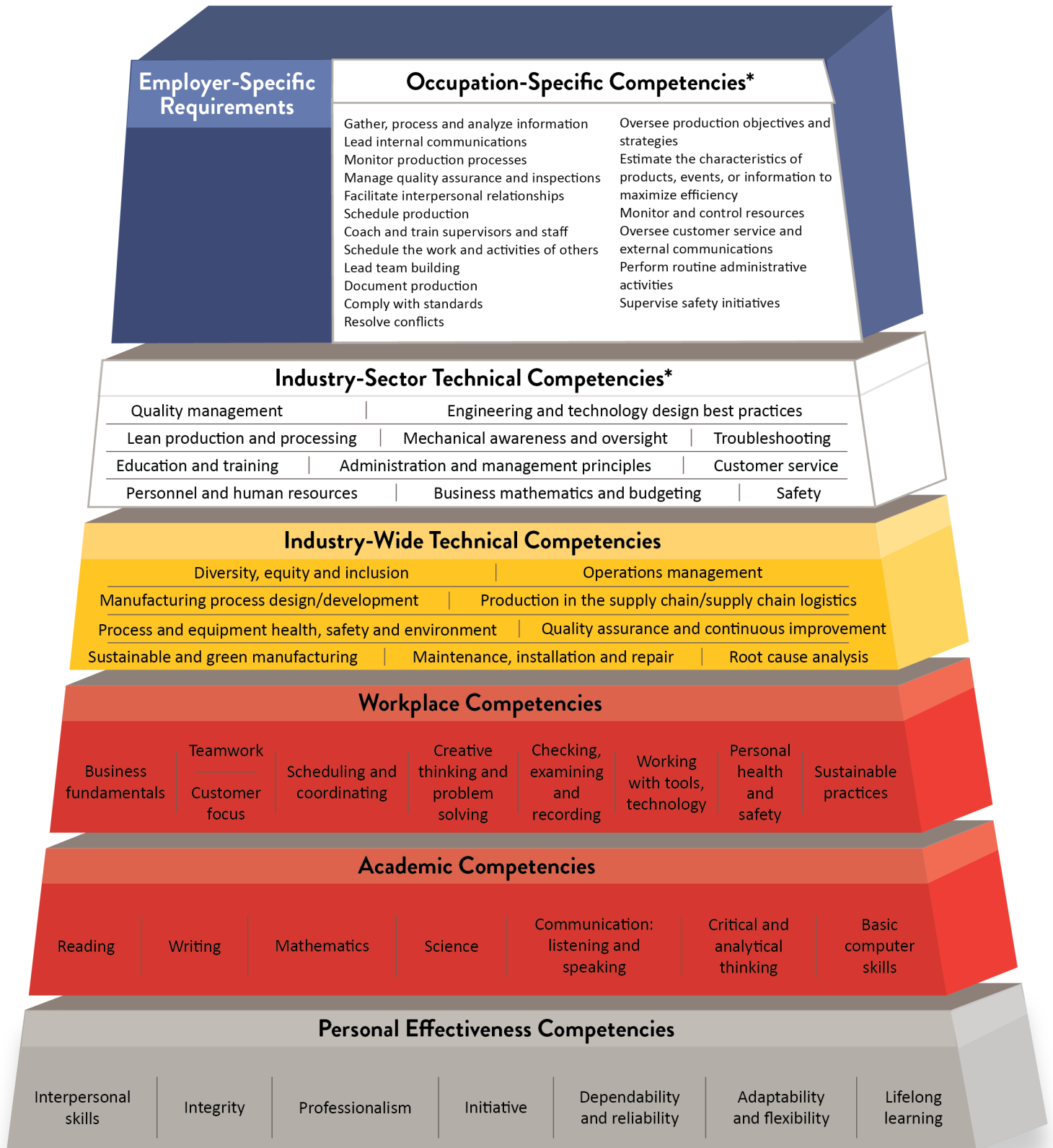


Minnesota Dual-Training Pipeline

Competency Model for Advanced Manufacturing

Occupation: Industrial Production Manager



Based on: Advanced Manufacturing Competency Model, Employment and Training Administration, United States Department of Labor, February 2025. For more detailed information about competency model creation and sources, visit dli.mn.gov/business/workforce/advanced-manufacturing.

Competency Model for Industrial Production Manager

Industrial Production Manager – This position is responsible for planning, directing, and/or coordinating the work activities and resources necessary for manufacturing products in accordance with cost, quality, and quantity specifications for a manufacturing facility. The individual in this role is a significant leader in ensuring overall production goals of the manufacturing facility are met in a safe, efficient, and timely manner.

*Pipeline recommends the Industry-Sector Technical Competencies as formal training opportunities (provided through related instruction) and the Occupation-Specific Competencies as on-the-job (OJT) training opportunities.

