

MANUFACTURING IN THE **FOOD AND BEVERAGE INDUSTRIES**



A guide on how to use this Industry Pack

Resource for teachers and students

This industry pack is a resource designed to support the Manufacturing Careers Short Course. It connects classroom lesson plans, assessment tasks and the Manufacturing Matters website: manufacturingmatters.com.au.

COVER PAGE

Identifies the main manufacturing industry explored in this pack. Each industry pack is assigned an alphanumeric code, such as M4, to assist in identifying the industry pathway pack in various printed and digital outputs. There are 14 pathways in total.

» *Use to identify workplaces or industries of interest for Assessment 1.*

PAGE 1

Provides an overview of the specific manufacturing industry. It briefly explains where the industry operates and provides a basic understanding of relevant industry subject matter. **Supports Lesson 1 & 3.**

» *Use to identify key interests or targeted questions for Assessment 1.*

PAGE 2

Features images and descriptions of the manufacturing industry. These examples support further independent research by providing clear visual references for inspiration. **Supports Lesson 1 & 3.**

» *Use to direct independent research to prepare targeted questions for Assessment 1.*

PAGE 3

A career story offers real-life insight into an individual working in the manufacturing industry. It highlights variability in career pathways and offers real-world context of roles and progression within the sector. **Supports Lesson 3.**

» *Use for Assessment 1 & Assessment 2 to understand pathways and core skills, attributes and knowledge.*

PAGE 4

Includes:

- A map of Queensland to prompt a guided Google Maps research activity into where manufacturing industries are located.
- Industry specific search strings to assist further independent research into the industry.
- Links to job search platforms to research employment opportunities in the industry in Queensland.

Supports Lessons 8 to 13 & 16.

» *Use for Assessment 1 & Assessment 2 to identify local industries and support independent research into job skills, attributes and knowledge gathering search terms.*

PAGE 5

Provides an overview of educational training pathways and connects to the Career Bullseye highlighting roles at various Levels on the following page. **Supports Lessons 16 & 17.**

» *Use for Assessment 2 to understand pathways into specific roles.*

PAGE 6

An interactive Career Bullseye indicates roles within the industry at various Level (1 – 4) and allows for quick cross-industry comparisons on flexible career pathways. **Supports Lessons 1 & 3.**

» *Use for Assessment 2 to understand pathways into specific roles and cross-industry relevance.*

PAGE 7

Focuses on the first career pathway theme: **“Leading Teams”**.

Highlights the skills, qualities and attributes required for leadership roles and provides a list of examples to support further independent research. **Support Lessons 11, 18 & 19.**

Note: More detailed job descriptions are available on the Manufacturing Matters website. These may be made available as printed copies also.

Note: Additional videos are available to support this section exploring select “Leadership” and “On the Tools” occupations.

» *Use for Assessment 2 to identify skills, attribute, knowledge and/or experience as pathways into specific roles in interested manufacturing industries.*

PAGE 8

Focuses on the second career pathway theme: **“On the Tools”**.

Highlights the skills, qualities and attributes required for hands-on roles and provides a list of examples to support further independent research. **Support Lessons 2, 6, 11.**

Note: More detailed job descriptions are available on the Manufacturing Matters website. These may be made available as printed copies also.

Note: Additional videos are available to support this section exploring select “Leadership” and “On the Tools” occupations.

» *Use for Assessment 2 to identify skills, attribute, knowledge and/or experience as pathways into specific roles in interested manufacturing industries.*

PAGE 9

Provides an overview of the Future of the Industry and how technology is changing it. The section highlights skills needed for the future and growing trends in the industry. **Supports Lessons 12 & 13.**

» *Use to identify targeted questions for Assessment 1 and for Assessment 2 for planning careers pathways and future skills, attributes and knowledge.*

PAGE 10

Includes helpful online resources for further exploration of manufacturing industries. A matrix is provided that identifies all 14 core manufacturing industry pathways to discover!

