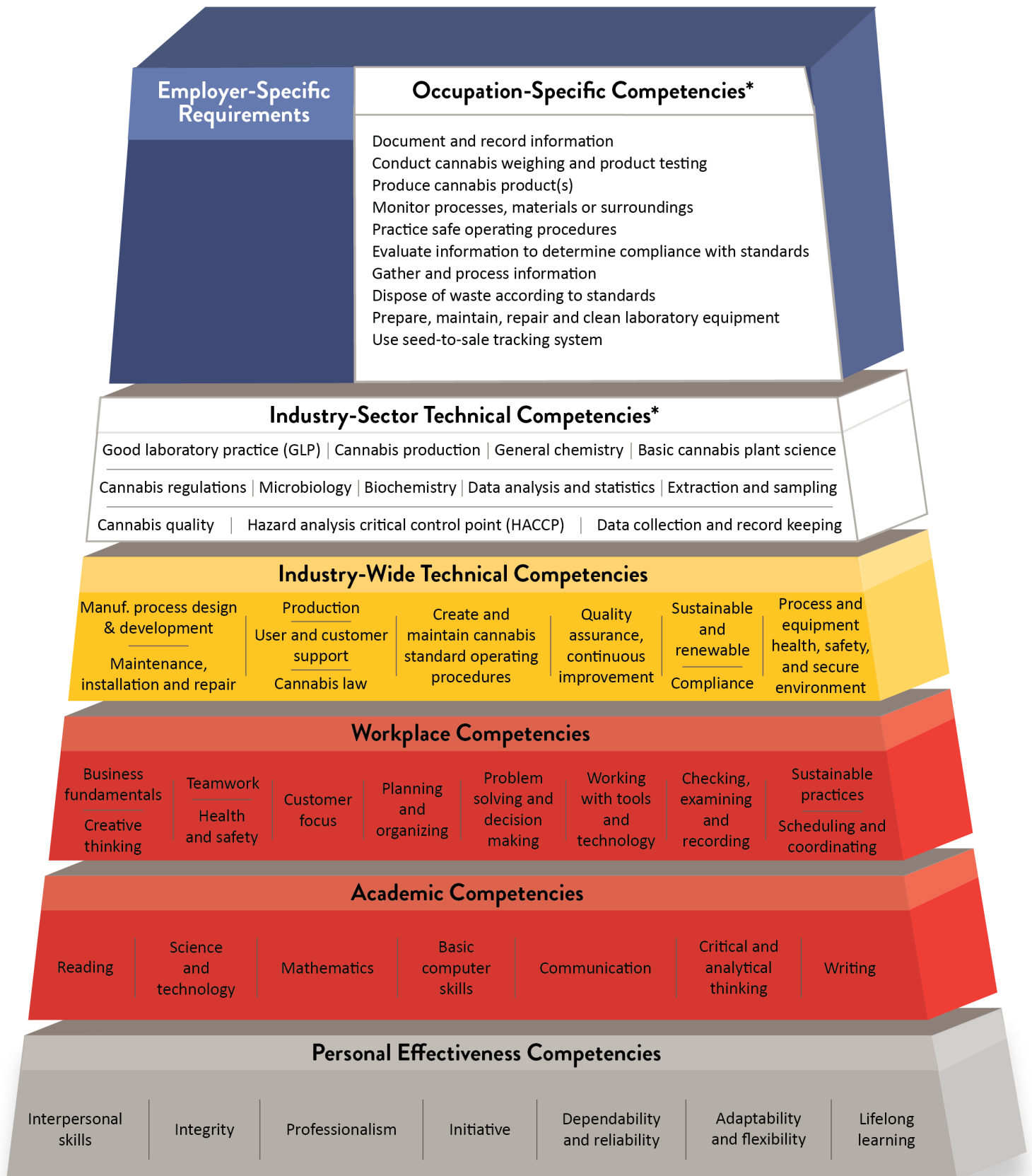


Minnesota Dual-Training Pipeline

Competency Model for Legal Cannabis Industry

Occupation: Cannabis Laboratory Technician



Based on: Building Blocks for Competency Models – Foundational Competencies, 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/legal-cannabis-industry.

