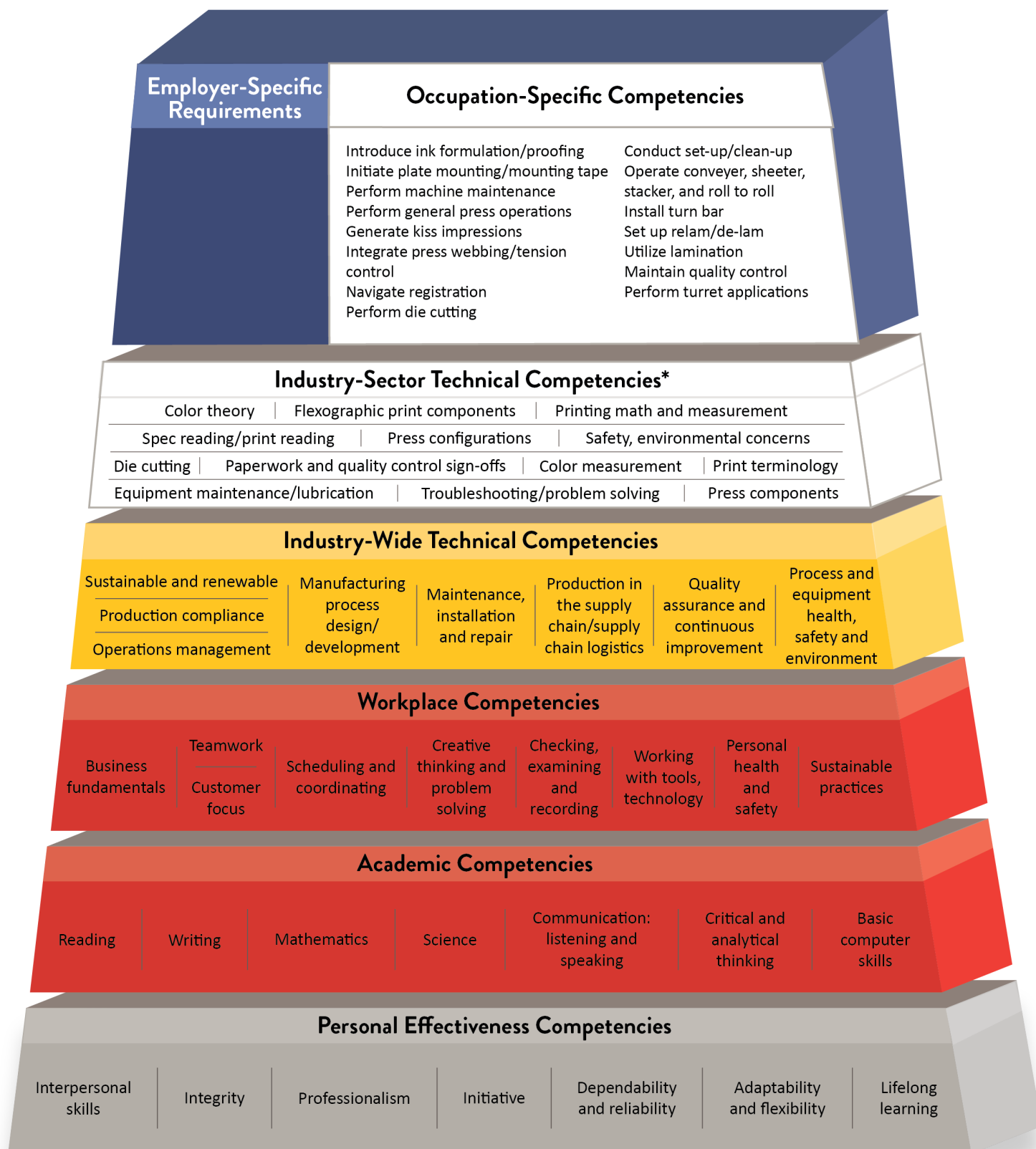


# Minnesota Dual-Training Pipeline

## Competency Model for Advanced Manufacturing

### Occupation: Flexo Technician



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](https://dli.mn.gov/business/workforce/advanced-manufacturing).

