IME

Innovation in Manufacturing & Engineering

Leadership and innovation skills for small and medium-sized businesses in the North West

Programme 2015 - 2016

Lancaster University

In partnership with

BAE SYSTEMS
INSPIRED WORK

Co-investment from

UKCES
UK COMMISSION FOR EMPLOYMENT AND SKILLS
UK Futures Programme

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Foreword

Ian Gordon
IME Programme Director

To be competitive in the 21st century, manufacturing and engineering businesses must embrace open innovation. This means working with other small businesses and being part of a wider network. This powerfully supportive and innovative programme creates a network of like-minded manufacturing and engineering small businesses to work with large 'anchor' manufacturing organisations in the North West including BAE Systems, Siemens and the national Catapults. We offer wrap around support on leadership, innovation and technology. Masterclasses, workshops and industrial visits are at the heart of the programme and supported by skills development drawing on the world class experience of Lancaster University.

Explore ways to develop your leadership and innovation capacity, boosting productivity.

It can be lonely being the owner/manager of a small business and the day-to-day activities necessary to run the company can mean that the big picture of where the company is heading gets overlooked.

Working with large regional manufacturing organisations, Lancaster University will lead a seven month programme for small to medium sized enterprises (SMEs) based in the North West who are actively engaged in manufacturing or engineering. We request participants to commit two to three non-consecutive days per month to the programme.

By the end of the programme you and your team will understand the innovation process and have the skills to audit and apply these across every aspect of your business. The programme will allow you to explore ways to develop your leadership and innovation capacity, boosting productivity. You will have a wider and more detailed understanding of new technology and know how to draw on support from the university and wider community.

In summary, participants will benefit from:

- **Business growth via increased turnover and employees**
- **Improved business productivity, key to underpinning innovation**
- **Better leadership skills and self confidence**
- **A more strategic approach to business**
- **Becoming more effective communicators**

Introduction

David Holmes

Manufacturing Operations Director,

BAE Systems Military Air and Information

Innovation is so important for Advanced Engineering and Manufacturing businesses in the region, it is the key to increasing productivity and growth.

If you look back through the history of manufacturing in the North West, it is a region which has never rested on its laurels. The innovators within the sector have constantly pushed forward with new innovations to keep us competing at the cutting edge with the best in the world. Today, this need for constant improvement has never been more important as we seek to boost productivity and growth.

Lancaster University

- Top 10 UK University
- Small Business Charter, GOLD award winner

BAE SYSTEMS
INSPIRED WORK

- Europe's largest Defence and Security company
- World leader in advanced manufacturing capability

Co-investment from
UKCES
UK COMMISSION FOR EMPLOYMENT AND SKILLS
UK Futures Programme

UK Futures Programme investing in innovative approaches to tackle skills and employment challenges

Background

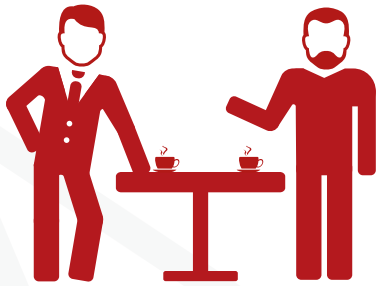
The Innovation in Manufacturing and Engineering (IME) Programme is a collaborative initiative with co-investment from the UK Commission for Employment and Skills (UKCES) and is led by Lancaster University in partnership with BAE Systems.

Lancaster University's Management School (LUMS) and Engineering Department, in partnership with BAE Systems (Operations) Ltd, has developed IME to focus on developing the innovation capacity of small and medium sized enterprises (SMEs) owners/managers, in the Advanced Engineering and Manufacturing sector, in the North West of England. This programme draws upon Lancaster University's integrated learning model employed with great success in our renowned, former, flagship leadership and management programme, LEAD. An independent evaluation of LEAD showed that participants experienced an increase in profit, turnover, employment and productivity.

