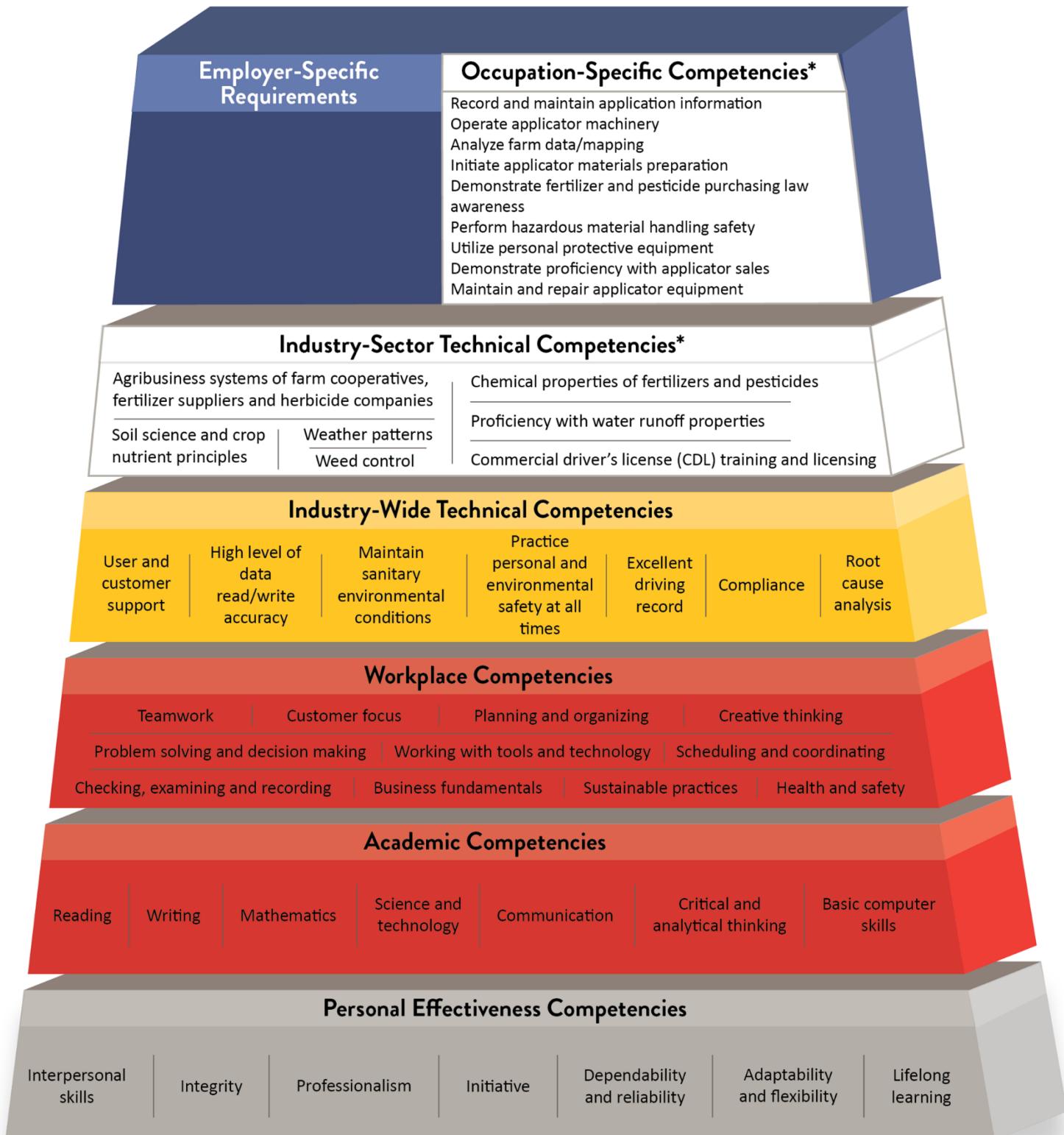


Minnesota Dual-Training Pipeline

Competency Model for Agriculture

Occupation: Agriculture Applicator 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/agriculture.



Competency Model for Agriculture Applicator Technician

Agriculture Applicator Technician – An individual who works to promote the maximum production of the farm. The position primarily focuses on applying fertilizer and crop protection products on farmland using heavy agriculture equipment. Agriculture Applicator Technicians are also responsible for maintaining accurate data and logbooks for chemical application as well as for assisting with general maintenance and repair of agricultural applicator vehicles and machinery.

*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.

- **Agribusiness systems of farm cooperatives, fertilizers, and herbicide suppliers** – Learn basic agricultural business principles and practices of key applicator utilizers including farm cooperatives, fertilizers, and herbicide suppliers.
- **Soil science and crop nutrient principles** – Training in soil as a natural resource and principles of resource conservation management as well as knowledge of nutrients for healthy, productive crops.
- **Weather patterns** – Understanding of the state of the atmosphere (troposphere) and its impact on the degree to which it is hot or cold, wet or dry, calm or stormy, clear or cloudy.
- **Weed control** – Understanding of the tools available for weed control.
- **Chemical properties of fertilizers and pesticides** – Understand principles of crop protection and pest control and impact of commonly used fertilizer and pesticide materials.
- **Proficiency with water runoff properties** – Understand maximizing water usage and water flow on soil and crops.

- **Commercial Driver's License (CDL) training and licensing** – Understand how to operate an agriculture applicator commercial motor vehicle through relevant training and be able to obtain state of Minnesota commercial driver's license. Obtaining a CDL will enable legal operation of appropriate agriculture application technician occupation related vehicles and equipment.

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.

- **Record and maintain application information** – Know how to keep track of detailed information on how fertilizer and chemical are applied, how much is applied, where they were applied throughout the farm and on which dates/times that application occurred.
- **Operate applicator machinery** – Know how to run the applicator machinery.
- **Analyze farm data/ mapping** – Ability to read detailed layouts and maps on where precisely to apply chemicals and fertilizers on crops.
- **Initiate applicator materials preparation** – Safely mix and apply chemicals to crops.
- **Demonstrate fertilizer and pesticide purchasing law awareness** – Ability to purchase applicator materials from safe and lawful applicator materials sellers.
- **Perform hazardous material handling safety** – Demonstrate knowledge of risks associated with hazardous materials and to take necessary steps to mitigate those risks when interacting with the materials.
- **Utilize personal protective equipment** – Demonstrate ability to routinely use gloves, masks, etc. needed to conduct applicator processes safely for the applicator.
- **Demonstrate proficiency with applicator sales** – Fundamentals of sales related to the agriculture industry.
- **Maintain and repair applicator equipment** – Serve as a staff person capable of assisting with conducting routine maintenance and repair of farm equipment with particular focus on applicator materials.

Updated December 2025