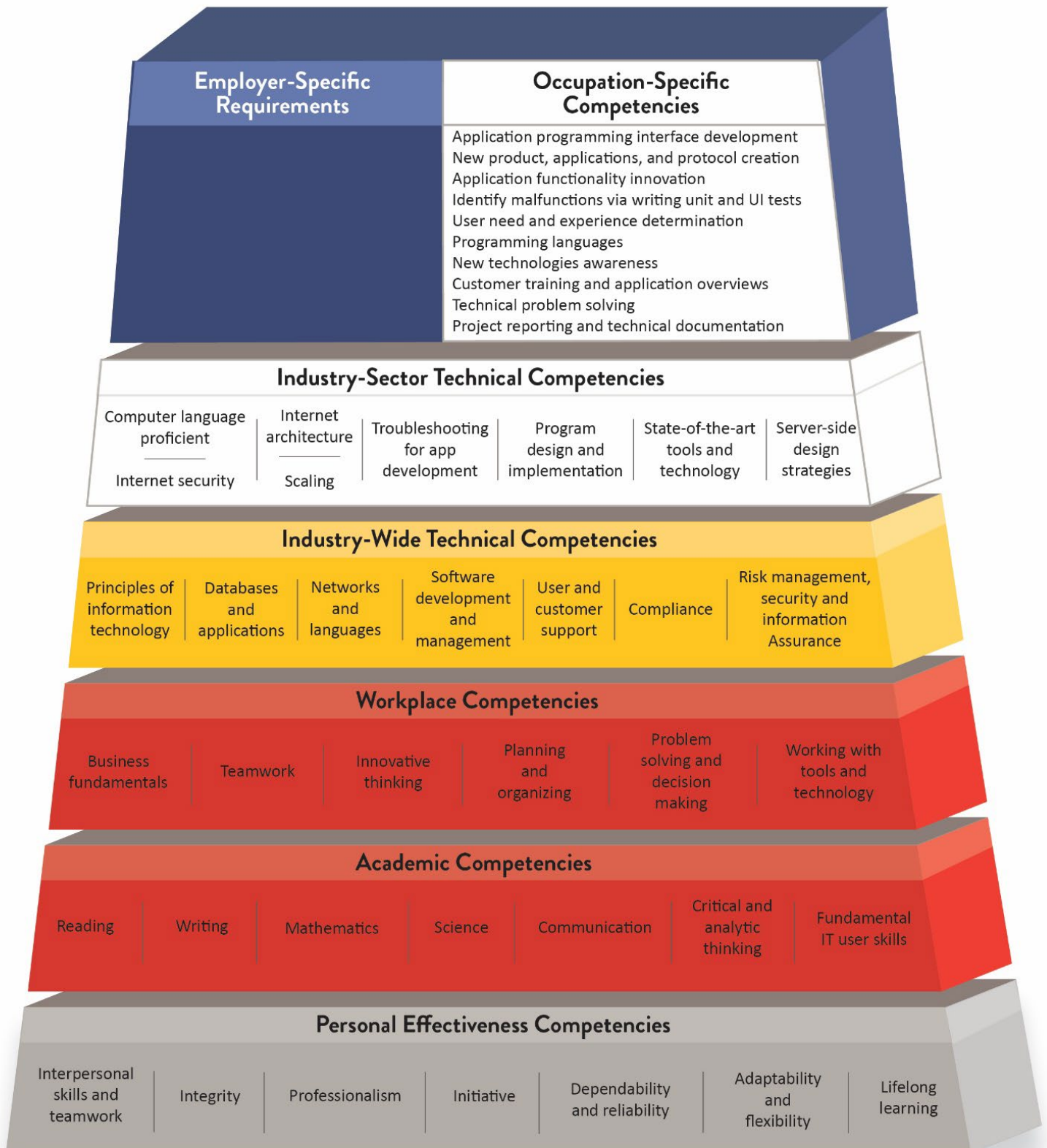# Minnesota Dual-Training Pipeline
Competency Model for Information Technology
Occupation: Application Developer

Employer-Specific Requirements

Occupation-Specific Competencies

Application programming interface development
New product, applications, and protocol creation
Application functionality innovation
Identify malfunctions via writing unit and UI tests
User need and experience determination
Programming languages
New technologies awareness
Customer training and application overviews
Technical problem solving
Project reporting and technical documentation

Industry-Sector Technical Competencies

Computer language proficient	Internet architecture	Troubleshooting for app development	Program design and implementation	State-of-the-art tools and technology	Server-side design strategies
Internet security	Scaling				

Industry-Wide Technical Competencies

Principles of information technology	Databases and applications	Networks and languages	Software development and management	User and customer support	Compliance	Risk management, security and information Assurance

Workplace Competencies

Business fundamentals	Teamwork	Innovative thinking	Planning and organizing	Problem solving and decision making	Working with tools and technology

Academic Competencies

Reading	Writing	Mathematics	Science	Communication	Critical and analytic thinking	Fundamental IT user skills

Personal Effectiveness Competencies

Interpersonal skills and teamwork	Integrity	Professionalism	Initiative	Dependability and reliability	Adaptability and flexibility	Lifelong learning

Based on: Information Technology Competency Model Employment and Training Administration, United States Department of Labor, September 2012.

*Pipeline recommends the Industry-Sector Technical Competencies as formal training opportunities (provided through related instruction) and the Occupation-Specific Competencies as on-the-job training opportunities.

Competency Model for Application Developer

Application Developer – A professional who designs, creates, deploys, and updates computer applications for a particular device, the web, or a specific operating system. This person is an important part of a project management or technical team that is responsible for meeting user needs. Application developers work in almost every industry and are involved in performing routine updates to applications and then work to release them to end-users.

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.

- **Computer language proficient** – Understand how to code to produce a functional program.

- **State-of-the-art tools and technology**– Know how to stay up to date on the most advanced IT tools and technology and have a passion for ongoing technical learning.

- **Program design and implementation** – Know how to follow a specific methodology for program design and implementation.

- **Troubleshooting for App Development** – Be able to evaluate an alternative to an ongoing challenge and create potential solutions.

- **Internet architecture** – Understand varying frameworks of a computer network.

- **Server-side design strategies** – Know how to use responsive design and server-side components.

- **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, malicious software that can infect and damage systems.

- **Scaling** – Know how to do the initial planning for the ability of the application to manage an increasing number of customers, clients and/or users and successful ongoing maintenance.

Occupation-Specific Competencies

On-the-Job Training (OJT) 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.

- **Application programming interface development** – Understand a software intermediary that enables applications to exchange data and functionality easily and securely.

- **New product, applications, and protocol creation** – Have knowledge of multiple operation platforms.

- **Application functionality innovation** – Be able to have creativity and be open to team collaboration to meet customer needs.

- **Identify malfunctions via writing unit and UI tests** - Understand how to build application software by testing it for its functionality, usability, and consistency.

- **User need and experience determination** – Know how to provide proactive communication with customers to keep them informed on project or incident progress, setting clear expectations for follow-up, and following through on those commitments.

- **Programming languages** – Know how to be a versatile developer and quickly adapt to industry trends as it relates to programming languages for development.

- **New technologies awareness** - Remain up to date with terminology, concepts, and best practices.

- **Customer training and application overviews** – Know how to enable the customer to use the application well and to see the big picture and readily solve problems.

- **Technical problem solving** – Be able to have superior analytical skills to expedite solutions.

- **Project reporting and technical documentation** – Know how to create and maintain ongoing documentation.

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