The programme will develop strategic thinking, innovation capacity and leadership and management skills through masterclasses, workshops, innovation challenges, plus access to regional and national manufacturing anchor organisations. In addition, this programme will support SMEs to gain a better understanding of, and ability to, exploit market opportunities. In the longer term, the IME programme will provide a platform for a new Advanced Engineering and Manufacturing Exploitation Centre (AEM-TEC), based at the Lancashire Enterprise Zone (EZ) at Samlesbury. This facility, to which the government has committed in principle, will support the strengthening of SMEs through access to new technology and innovation for key sectors.

In Lancashire, manufacturing employs almost 80,000 people and accounts for nearly a fifth of its £23 billion economy.

Programme Overview



Overnight Experiential

Two day event that gives delegates the chance to learn about each other in a relaxed environment.

Workshops

In-depth consideration of one or more functional areas of business with a specific emphasis on innovation.

Lancaster University Engineering Department

- Advanced and additive manufacturing technologies and processes
- Accessing research and development facilities across the University

Lancaster University Management School (LUMS)

- Open Innovation and the Business Model Canvas
- Operations
- Leadership and Management

Masterclasses

Leading entrepreneurs share their stories and provide insights into leadership, innovation and growth.

Industrial Visits

A series of visits to 'World Class' large organisations.

Online Forum

Communicate with peers, access course content and additional reading.

Support

- Lancaster University - LUMS and Engineering Department (including student projects)
- BAE Systems
- Peer Network

Integrated Learning Model

Delivered throughout the programme by LUMS. You will explore learning methods that are known to work well with entrepreneurs.

Innovation Exchange

Delegates spend a day in each other's company exploring a specific innovation challenge using the powerful methodology of Action Learning.

Industrial Visits

During the programme you will make at least three visits to world-class organisations including BAE Systems, Siemens and the AMRC Catapult to look in depth at a specific innovation challenge they might be facing. Each organisation will share insights into preferred methods of working across supply chains. They will also demonstrate how they have addressed innovation challenges in the past and how you could be part of their future solutions.

Industrial involvement in the programme will expose delegates to 'world-class' advanced manufacturing environments.

BAE Systems

BAE Systems, provide some of the world's most advanced, technology-led defence, aerospace and security solutions and employ a skilled workforce of some 83,400 people in over 40 countries.

Working with customers and local partners, they develop, engineer, manufacture and support products and systems to deliver military capability, protect national security and people, and keep critical information and infrastructure secure.

BAE SYSTEMS
INSPIRED WORK

Siemens

Siemens is a global technology powerhouse that stands for engineering excellence, innovation, quality, reliability and internationality. The company is active in more than 200 countries, focusing on the areas of electrification, automation and digitalisation. One of the world's largest producers of energy-efficient, resource-saving technologies.

SIEMENS

Large and small businesses working together exploring open innovation.