» *Use for Assessment 1 & Assessment 2 to expand independent research into pathways, core skills, attributes, and knowledge.*

Understanding the Food and Beverage Industry in Queensland

The Food and Beverage manufacturing industry in Queensland represents a significant component of Australia's manufacturing sector and food production capabilities. This sector combines traditional food processing with advanced manufacturing technologies to serve both domestic and international markets.

FOOD MANUFACTURING IN QUEENSLAND

Queensland's food manufacturing sector integrates primary food processing with modern production technologies. In the consumer sector, manufacturers produce a comprehensive range of products including processed meats, dairy products, baked goods, and confectionery. Many manufacturers specialise in custom food production, with particular emphasis on health foods and dietary requirements. Ready-to-eat meal production has grown significantly, reflecting Queensland's changing lifestyle and consumer preferences.

The commercial food sector serves diverse market segments including hospitality, educational institutions, and healthcare facilities. Queensland manufacturers have developed particular expertise in producing food products that meet the specific requirements of Australia's tropical and subtropical environments. This includes considerations for shelf stability and temperature control in humid conditions.

BEVERAGE MANUFACTURING IN QUEENSLAND

The beverage manufacturing sector encompasses a broad range of specialised production activities. Non-alcoholic beverages form a substantial segment, with manufacturers producing soft drinks, juices, dairy drinks, and bottled water suited to Queensland's climate. Many of these manufacturers have developed niche markets by focusing on products adapted to local preferences and requirements.

Alcoholic beverage manufacturing includes craft beer brewing, spirit distilling, and ready-to-drink production. These subsectors often combine traditional manufacturing techniques with advanced technology, particularly in areas such as fermentation and quality control. Queensland's brewing industry has evolved to incorporate modern brewing technology while maintaining traditional brewing capabilities.

Manufacturing Support Industries

The industry is supported by a network of specialised facilities including cold storage operations, packaging

facilities, and quality testing laboratories. These support industries are crucial to the sector's success, providing essential services and materials. Ingredient suppliers and equipment manufacturers form an integral part of the supply chain, often developing custom solutions for specific manufacturing requirements.

Advanced Manufacturing Technologies

Contemporary food and beverage manufacturing in Queensland relies heavily on advanced technologies. Automated processing lines and food safety monitoring systems are now standard in most facilities. These technologies enable precise production methods while maintaining cost-effectiveness. Quality control systems and inventory management procedures have been developed to meet international standards while addressing local market needs.

Skills and Workforce

The industry depends on a highly skilled workforce including food technologists, production managers, quality assurance specialists, and machine operators. Food safety supervisors and laboratory technicians play crucial roles in maintaining quality and compliance. The sector actively collaborates with training institutions to develop and maintain these essential skills.

Manufacturing Locations

Manufacturing facilities are strategically positioned throughout Queensland, with significant concentrations in Brisbane's food production precincts and the Gold Coast's beverage manufacturing zones. The Bundaberg and Cairns regions have developed specialised manufacturing capabilities, often focused on particular market segments or production techniques.

Sustainable Practices

Sustainability has become increasingly important in the sector. Manufacturers are implementing sustainable sourcing practices, energy-efficient processes, and waste reduction programs. Advanced packaging systems are becoming standard, reflecting both environmental concerns and food safety requirements.

The industry provides significant employment opportunities and contributes to Queensland's domestic production while supporting related sectors such as agriculture, retail, and hospitality industries. This manufacturing network ranges from large-scale food producers to specialised artisanal manufacturers, creating a diverse and resilient industry sector.



Warehouse Operator, using a forklift to move bags of sugar for export.



