

IBSA Manufacturing Industry Skills Forecasts 2019

Three Key Themes



About IBSA

IBSA is a not-for-profit organisation in the Vocational Education and Training (VET) sector with a focus on bridging the skills gap between what industry needs and what the learner attains.

Within the manufacturing sector, one of our key industry groups, we focus our efforts on understanding industry trends and future workforce needs through consultation and research. Our expertise lies in converting industry skills needs into national occupational standards.

IBSA, through Australian Training Products, develops quality learner-focused accredited learning resources that respond to the needs of TAFEs and RTOs. Australian Training Products, in collaboration with industry, also design and produce bespoke, innovative solutions that support non-accredited workforce training needs.

IBSA is strongly placed to positively impact the VET sector within Australia and globally because of the depth of its engagement with stakeholders across industry, government and training providers.

Our vision

Shaping workforce skills for the future.

Our mission

In partnership with industry and government, strengthen the effectiveness and impact of the VET system to train, upskill and reskill workforces.

The IBSA Group includes:

Australian Training Products – creating resources for RTOs and organisations to use for educating learners

IBSA Manufacturing – the Skills Service Organisation developing qualifications for the Manufacturing industry

IBSA Academy – professional development courses for training practitioners

Projects and Advisory – professional expertise in standards, policy and advice.

An Industry Reference Committee (IRC) Skills Forecast and Proposed Schedule of Work is a report that is submitted to the Australian Industry and Skills Committee (AISC). The report identifies training package development work required to meet industry needs and outlines the evidence of that need. This information is used by the AISC to determine future training package projects.

An Industry Skills Forecast is developed for each training package.

IBSA Manufacturing supports six manufacturing Industry Reference Committees (IRCs) to produce the following Skills Forecasts:

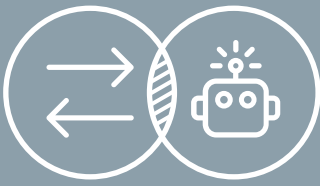
- MEA Aeroskills Training Package MSS Sustainability Training Package
- MEM Manufacturing and Engineering Training Package
- MSF Furnishing Training Package (note the 2019 Furnishing Industry Skills Forecast has not yet been approved)
- MSM Manufacturing Training Package
- MSS Sustainability Training Package
- MST Textiles, Clothing and Footwear Training Package
- MSL Laboratory Operations Training Package
- PMA Chemical, Hydrocarbons and Refining Training Package
- PMB Plastics Rubber and Cablemaking Training Package.

The 2019 Industry Skills Forecasts are based on research, analysis and consultations with IRC members and industry stakeholders and provide evidence of industry trends, opportunities and challenges, as well as current and emerging industry skills needs.

From the range of imperatives and needs raised across the 2019 Industry Skills Forecasts three common themes have emerged:

- Theme 1 – The impact of new technologies
- Theme 2 – An increasing focus on sustainability and the rise of the circular economy
- Theme 3 - Harmonisation of regulations with international standards

This report explores each of these themes and the ways in which they affect the industries represented by the the six IRCs.



Theme 1

The impact of new technologies

The emergence and update of new technologies and the increasing automation of processes and tasks across the manufacturing industry is impacting in the following ways: how the work is done, how businesses operate and on the mix of skills required to undertake the work.

In particular, the rise of the Fourth Industrial Revolution, or Industry 4.0 is creating demand for higher level technician skills, new applications of existing skills and new combinations of skills.

Industry 4.0 involves technology which is used to connect the physical world with the digital world through automation, robotics, machine-to-machine and human-to-machine communication, artificial intelligence, machine learning, sensor technology and data analytics.

What's happening?

Demand for new skills, higher level skills and new combinations of skills

In some sectors, as certain tasks (such as data collection and analysis and diagnostics) are being taken over by machines, skill needs are growing in areas like interpretation and communication of information and data-based decision making.

In other sectors, new and/or higher level skills are in demand for operating new, more sophisticated machinery and technology.

Stronger focus on underpinning skills

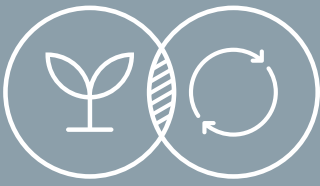
A greater emphasis is being placed on the underpinning skills needed to capitalise on the use of new technologies. These include higher level language, literacy and numeracy (LLN) skills, digital literacy, Science, Technology, Engineering and Maths (STEM) skills and skills in creativity, critical and analytical thinking and complex problem solving.

