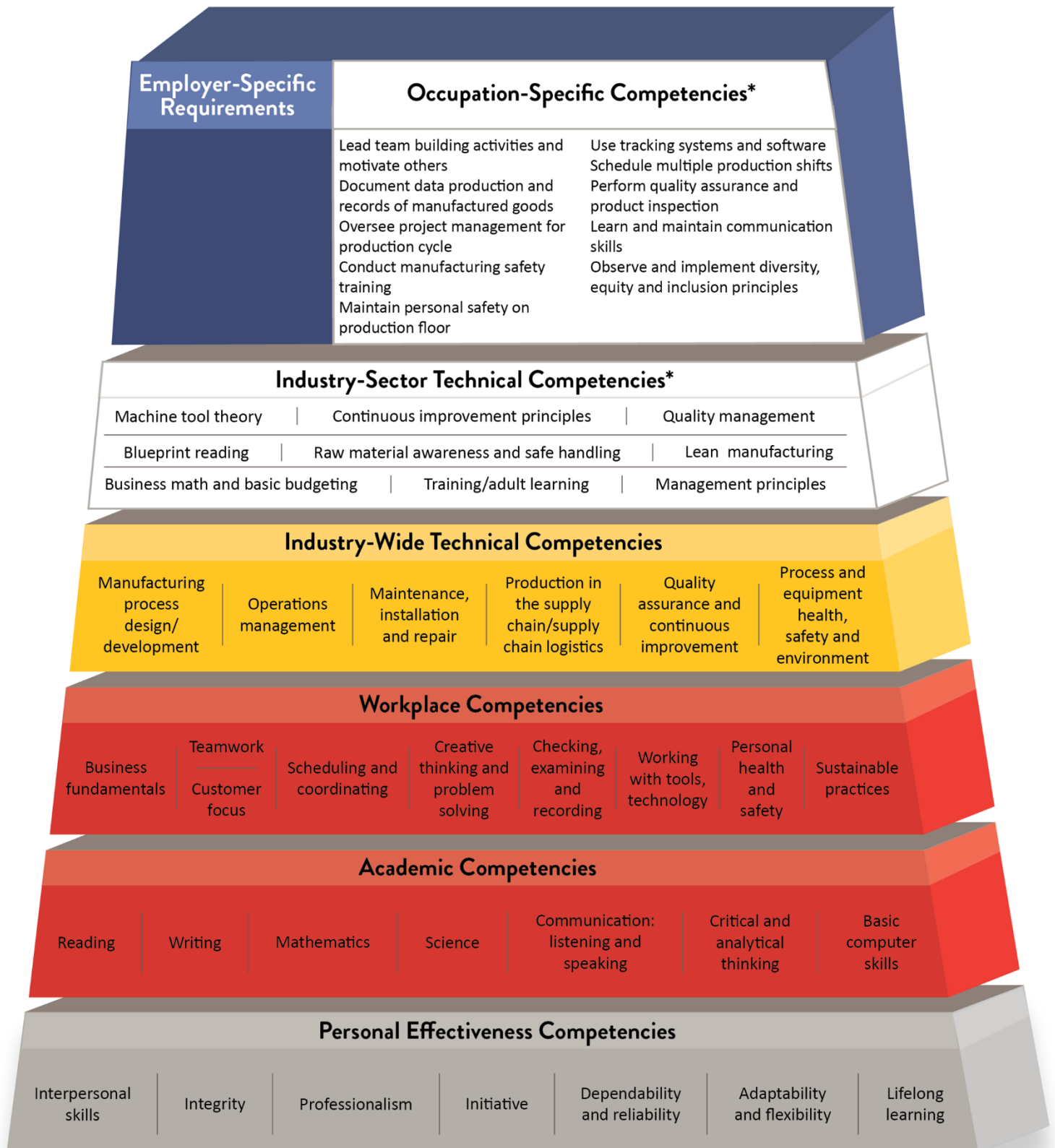


Minnesota Dual-Training Pipeline

Competency Model for Advanced Manufacturing

Occupation: Manufacturing Production Supervisor



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 Manufacturing Production Supervisor

Manufacturing production supervisor – This position is responsible for directly supervising and coordinating the activities of production and manufacturing operating workers such as inspectors, precision workers, machinists, machine setters and operators, assemblers, welders, and plant and system operators. A manufacturing production supervisor will oversee production processes from start to finish to ensure staff make products in the manufacturing facility that meet quality standards, are completed on time, at cost and with safety assured for staff throughout the entire manufacturing process.

*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.

- **Machine tool theory** – Learn to complete the processes required for manufacturing a precision part, use standard shop safety practices, set-up and operate standard manufacturing machines, complete accurate lay-outs, explain applications of hand tools and use correctly and use basic measuring tools.
- **Continuous improvement principles** – Understands how to look for ways to minimize and reduce process wastes, to notice and correct machine abnormalities, to maintain records and to adapt to process changes such as cycle times, set-ups, and tooling.
- **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.
- **Blueprint reading** – Knowledge in reading and understanding of industrial prints.

- **Raw material awareness and safe handling** – General understanding of the different raw materials possibly involved in production and how certain machine settings, temperatures, etc. can potentially impact different materials.
- **Lean manufacturing** – Know how to develop strategies and processes throughout production that maximize efficiency and eliminate waste.
- **Business math and basic budgeting** – Training in basic math including linear measurement, metrics, and some calculus in addition to knowing how to do basic budgeting.
- **Training/adult learning** – Understand how to effectively train and present materials to adult learners.
- **Management principles** – Understand theories related to management, leadership and how to do team building for workers in a manufacturing facility.

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.

- **Lead team building activities and motivate others** – Know how to have staff develop a culture that is supportive of individuals and the collective team. Ability to help production staff better work together and be excited about their overall work on the floor.
- **Document data production and records of manufactured goods** – Know how to regularly maintain records of materials used, products made and timing for set-up, operation cycle time and change over to new / different product(s).
- **Oversee project management for production cycle** – Understand how to oversee a product's production life cycle from design elements to production implementation and ultimately full-scale production.
- **Conduct manufacturing safety training** – Understand how to train staff on how to operate safely in the production facility.
- **Maintain personal safety on production floor** – Know how to use proper industry standards to maintain a safe work environment and to ensure personal well-being for yourself and all production workers.

- **Use tracking systems and software** – Understanding of how to use individual tracking systems and software such as Microsoft Excel, etc. to guide work processes, product completion, and assist with scheduling for staffing.
- **Schedule multiple production shifts** – Know how to schedule employees for their various shifts, vacations, etc. and to also plan for shift change overs, potential overtime, etc.
- **Perform quality assurance and product inspection** – Know how to check that finished products meet specified standards and how to train and oversee production staff on how to look for quality measures and how to do basic inspection.
- **Learn and maintain communication skills** – Know how to effectively communicate goals, wants, needs for company success with diverse team of staff you oversee as production supervisor in addition to others in the company who are at similar management levels and beyond.
- **Observe and implement diversity, equity, and inclusion principles** – Understand principles of diversity, equity, and inclusion, how they impact your workforce and how to promote a company culture that embraces principles of diversity, equity, and inclusion within your workforce at the manufacturing facility.

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