Advanced Manufacturing Research Centre

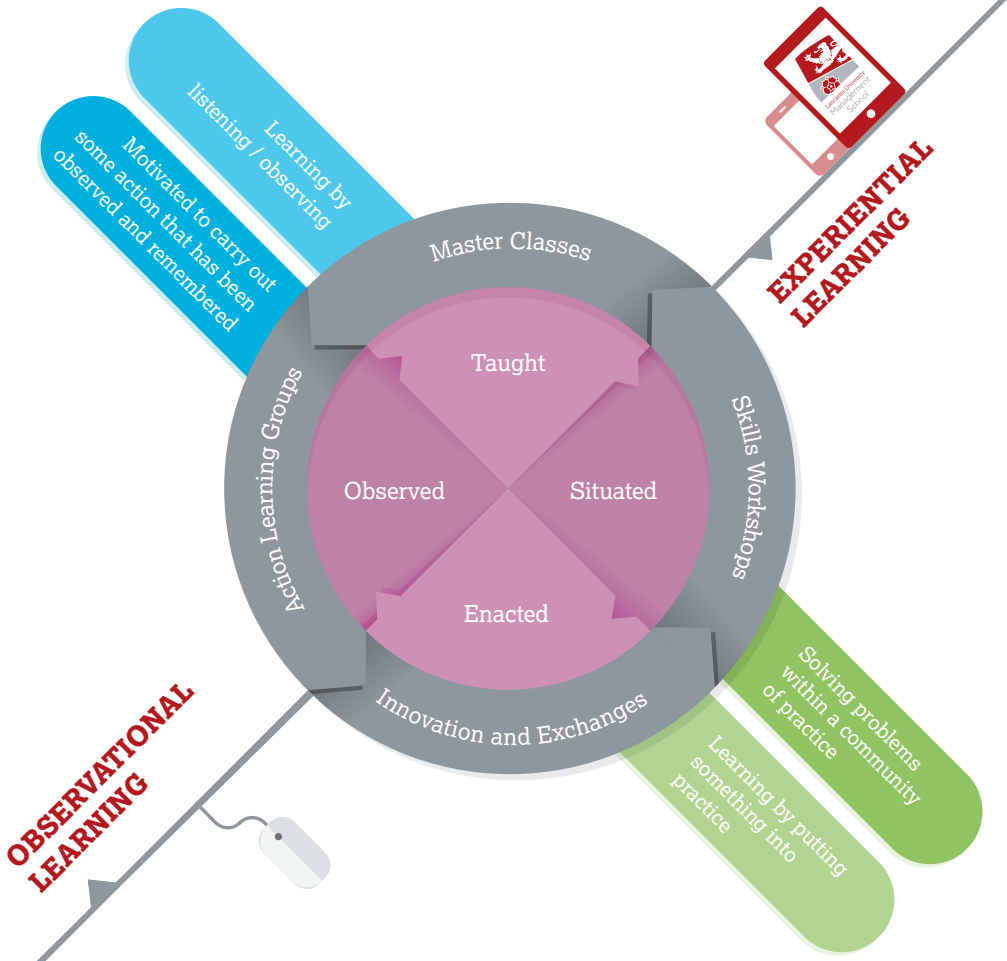
The Advanced Manufacturing Research Centre (AMRC) is a UK manufacturing development resource that matures new technologies and processes allowing for a more seamless transition into industry. The AMRC is linked to the University of Sheffield, meaning the Centre has access to both experienced researchers and engineers. The AMRC helps reduce manufacturing development time, risk and cost therefore, encouraging a more innovative culture. The AMRC is part of the UK High Value Manufacturing Catapult, a UK government initiative aiming to increase UK PLCs manufacturing capability and cost competitiveness relative to the rest of the world.

CATAPULT
High Value Manufacturing

Lancaster University Management School (LUMS)

The programme draws heavily on our research into management and entrepreneurial learning undertaken by the Management School.

Our leadership and management programmes for SMES have been rolled-out successfully across the UK and recognised by national and international awards. Our integrated learning model uses different formats for delivery to maximise the fact that people learn in different ways, giving equal priority to experiential learning and reflective practice.



Our integrated learning model recognises the needs of SMEs and allows us to ''join them in their world''.

Lancaster University Engineering Department

The Engineering Department at Lancaster University is a broad-based engineering centre, with a record of innovative teaching, world-class research and integration with industry.

The department has research interests with an average annual research income in excess of £2.25m, nearly two thirds of which is in collaboration with industry.

As the business partnerships team for the department, Lancaster Product Development Unit (LPDU) is constantly engaged with industry and facilitates the effective use of knowledge exchange; allowing expertise to flow between the university and industry, helping to inspire technological innovation and functional product development.

The programme will provide knowledge of the latest developments in advanced manufacturing, with specific focus on additive manufacturing (3D Printing). We will demonstrate the capabilities and technological benefits of these processes which will impact on the future innovative opportunities available for manufacturing and engineering businesses.

Between 2009-2015 we provided bespoke design and additive manufacturing technology expertise for 156 companies across the North West.

Our new Engineering Building boasts specially designed electronics and mechanical workshops, 3D printing and materials preparation laboratories, chemical engineering facilities, offices and meeting zones.

Student Projects

A number of opportunities exist for SMEs in the North West to utilise the skills and knowledge of Lancaster University Engineering students.