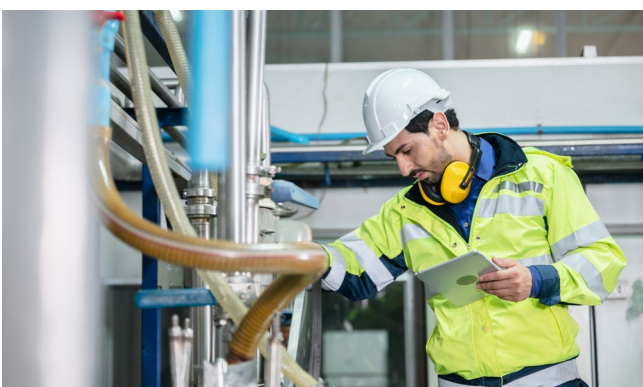
Process Worker at a carbonated drink manufacturer overseeing bottles on the conveyor belt.



Food Process Worker at a craft brewery, checking product quality.



Process Workers and a production manager at a tomato processing plant.



Quality Assurance Officer inspects production plant equipment.



Food Technologist inspecting grains.

Images in this document have been supplied by Manufacturing Skills Queensland and industry partners. Additional images have been sourced through Adobe Stock or generated using Adobe and Google AI software. Design layout by Liveworm, Queensland College of Art and Design, Griffith University.

Career Stories

Chief Executive Officer

As CEO of a craft distillery, I oversee our business operations in Miami on the Gold Coast. Our primary business involves the production of distilled spirits, and we're directly connected to the resources required for our industry. We operate mainly in the food and beverage sector of manufacturing, though this encompasses both production and hospitality aspects. Our core business can be described as a premium spirits manufacturer, exporter, hospitality venue owner and tourism business.

Year 10 students might interact with our products primarily through our bottling and packaging operations. When asked about technological trends or innovations that could impact our industry over the next 5-10 years, I don't foresee any significant disruptions. However, there are notable non-technological factors influencing our workforce and strategic direction. We demonstrate strong diversity across genders, ethnic backgrounds, and social backgrounds. We maintain a neutral stance on Net Zero emissions targets and Sustainable Development Goals.

My core role focuses on building the business and brand globally. A typical day involves building out and implementing new ideas, talking to international customers, and traveling the world to introduce consumers to our craft distillery brand and products through masterclasses. I'm also constantly seeking new sites both within Australia and globally for new bars.

My journey to this position didn't involve higher education or specific trade qualifications. I've been working for myself for over 30 years, starting several businesses before opening the business I always wanted to. Prior to entering the industry, I had very limited knowledge about manufacturing and no experience in the spirits industry. What attracted me to manufacturing was seeing people enjoying something I had made.

I brought 30 years of business experience working for myself to this role. Since starting, I've had to learn everything about distilling and the spirits industry in a very short time - from how stills work and how spirits are made to packaging and sales techniques. The most challenging aspect is government compliance, but the most rewarding part is people loving our products.

The key skills I've developed in this role are problem-solving, decision-making, and leadership. For students interested in similar roles, I recommend studying these general subjects: Business, Chemistry, Design, Economics, and General Mathematics. Applied subjects that would

be beneficial include Business Studies, Engineering Skills, and Hospitality Practices.

My advice to Year 10 students considering a career in manufacturing is: "Be open to learning and don't expect to be the boss from day one."

"The key skills I've developed in this role are problem-solving, decision-making, and leadership."



Industry Map



FINDING INDUSTRY NEAR YOU

Want to see what Industry is around you? Here's how to do it on Google Maps!

Start by going to:

maps.google.com

Quick tip: Sign in if you want to save places for later!