## Competency Model for Flexo Technician

**Flexo Technician** – An individual responsible for the printing of flexographic materials, which include large solids, screen tints, line and halftones with critical color values and varying registration requirements. The individual makes necessary color corrections and/or press adjustments prior to the production run to meet quality specifications. A flexo technician also works to maintain and repair the printing equipment.

\*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.

- **Press components** – Understand the purpose, importance and proper maintenance and safety of press components such as (doctor blades, anilox rolls, gears and tooling, and dies).
- **Flexographic print components** – Understand the various inks and substrates systems and proper maintenance for water, UV/LED and solvent-based ink as well as the substrate they are printed on.
- **Color theory** – Understand basic color theory and its impact on the perception of color.
- **Color measurement** – Understand density, dot gain, lab color space and the proper use of a spectrodensitometer for measuring them.
- **Die cutting** – Understand the fundamentals of precision die cutting, including how they cut, tooling specifications, maintenance and safety.
- **Printing math and measurement** – Training in basic math including linear measurement and print related math, including converting counts to feet, calculating total footage based on repeats and quantity requires.
- **Press configurations** – Learn the different flexographic press configurations, component arrangements and the markets that they serve.

- **Print terminology** – Understand common print terminology and how it relates to the flexographic printing industry.
- **Safety and environmental concerns** – Knowledge in proper safety for equipment and manufacturing facilities and environmental concerns for the flexographic industry.
- **Paperwork and quality control sign offs** – Know the proper methods and instruments used to effectively inspect final printed products.
- **Troubleshooting / problem solving** – Practice training on common problems and solutions as well as training on trouble shooting guidelines and processes.
- **Equipment maintenance / lubrication** – Practice industry approved procedures for preventative maintenance and lubrication on machines and tools.
- **Spec reading/print reading** – Knowledge in reading and understanding print specs.

## 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.

- **Introduce ink formulation and proofing** – Demonstrate basic ink formulation to match drawdowns to sample with a Delta E of 2.5 or less. Training in proper procedures, formulation math, color measurement ink adjustment and proper use of the drawdown tool.
- **Initiate plate mounting and mounting tape** – Demonstrate accurate flexographic plate mounting for a specific unwind direction and understand the fundamentals of the various mounting tapes and the type of print they would be used for.
- **Perform machine maintenance** – Demonstrate basic press maintenance, with basic cleaning and maintenance procedures for the printing machine.
- **Perform general press operations** – Demonstrate proper press operations to productively set up and run simple Line work, complex Line Work, 4 Color process, 2 Over 4, front and back, 8 color work, and multiple die sets.
- **Integrate press webbing and tension control** – Demonstrate proper web handling and tension techniques including the proper use of the unwind tension, infeed nip, pacing tension and outfeed pacing tension as well as other various tension application for inline converting.
- **Generate kiss impressions** – Able to properly and productively set kiss impressions on a narrow web press.

- **Navigate registration** – Demonstrate the ability to register multiple colors to each other as well as dies.
- **Perform die cutting** – Demonstrate proper installation maintenance and safety of a rotary or magnetic die and exhibit a clear understanding of how a die cuts and the importance of a die stain test.
- **Conduct set-up / clean-up** – Demonstrate safe, proper and productive procedures for repeatable setting up and cling up of a flexographic press.
- **Operate conveyer, sheeter, stacker, roll to roll** – Demonstrate the ability to install set up and properly stack product using a conveyer, sheeter or stacker. Finish products can also be roll to roll.
- **Install turn bar** – Demonstrate the ability to install web register and print on both sides of the web.
- **Set up relam/de-lam** – Demonstrate the ability to properly set up, register print, and maintain tension while de-laminating then re-laminating a substrate.
- **Utilize lamination** – Demonstrate the ability to properly install web and set tensions using laminate.
- **Maintain quality control** – Demonstrate and understand quality control as it relates to the manufacturing environment.
- **Perform turret applications** – Demonstrate the proper procedures for setting up, webbing and running a turret rewinder.

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