Projects are designed in collaboration with the SME and the Engineering Department to address a technical problem or opportunity via input and resources from the student-team and access to wider facilities in the Department. This joint working enables further development of the business in order to encourage innovation and growth as well as providing students with valuable industrial experience.

The Student Projects will typically be undertaken by small teams of fourth year students as part of an accredited MEng degree. The students will effectively undertake a two-week consultancy-style project equating to approximately 300 hours (based on four students) of input time, supported by an academic supervisor.

Practical Information

Who is Innovation in Manufacturing and Engineering for?

This programme is designed for owner/managers of small and medium-sized businesses based in the North West, who have significant engineering and/or manufacturing capability, who want to develop leadership and innovation skills, through working with large organisations and a leading university.

How will it benefit my manufacturing and/or engineering business?

- Drive performance and success through innovation, leadership and management.
- Traditionally it is hard for SMEs to get access to large organisations, but through this programme you will gain key insights from BAE Systems, Siemens and a Catapult Centre. Large organisations are reaching out to SMEs and eager to improve their supply chains in the region.
- Access to new technology - Keeping up to date on technological developments can be hard for SMEs. In this programme you will get insight into innovative manufacturing techniques, such as additive manufacturing, investigating ways it can be introduced into your business, if appropriate.

How much time do I need to commit?

To get the most value and ensure a strong network is formed, applicants must be committed. Delegates are expected to commit to two to three non-consecutive days per month for the seven-month period.

When does the programme start?

The programme starts early November 2015 and runs through to June 2016. Applications must be received by mid October 2015.

Where does it take place?

The majority of the programme will be held at Lancaster University Management School and Lancaster University Engineering Department. The overnight experiential will be held at a Lancashire country hotel and industrial visits will include BAE Systems at Samlesbury Aerodrome- Blackburn, Siemens Congleton and a High Value Manufacturing Catapult, the Advanced Manufacturing Research Centre, Sheffield.

How much does it cost?

This programme has received co-investment from the UK Commission for Employment and Skills through the UK Futures Programme. The subsidised cost per delegate is £1,500.

For more information contact us on **01524 510703** or visit **lancaster.ac.uk/lums/ime/faqs**

Applicants must be committed and it is this intensity that gives Innovation in Manufacturing and Engineering its unique impact.

Why join the programme...

Scott Waddington Chief Executive of SA Brain & Co Ltd and UKCES Commissioner

The UK Futures Programme will co-create with industry to research, develop, pilot and scale innovative solutions to tackling current and emerging workforce development issues that restrain business performance.

Ian Barton Head of Strategy and Investment Planning, BAE Systems Military Air and Information

Running a successful business on a day-to-day basis demands unrelenting focus and drive, but ensuring the business will continue to be successful in the years to come takes a different approach. This programme presents a unique opportunity for advanced engineering and manufacturing businesses to see how companies like BAE Systems and Siemens create a culture of innovation which delivers benefits in the short and long term.