Begin finding Pathways to Industry by typing what you're looking for using the knowledge you have, and include where you want to find it, for example:

"brewing facility Bundaberg QLD"

For this specific industry here are some terms to try:

- Food manufacturer
- Food manufacturers Regional/North Queensland
- Food production facilities
- Commercial food manufacturers
- Beverage manufacturers
- Commercial/industrial beverage industry

Add "industrial" or "commercial" before terms

Use "facility" or "factory" to find manufacturing sites

Include "processing" or "production" to filter out retail locations

Some general search tips:

- Always include both "QLD" and "Queensland" in separate searches
- Add your postcode or "near me" to find stuff nearby
- Moving around the map? Click "search this area" to find new places
- Want to see how big a place is? Switch to Satellite View!
- Use Street View to get a closer look
- Found something interesting? Save it to your lists

Don't forget to check regular Google Search too! Sometimes you'll find different results there.

EXTENDING YOUR INDUSTRY KNOWLEDGE ONLINE

Here are some useful web search queries to find out more about this industry:

- automated food processing systems
- beverage formulation technology
- food preservation innovations
- aseptic packaging methods
- food safety monitoring systems
- production line automation
- ingredient processing technology
- thermal treatment systems
- quality control automation
- smart packaging solutions

EXPLORING INDUSTRY PATHWAYS ONLINE

Search for manufacturing jobs in Queensland using platforms like Seek, Indeed, and LinkedIn. Filter results by location and experience level to find opportunities ranging from production line work to engineering roles. Use specific keywords like "advanced manufacturing careers" to discover industry trends and requirements.

seek.com.au

au.indeed.com

linkedin.com

Industry Pathways

In Queensland, an industry training pathway blends secondary school education with hands-on vocational training, allowing students to gain practical skills and qualifications while completing their high school certificate.

These pathways often involve partnerships between schools, TAFEs (Technical and Further Education), and industry, providing students with apprenticeships, traineeships, or work experience in their chosen field.

This combination of classroom learning, and real-world experience gives students a head start in their careers and helps them transition smoothly into the workforce or further tertiary education.

What does an industry training pathway look like?

The four education and training levels serve as a general guide and represent the most common educational and/or entry-level requirements for these roles.



LEVEL 1

Typically requires skills equivalent to the completion of Year 10, a Senior Secondary Certificate of Education, or a Certificate I or II. Australian Apprenticeships may be available at this level.



LEVEL 2

Typically requires skills equivalent to a Certificate III or IV, or at least three years of relevant experience. Australian Apprenticeships may also be available at this level.