Transformation of job roles

Some job roles are undergoing transformation as a result of new technology. For example, locksmiths are now as likely, or even more likely, to deal with electronic systems than mechanical ones, changing their role to more of a 'technician' than a 'smith', while jewellers now often use 3D printing to create affordable prototypes for custom-made pieces.

Who's affected?

-  Manufacturing and Engineering
 -  Plastics Rubber and Cablemaking
 -  Sustainability
 -  Textiles, Clothing and Footwear
 -  Laboratory Operations
 -  Process Manufacturing
 -  Aerospace
-
-  Furnishing and Textiles, Clothing and Footwear
 -  Process Manufacturing
 -  Laboratory Operations
 -  Sustainability
 -  Manufacturing and Engineering
-
-  Manufacturing and Engineering
 -  Process Manufacturing



Theme 2

An increasing focus on sustainability & the rise of the circular economy

Imperatives related to sustainability are growing in importance across the industry sectors supported by IBSA Manufacturing.

In part this is driven by societal demands and expectations. Public perceptions of sustainability performance (i.e. triple bottom line or corporate social responsibility) have become important considerations to businesses and most large companies now report on sustainability measures of some kind, regardless of whether it is a legislative requirement.

Improved sustainability practices also improve businesses' efficiency and financial viability. An example of this is the concept of the circular economy, in which "products and materials keep circulating within the economy at their highest value for as long as possible, through reuse, recycling, remanufacturing, delivering products as services and sharing".¹

1. Transforming Queensland's Recycling and Waste Industry, Directions Paper, Queensland Government 2018.

What's happening?

More sustainable business practices

Greater corporate and social responsibility is driving change in business approaches to environmental sustainability, ethical sourcing of materials and products and concerns about industry 'footprints'.

Greater focus on innovation and continuous improvement

An increased focus on sustainability is driving innovation in product design and development, as well as a focus on continuous improvement of business processes and practices to improve efficiency and productivity.

Embedding of circular economy principles

The growing focus on the concept of the circular economy is placing greater attention on issues such as waste reduction, waste management and recycling. In some sectors this is driven by the need to support long term emission targets, while in others it driven by legislative requirements or by rising costs of waste disposal. Recent regulatory changes in China, which have seen the end of Australian exports of waste, are also a significant driver.

It is anticipated that sustainability will become an integral part of the planning system, with circular economy principles embedded throughout the value chain.

Demand for new, specialised sustainability skills

The increasing focus on sustainability is also driving demand for new, specialised skills in areas such as energy efficiency, the use of composites and other lightweight materials

Who's affected?



Textiles, Clothing and Footwear



Sustainability



Chemical, Hydrocarbons and Refining



Manufacturing and Engineering



Plastics Rubber and Cablemaking



Chemical, Hydrocarbons and Refining



Laboratory Operations



Textiles, Clothing and Footwear



Manufacturing



Sustainability



Theme 3

Harmonisation of regulations with international standards

While Australia has grappled with harmonisation of licensing standards at a national level, businesses are now also finding that in order to take advantage of opportunities in global markets, they need to develop the ability to operate within environments of complex global regulation and meet international standards.

What's happening?

Need for harmonisation of regulations to ensure supply of skills

The Australian aerospace industry operates in a highly competitive international arena and is well-recognised internationally for safety and a highly skilled workforce. The lack of harmonisation of Australia's regulations with other leading aviation countries is impacting on the supply of skilled employees.

Changing business practices driven by international standards


International regulations are emerging as a key driver of change, with Australia looking to harmonise to international standards (e.g. emission standards). Global Sustainable Development Goals also underpin many national and international standards and certification schemes that are being adopted in Australia.

Ensuring Australian businesses meet these standards is a key focus of work within the laboratory operations, environmental monitoring and technology and sustainable operations sectors.

Impact of modern slavery legislation on supply chain management

The introduction of modern slavery legislation in Australia in 2018, modelled on regulations from other parts of the globe, has increased the focus on the responsibility of companies to more closely monitor and manage their supply chains, both nationally and internationally.

Who's affected?

 Aerospace

 Process Manufacturing

 Laboratory Operations

 Sustainability

 Textiles, Clothing and Footwear

 Sustainability



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