# **Work Process Schedule**

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| Database Technician/Cloud Administrator | |
| **Job Description:** Implements, supports and maintains the overall database infrastructure and services for an organization. | |
| **RAPIDS Code:** 1130CB | **O\*NET Code:** 15-1141.00 |
| **Estimated Program Length:** 1-4 years | |
| **Apprenticeship Type:**  Competency-Based  Time-Based  Hybrid | |

Suggested On-the-Job Learning Outline

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| Installs and configures database management systems and server software for database usage | | |
| **Competencies** | **Date Completed** | **Initial** |
| 1. Sets adequate user rights |  |  |
| 1. Develops code using modern programming languages that connect DBS and API |  |  |
| 1. Designs data distribution and data availability and backup procedures |  |  |
| 1. Produces entity relationship and dataflow mapping, database normalization schemata and data table models |  |  |
| 1. Plans and implement application and data provisioning |  |  |
| 1. Applies basic security measures to configuring databases and servers including sanitization and counter-injection |  |  |
| 1. Uses Data Definition Language and Data Manipulation Language as needed to establish and configure database and servers |  |  |
| 1. Prioritizes work appropriately to meet deadlines, maintain focus, and solve complex tasks, seeking help as needed to address problems as they arise |  |  |
| 1. Integrates measures to ensure privacy, confidentiality and data protection in adherence with state, federal and international rules and legislation and employers’ best practices |  |  |
| 1. Monitors organizational policies and procedures ensuring adherence to federal, state and international legislative requirements in order to implement and manage change |  |  |
| 1. Communicates updates and issues with team members and clients in a professional manner, often in clear and nontechnical ways |  |  |

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| Supports maintenance of database management systems and server software | | |
| **Competencies** | **Date Completed** | **Initial** |
| 1. Designs data distribution and disaster recovery solutions to capture information needed for storage and future troubleshooting |  |  |
| 1. Implements back-up and recovery methodologies to enable restoration capability in the event of an interruption or disaster |  |  |
| 1. Documents and disseminates interruption and disaster recovery procedures |  |  |
| 1. Plans and implements application and data provisioning to appropriate users, exercising high levels of customer service and clear forms of communication, as needed |  |  |
| 1. Researches and stay current on technology |  |  |

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| Optimizes hardware and software performance | | |
| **Competencies** | **Date Completed** | **Initial** |
| 1. Optimizes database instances, partitions, and access for performance |  |  |
| 1. Implements and confirms database replication |  |  |
| 1. Tests system and documents process protocols and results |  |  |
| 1. Implements framework for logging and error handling |  |  |

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| Plans and coordinates data migration and conversion between in house and cloud service | | |
| **Competencies** | **Date Completed** | **Initial** |
| 1. Identifies and confirms software, hardware, or environmental prerequisites for database conversion and migration |  |  |
| 1. Plans effective strategies for extraction, conversion and loading pipeline |  |  |
| 1. Prepares and transports data between servers and storage devices |  |  |
| 1. Ensures seamless migration and conversion with minimal disruption |  |  |
| 1. Validates data accuracy and integrity of migrated and converted data |  |  |
| 1. Verifies and documents conversion and migration results |  |  |
| 1. Tests and designs user rights |  |  |
| 1. Manages and supports legacy systems |  |  |
| 1. Monitors and optimizes database usage |  |  |
| 1. Ensures appropriate security standards during migration and conversation processes |  |  |

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| Secures server and network | | |
| **Competencies** | **Date Completed** | **Initial** |
| 1. Assesses network security threats and vulnerabilities |  |  |
| 1. Configures perimeter to secure network |  |  |
| 1. Installs, configures, and tests network security |  |  |
| 1. Reviews logs and audit reports to identify and record security incidents, intrusions, or attempts |  |  |
| 1. Analyzes and monitors server security and implement countermeasures (like patches and fixes) to address existing and potential vulnerabilities and threats |  |  |
| 1. Determines, implements, and monitors encryption |  |  |
| 1. Develops and implements security and confidentiality protocols |  |  |
| 1. Tests and verifies design performance and user permissions |  |  |

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| Writes SQL statements and subqueries that use functions and selectively retrieve, sort, and calculate data, statistics, and values | | |
| **Competencies** | **Date Completed** | **Initial** |
| 1. Reads and comprehends query language SQL and/or NOSQL relational and document storage databases |  |  |
| 1. Writes SQL statements that use functions and selectively retrieve and sort data and values |  |  |
| 1. Writes and executes queries and subqueries |  |  |

Suggested Related Instruction Outline

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| Provider | |
| **Name:** | |
| **Address:** | |
| **Email:** | **Phone Number:** |
| **Suggested Related Instruction Hours:** 144-576 | |

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| **Course Number** | **Course Title** | **Contact Hours** |
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