Competency Model for Cannabis Laboratory Technician

Cannabis Laboratory Technician – This position sets up, operates, maintains laboratory instruments and equipment, assists with experiments, collects data and samples, makes observations, conducts weighing and tests, and calculates and records results to promote the safe production of quality cannabis flower and cannabis products as defined in Minnesota law. An individual in this role may also assist scientists, production staff, and quality assurance leads with their work in the facility.

*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.

- **Good laboratory practice (GLP)** – Know the industry-recognized best practices to create a quality system of management controls for research laboratories and organizations to ensure the uniformity, consistency, reliability, reproducibility, quality, and integrity of products in development for human or animal health (including pharmaceuticals) through non-clinical safety tests.
- **Cannabis production** – Knowledge of techniques and equipment for planting, growing, harvesting, and preparing cannabis flower and products for consumption, including storage/handling techniques.
- **General chemistry** – Knowledge of the chemical composition, structure, and properties of substances and of the chemical processes and transformations they undergo. This includes uses of chemicals and their interactions, danger signs, production techniques, and disposal methods. Understand chromatography, moisture, etc. as it applies to general analytical chemistry.
- **Basic cannabis plant science** – Demonstrate a basic understanding of the biology involved in growing cannabis plants. Know basic principles about how the environment can impact cannabis plant health and the quality of the cannabis flower/ product.

- **Cannabis regulations** – Knowledge of the current state and local regulations governing the growth and production of cannabis flowers, cannabis plants and cannabis products in Minnesota. Understand the different requirements that are involved in growing adult-use cannabis flower and/or medical cannabis flower depending on the type of cannabis growing operation.
- **Microbiology** – Knowledge of microorganisms that are generally minute simple life forms such as bacteria, fungi, protozoa, etc. that can impact the safety and quality of the cannabis plant and product.
- **Biochemistry** – Knowledge of the chemical and physicochemical processes and substances that occur within living organisms.
- **Data analysis and statistics** – Knowledge of math and statistics and how to do basic calculations to perform laboratory duties and record data. Understand how to do basics of analyzing the data based on information gathered as well.
- **Extraction and sampling** – Knowledge of how to extract cannabinoids from cannabis plants and how to collect samples to be analyzed and tested.
- **Cannabis quality** – Understand how to properly assess the quality of the cannabis flower and cannabis product being developed or third party tested and know how to conduct lab functions in a manner that does not negatively impact quality as well.
- **Hazard analysis critical control point (HACCP)** – Knowledge of risk assessment, hazard analysis critical control point (HACCP), safe handling practices, quality management.
- **Data collection and record keeping** – Understand how to collect data from testing and sampling and then how to properly maintain logs and track and record that data.

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.

- **Document and record information** – Enter, transcribe, record, store, or maintain information in written or electronic form.
- **Conduct cannabis weighing and product testing** – Understand how to weigh cannabis and perform basic tests on the cannabis product to study and gather information.
- **Produce cannabis product(s)** – Know how to follow instructions and/or recipes to use the tools and equipment in the laboratory to produce cannabis products.

- **Monitor processes, materials or surroundings** – Know how to monitor and review information from materials, events, or the environment, to detect or assess problems.
- **Practice safe operating procedures** – Know how to conduct laboratory activities in a manner that ensures personal safety and safety for all others working in the facility. Completion of OSHA 10, OSHA 30 and /or other safety training would benefit an individual in this position.
- **Evaluate information to determine compliance with standards** – Use relevant information and individual judgment to determine whether events or processes comply with cannabis laws, regulations, or standards. Understand the differences in requirements when working with adult-use and medical cannabis.
- **Gather and process information** – Observe, receive, and otherwise obtain information from the laboratory activities and then compile, code, categorize, calculate, tabulate, audit, or verify that information or data.
- **Dispose of waste according to standards** – Know how to properly dispose of materials no longer needed after conducting work with the cannabis product in the laboratory.
- **Prepare, maintain, repair and clean laboratory equipment** – Understand how to prepare and clean glassware, containers, bottles, instrumentation equipment, etc. that are used for cannabis testing, extraction, and production. Know how to maintain and troubleshoot ways to repair lab equipment as well.
- **Use seed-to-sale tracking systems** – Know how to utilize the technology that tracks cannabis from its beginning seed to the point of sale to the final adult-use consumer and/or medical patient.

Updated October 2025