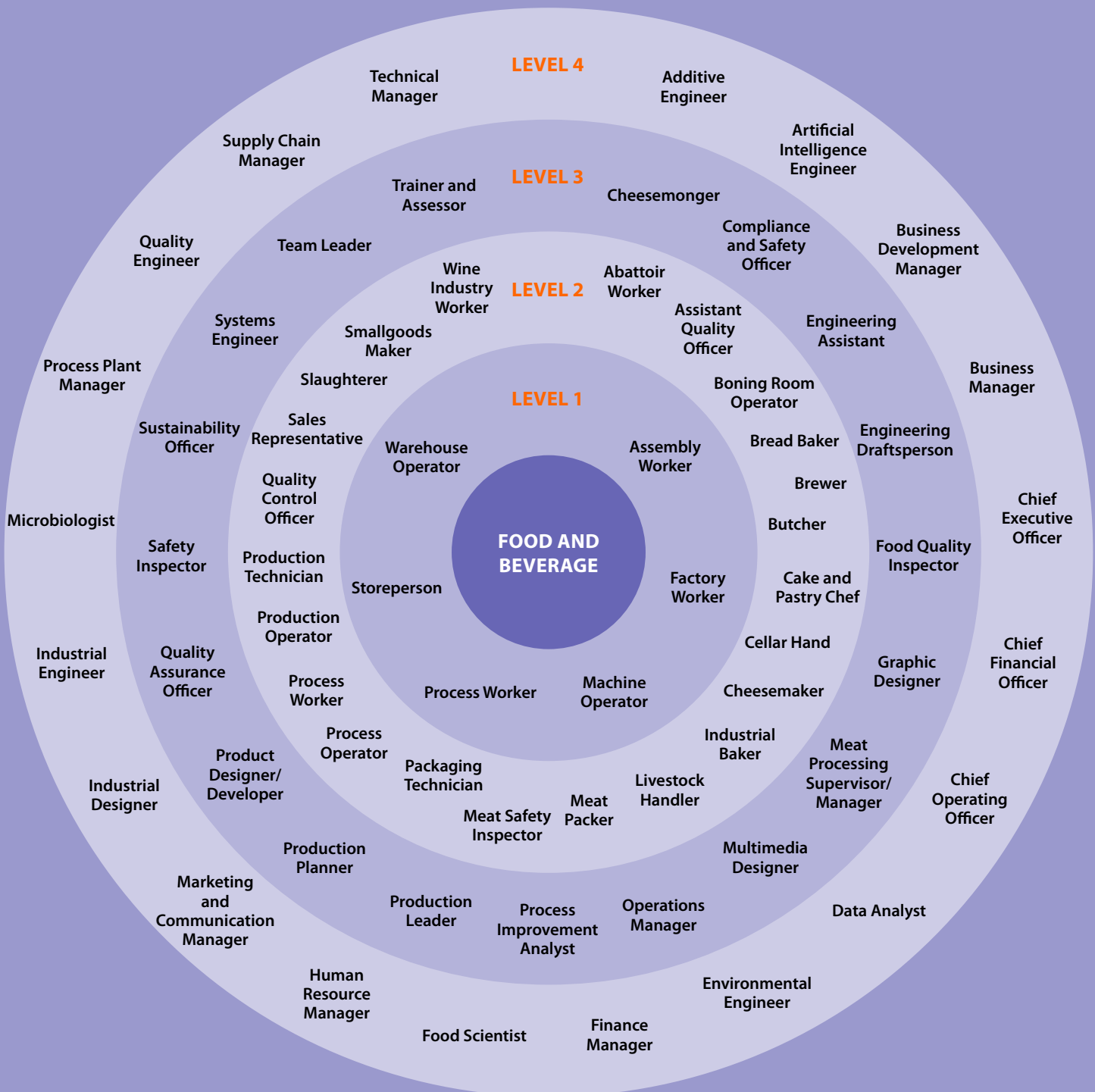
LEVEL 3

Typically demands a level of expertise equivalent to a Diploma or Advanced Diploma, often gained through TAFEs or Registered Training Organisations. Some universities also offer programs at this level.



LEVEL 4

Typically requires qualifications equivalent to a Bachelor's Degree or higher. This level of education is usually pursued at a university.



CORE INDUSTRIES

Aerospace and Defence
Chemicals, Hydrocarbons and Refining
Food and Beverage
Furniture and Other Products
Meat and Seafood Processing

General Manufacturing and Engineering
Pharmaceutical and Medical Technology
Polymers, Plastic and Rubber
Printing and Graphic Arts

Pulp, Paper and Packaging
Renewables
Textiles, Clothing and Footwear
Timber and Wood
Transport Equipment and Machinery

SUPPORTING INDUSTRIES

Laboratory Operations
Process Plant Operations
Sustainable Operations

For further information, visit:

manufacturingmatters.com.au/careers

Industry Pathways - Leading Teams



Leading a team is about more than just managing tasks; it's about inspiring, motivating, and guiding a group of individuals towards a shared goal. A good team leader fosters a collaborative and supportive environment where everyone feels valued and empowered to contribute their best.

ROLE OF A TEAM LEADER

- **Setting a Vision:** Clearly define goals and objectives, and communicate them effectively to the team.
- **Providing Direction:** Guide the team's efforts, ensuring everyone understands their roles and responsibilities.
- **Motivating and Inspiring:** Encourage and support team members, recognising their achievements and fostering a positive work environment.
- **Facilitating Collaboration:** Promote teamwork, open communication, and constructive conflict resolution.
- **Delegating Effectively:** Assign tasks based on individual strengths and skills, empowering team members to take ownership.
- **Monitoring Progress:** Track the team's performance, providing feedback and making adjustments as needed.
- **Developing Individuals:** Support the growth and development of team members through mentoring, coaching, and training opportunities.