Industry-Sector Technical Competencies

Related Instruction for dual training means the organized and systematic form of education resulting in the enhancement of skills and competencies related to the dual trainee's current or intended occupation.

- **Quality management** – Understand how to oversee production so that it is met to key standards, quality measures and ensure production staff make products that satisfy quality standards for manufactured goods.
- **Engineering and technology design best practices** – Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services in an efficient manner.
- **Lean production and processing** – Knowledge of raw materials, production processes, quality control, costs, and other techniques to maximize the effective manufacturing and distribution of goods while also eliminating waste.
- **Mechanical awareness and oversight** – Knowledge of the facility's machines and tools, including their designs, uses, repair, and maintenance. Ability to oversee that each machine and tool is being used safely and effectively.
- **Troubleshooting** – Understand how to work with production staff and floor supervisors when a problem arises in a manner that brings people together to develop solutions that will overcome the problem.

- **Education and training** – Knowledge of principles and methods for curriculum and training design in manufacturing, teaching and instruction for individuals and groups, and the measurement of training effects.
- **Administration and management principles** – Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
- **Customer service** – Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- **Personnel and human resources** – Knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, labor relations and negotiation, and personnel information systems for the manufacturing facility.
- **Business mathematics and budgeting** – Knowledge of arithmetic, algebra, geometry, calculus, statistics, accounting, and their applications. Also, understand clearly how to develop budgets for the manufacturing facility that account for materials, staffing, facilities cost, etc.
- **Safety** – Knowledge of safety best practices, laws and standards for the manufacturing industry.

Occupation-Specific Competencies

On-the-Job Training is hands-on instruction completed at work to learn the core competencies necessary to succeed in an occupation. Common types of OJT include job shadowing, mentorship, cohort-based training, assignment-based project evaluation and discussion-based training.

- **Gather, process, and analyze information** — Know how to observe, receive, and otherwise obtain information from all relevant sources. Process that information to consider each factor and then analyze the information to make informed decisions to improve production capabilities at the manufacturing facility.
- **Lead internal communications** — Understand how to provide clear information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- **Monitor production processes** — Know how to monitor and review information from materials, events, or the environment the production cycle, to detect or assess problems with the production floor processes and make necessary adjustments.

- **Manage quality assurance and inspections** — Understand how to oversee that the production facility is maintaining high quality standards for production by inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects with products.
- **Facilitate interpersonal relationships** – Develop constructive and cooperative working relationships with staff and colleagues in the production facility and maintain those relationships over time.
- **Schedule production** – Develop specific goals and plans to prioritize, organize, and accomplish the completion of the facility's production work so that it meets goals and deadlines for production.
- **Coach and train supervisors and staff** – Understand the process to identify developmental needs of manufacturing supervisors and staff and coach, mentor, or otherwise help them to improve their knowledge or skills. This may also include identifying the educational needs of others, developing formal educational or training programs or classes, and teaching or instructing others.
- **Schedule the work and activities of others** – Understand the process to motivate members of a manufacturing group to work together to accomplish tasks. Scheduling events, programs, and activities, as well as the work schedules of others in a manufacturing facility.
- **Lead team building** – Know how to encourage and build mutual trust, respect, and cooperation among team members at a production facility.
- **Document production** – Understand the process to enter, transcribe, record, store, or maintain information in written or electronic/magnetic form to ensure production standards and compliance.
- **Comply with standards** – Know how to use relevant information and individual judgment to determine whether events or processes comply with laws, regulations, or standards for manufacturing.
- **Resolve conflicts** – Know how to handle complaints, settle disputes, and resolve grievances and conflicts, or otherwise negotiate with others.
- **Oversee production objectives and strategies** – Understand how to establish long-range production objectives and make the necessary decisions to ensure that strategies and actions are taken to achieve them.

- **Estimate the characteristics of products, events, or information to maximize efficiency** – Know how to estimate sizes, distances, and quantities; or determining time, costs, resources, or materials needed to perform a work activity with the goal to use this information to create improvements and maximize efficiency at the production facility.
- **Monitor and control resources** – Knowledge on how to monitor and control resources and oversee the spending of money to ensure optimal efficiency for overall plant production.
- **Oversee customer service and external communications** – Understand how to communicate with people outside the organization in a timely manner, representing the manufacturing business to customers, the public, government, and other external sources. This information can be exchanged in person, in writing, or by telephone or e-mail.
- **Perform routine administrative activities** – Understand how to perform day-to-day administrative tasks such as maintaining information files and processing paperwork for the production facility.
- **Supervise safety initiatives** – Provides appropriate safety and health accident prevention guidance for the work of the manufacturing facility, and investigation training for managers and supervisors.

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