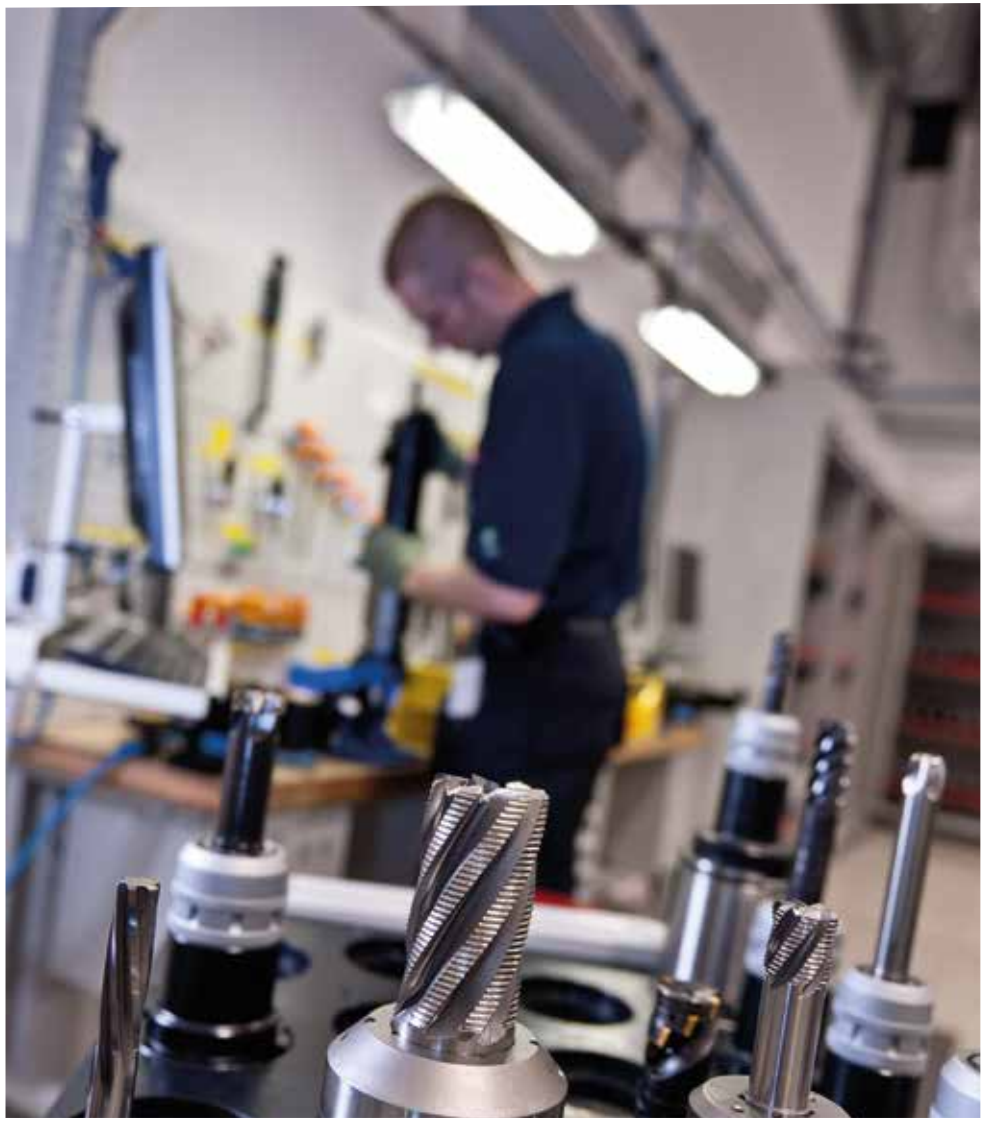
Ian Collier Director of Operations, High Value Manufacturing Catapult

The High Value Manufacturing Catapult is the catalyst for growth and success of UK advanced manufacturing and as such we see SMEs as the fundamental building blocks of the UK's supply chain and a rich source of tomorrow's key technologies. Our centres offer innovation active SMEs access to world-class equipment, expertise and collaborative opportunities to help them turn their technology concepts and good ideas into commercial reality.

Michael Hill Managing Director, Optima Control Solutions Ltd

Like most SMEs Optima Control Solutions Ltd was formed by two ambitious people who, presented with an opportunity, decided to take on the challenge. Then, like many SMEs we enjoyed good organic growth. However, getting beyond the organic stage proved frustratingly difficult. Working with LUMS helped us break through.

Behind any innovation process is the human factor - skills and talents of people which enable an innovation to be taken from an idea to success in the market.



UK manufacturing *is* innovative. This programme will develop the strategic thinking, innovation capacity and leadership and management skills of owners/managers.

How to get involved

For more information or to apply contact
Helen Atherton, IME Programme Manager
ime@lancaster.ac.uk or 01524 593010

Come along to one of our preview sessions
Check the website for available dates
www.lancaster.ac.uk/lums/ime/previewsessions

We look forward to meeting with you and discussing ways this programme can work for your business.

Contact Us

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IME

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