QUALITIES AND ATTRIBUTES OF A GOOD TEAM LEADER

- **Strong Communication Skills:** Clearly and effectively convey information, actively listen to team members, and provide constructive feedback.
- **Integrity and Trustworthiness:** Act with honesty and ethical principles, building trust and respect among team members.

- **Emotional Intelligence:** Understand and manage their own emotions and those of others, fostering empathy and positive relationships.
- **Decisiveness:** Make informed and timely decisions, even in challenging situations.
- **Accountability:** Take responsibility for the team's performance, both successes and failures.
- **Problem-Solving Skills:** Identify and analyse challenges, develop creative solutions, and guide the team through obstacles.
- **Adaptability:** Adjust to changing circumstances, embrace new ideas, and remain flexible in their approach.

JOB TITLE

Industry roles where qualities of leadership, effective communication and specialist knowledge are valued.

- Chief Executive Officer
- Chief Operating Officer
- Chief Financial Officer
- Process Plant Manager
- Technical Manager
- Supply Chain Manager
- Human Resource Manager
- Finance Manager
- Marketing and Communication Manager
- Business Manager
- Business Development Manager
- Meat Processing Supervisor/Manager
- Operations Manager
- Team Leader
- Production Leader (Food and Beverage)
- Production Planner
- Safety Inspector
- Industrial Engineer

For further information, visit:

manufacturingmatters.com.au/careers/

Industry Pathways - On the Tools



Jobs involving hands-on work with technology are increasingly common, blending technical expertise with manual dexterity and problem-solving skills. These roles often involve building, repairing, installing, or maintaining technological equipment and systems.

QUALITIES NEEDED FOR THESE ROLES:

- **Manual Dexterity:** Skilled and precise use of hands and tools to manipulate small components and perform intricate tasks.
- **Technical Knowledge:** Understanding of the technology they work with, including its principles, operation, and maintenance.
- **Problem-Solving Skills:** Ability to diagnose issues, identify solutions, and apply critical thinking to resolve technical challenges.
- **Attention to Detail:** Accuracy and precision in their work, ensuring that equipment is assembled and functioning correctly.
- **Patience and Persistence:** Ability to work through complex tasks methodically and remain focused, even when facing setbacks.
- **Communication Skills:** Clearly explain technical issues to colleagues or clients and work effectively in a team.
- **Physical Stamina:** May involve lifting, bending, and standing for extended periods.
- **Up-to-date Knowledge:** A willingness to learn and stay current with rapidly evolving technologies.
- **Adaptability:** Adjust to changing circumstances, embrace new ideas, and remain flexible in their approach.

JOB TITLE

Industry roles that can be considered 'on the tools' which requires different levels of training and specialist knowledge.

- Food Scientist
- Microbiologist
- Quality Engineer
- Artificial Intelligence Engineer
- Data Analyst
- Environmental Engineer
- Food Quality Inspector
- Sustainability Officer
- Process Improvement Analyst
- Quality Assurance Officer
- Product Designer/Developer
- Engineering Assistant
- Systems Engineer
- Compliance and Safety Officer
- Trainer and Assessor
- Multimedia Designer
- Butcher
- Cheese Maker
- Production Operator (Food and Beverage)
- Production Technician (Food and Beverage)
- Quality Control Officer (Food and Beverage)
- Wine Industry Worker
- Cake and Pastry Chef
- Bread Baker
- Industrial Baker
- Brewer
- Cheesemonger
- Packaging Technician (Food and Beverage)
- Process Worker (Confectionery)
- Process Worker (Oil Mill)
- Process Worker (Pet Food and Stock Feed)
- Process Worker (Dairy)
- Processing Operator (Mill)
- Cellar Hand (Distillery)
- Cellar Hand (Brewery)
- Assistant Quality Officer (Food and Beverage)

For further information, visit:

manufacturingmatters.com.au/careers/

Future Industry



FUTURE TRENDS AND INNOVATION

The future of Queensland's Food and Beverage manufacturing industry aligns with Australia's national economic priorities, particularly in sustainable manufacturing, digital transformation, and food security. These changes support the Future Made in Australia plan's goals of strengthening sovereign manufacturing capabilities and developing advanced food processing skills.

