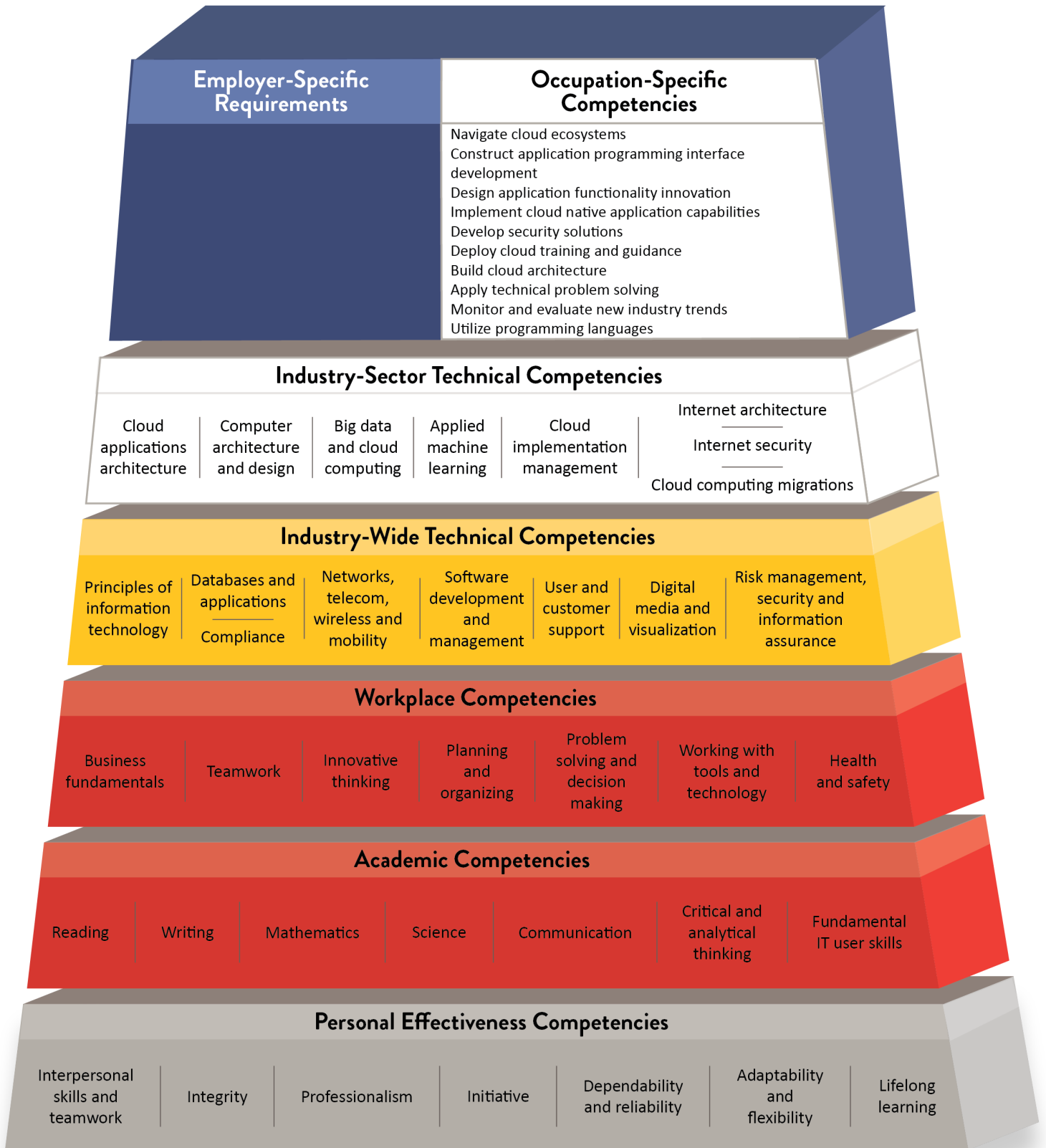


Minnesota Dual-Training Pipeline

Competency Model for Information Technology

Occupation: Cloud Architect



Based on: Information Technology 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/information-technology.

Competency Model for Cloud Architect

Cloud Architect – A professional who supervises a company's cloud computing system. This person works on cloud application designs, cloud approval plans, and systems required to manage cloud storage. This position is often also known as a cloud developer or cloud systems administrator.

*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.

- **Cloud applications architecture** – Understands infrastructure as a service (IaaS), platform as a service (PaaS), software as a service (SaaS).
- **Computer architecture and design** – Trained in software capabilities, databases, applications, and other components engineered for solving business problems by leveraging the power of cloud resources.
- **Big data and cloud computing** – Know how the Cloud opens data analytics of huge volumes of data that are static or streamed at high velocity and present an enormous variety of information.
- **Applied machine learning** – Understand the use of binary prediction, category prediction and value prediction. Machine learning is leveraged for specific types of applications to bring value to organizations.
- **Internet architecture** – Understand varying frameworks of an internet network.
- **Cloud implementation management** – Know how to configure features for elasticity, availability, and scalability using industry-standard techniques, best practices, and tools.
- **Internet security** – Understand a range of security tactics for protecting activities and transactions conducted online over the internet. These are meant to safeguard users from threats, and malicious software that can infect and damage systems.

- **Cloud computing migrations** – Ability to analyze current workloads, bring existing IT systems to the cloud, and configure new systems or services to enhance business operations.

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.

- **Navigate cloud ecosystems** – Understand how to design, build, and advise clients on implementing cloud technology.
- **Construct application programming interface development** – Knowledge of a software intermediary that enables applications to exchange data and functionality easily and securely.
- **Design application functionality innovation** – Be able to practice creativity and open team collaboration to meet customer needs.
- **Implement cloud native application capabilities** – Know the configuration of optimized landscape to manage legacy and modern deployments.
- **Develop security solutions** – Be able to develop for cloud and hybrid cloud security, risk management, and compliance functions.
- **Deploy cloud training and guidance** – Know how to train and guide all individuals whose roles bring them into contact with the cloud structure.
- **Build cloud architecture** – Understand how to build secure, highly scalable, and reliable cloud applications.
- **Apply technical problem solving** – Employ superior analytical skills to fix problems and expedite cloud-based solutions.
- **Monitor and evaluate new industry trends** – Follow and stay up to date on the latest trends and technology in cloud computing possibilities.
- **Utilize programming languages** – Understand programming languages including PowerShell and others.

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