint David.

Get in contact, call **01792 481199**, email **MADE@uwtsd.ac.uk** or visit **www.madecymru.co.uk**