KEY TRENDS INCLUDE:

Digital Manufacturing: Integration of artificial intelligence and digital twin technology in food processing, enabling precise production control and reducing waste. This includes advanced sensor systems that optimise production efficiency and ensure food safety compliance.

Novel Food Products: Development of new plant-based alternatives and functional foods, aligned with the growing demand for sustainable and health-conscious products. This includes alternative proteins and fortified food manufacturing capabilities.

Advanced Processing Technologies: Implementation of robotics and automated handling systems in food processing, supported by industry-specific digital skills training programs.

Sustainable Manufacturing: Adoption of closed-loop manufacturing processes, including biogas generation from food waste and water recycling systems.

FUTURE ROLES IN THE INDUSTRY

Leadership Roles:

- Alternative Protein Production Manager: Oversees novel food manufacturing
- Digital Operations Director: Leads smart factory implementation

- Sustainability Manager: Coordinates circular economy initiatives
- Food Innovation Leader: Implements new product development

Technical Roles:

- Food Technology Specialist: Maintains advanced processing equipment
- Digital Systems Technician: Programs automated production systems
- Novel Foods Specialist: Develops new food products
- Robotics Maintenance Engineer: Services automated handling systems
- Industry 4.0 Trainer: Supports workforce digital transition

FUTURE SKILLS FOCUS

Emerging skills requirements across all levels include:

- Digital literacy and data analysis
- Automated systems operation
- Sustainable manufacturing practices
- Food safety and compliance
- Cross-disciplinary communication

These emerging roles emphasise the integration of digital technologies and sustainable manufacturing processes. The industry offers new career pathways through technical training programs and micro-credentials, with particular focus on developing digital skills in traditional food processing roles.

Other Resources

For further information, visit:

MANUFACTURING MATTERS

manufacturingmatters.com.au

MANUFACTURING SKILLS QUEENSLAND

msq.org.au

QUEENSLAND STATE GOVERNMENT

Department of State Development, Infrastructure and Planning

statedevelopment.qld.gov.au/industry/critical-industry-support/industry-roadmaps

Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development

nrm.mrd.qld.gov.au/manufacturing

BUSINESS QUEENSLAND

business.qld.gov.au/industries

REGIONAL DEVELOPMENT AUSTRALIA

rdabrisbane.org.au

ADDITIONAL GOVERNMENT LINKS

Food and Beverage Manufacturing Australia

energy.gov.au

Food and Beverage Industry Queensland

business.qld.gov.au

INDUSTRY ASSOCIATIONS

AIFST: Food Science and Technology as a Career

aifst.asn.au

Other Core Industries to Discover

Check out these other core manufacturing industries to understand the similarities and differences between them!

M1

M2

M3

M4

M5

M6

M7

M8

M9

M10

M11

M12

M13

M14

M1 Aerospace and Defence

M2 Chemicals, Hydrocarbons and Refining

M3 Food and Beverage

M4 Furniture and Other Products

M5 Meat and Seafood Processing

M6 General Manufacturing and Engineering

M7 Pharmaceutical and Medical Technology

M8 Polymers, Plastic and Rubber

M9 Printing and Graphic Arts

M10 Pulp, Paper and Packaging

M11 Renewables

M12 Textiles, Clothing and Footwear

M13 Timber and Wood

M14 Transport Equipment and Machinery