Course Outline for Data+ (DA0-001) CertMaster Learn, Student Guide and CertMaster Labs

Course Outline	CertMaster Learn	Student Guide eBook	CertMaster Labs
Overview	Each of the bulleted activities below is a separate study task within the CertMaster Learn learning plan. Students are encouraged to complete a certain number of tasks in each login session based on their desired course completion date.	Review Activities are embedded within the eBook. Videos and Practice Questions are found in the CompTIA Learning Center, the platform through which the eBook is delivered.	Labs are available at the course level or integrated as study tasks within CertMaster Learn.
Lesson 1: Identifying Basic Concepts of Data Schemas	Video: Job Roles using Data+	Video: Job Roles using Data+	
Topic 1A: Identify Relational and Non-Relational Databases *Exam Objective: 1.1 Identify basic concepts of data schemas and dimensions.*	Review Activity: Relational and Non-Relational Databases	Review Activity: Relational and Non-Relational Databases	Assisted Lab 1: Navigating and Understanding Database Design
Topic 1B: Understand the Way We Use Tables, Primary Keys, and Normalization *Exam Objectives: 1.1 Identify basic concepts of data schemas and dimensions.* *2.3 Given a scenario, execute data manipulation techniques.* *5.1 Summarize important data governance concepts.*	Video: Identifying Relationships in Data Review Activity: Tables, Primary Keys, and Normalization PBQ: Recognizing Data Design Standards	Video: Identifying Relationships in Data Review Activity: Tables, Primary Keys, and Normalization	
	Lesson 1: Practice Questions	Lesson 1: Practice Questions	
Lesson 2: Understanding Different Data Systems			

Topic 2A: Describe Types of Data Processing and Storage Systems *Exam Objective: 1.1 Identify basic concepts of data schemas and dimensions.*	Review Activity: Types of Data Processing and Storage Systems	Review Activity: Types of Data Processing and Storage Systems	
Topic 2B: Explain How Data Changes *Exam Objective: 1.1 Identify basic concepts of data schemas and dimensions.*	Review Activity: Explain How Data Changes	Review Activity: Explain How Data Changes	
	Lesson 2: Practice Questions	Lesson 2: Practice Questions	
Lesson 3: Understanding Types and Characteristics of Data			
Topic 3A: Understand Types of Data *Exam Objective: 1.2 Compare and contrast different data types.*	Review Activity: Types of Data PBQ: Comparing and Contrasting Qualitative and Quantitative Data	Review Activity: Types of Data	
Topic 3B: Break Down the Field Data Types *Exam Objective: 1.2 Compare and contrast different data types.*	Video: Understanding Field Data Types Review Activity: Field Data Types	Video: Understanding Field Data Types Review Activity: Field Data Types	Assisted Lab 2: Understanding Data Types and Conversion
	Lesson 3: Practice Questions	Lesson 3: Practice Questions	
Lesson 4: Comparing and Contrasting Different Data Structures, Formats, and Markup Languages			
Topic 4A: Differentiate between Structured Data and Unstructured Data *Exam Objective: 1.3 Compare and contrast common data structures and file formats*	Video: Structured Data versus Unstructured Data Review Activity: Structured and Unstructured Data	Video: Structured Data versus Unstructured Data Review Activity: Structured and Unstructured Data	

Topic 4B: Recognize Different File Formats *Exam Objective: 1.3 Compare and contrast common data structures and file formats.*	Review Activity: File Formats	Review Activity: File Formats	Assisted Lab 3: Working with Different File Formats
Topic 4C: Understand the Different Code Languages Used for Data *Exam Objective: 1.3 Compare and contrast common data structures and file formats.*	Review Activity: Code Languages Used for Data	Review Activity: Code Languages Used for Data	
	Lesson 4: Practice Questions	Lesson 4: Practice Questions	Applied Lab 4: Understanding Data Structure and Types and Using Basic Statements
Lesson 5: Explaining Data Integration and Collection Methods			
Topic 5A: Understand the Processes of Extracting, Transforming, and Loading Data *Exam Objective: 2.1 Explain data acquisition concepts.*	Review Activity: The Processes of Extracting, Transforming, and Loading Data	Review Activity: The Processes of Extracting, Transforming, and Loading Data	
Topic 5B: Explain API/Web Scraping and Other Collection Methods *Exam Objectives: 2.1 Explain data acquisition concepts.* *1.3 Compare and contrast common data structures and file formats.*	Review Activity: API/Web Scraping and Other Collection Methods	Review Activity: API/Web Scraping and Other Collection Methods	

Topic 5C: Collect and Use Public and Publicly-Available Data *Exam Objective: 2.1 Explain data acquisition concepts.*	Video: Creating a Data Set from Census Data Review Activity: Public and Publicly Available Data	Video: Creating a Data Set from Census Data Review Activity: Public and Publicly Available Data	Assisted Lab 5: Using Public Data
Topic 5D: Use and Collect Survey Data *Exam Objective: 2.1 Explain data acquisition concepts.*	Video: Building a Survey and Collecting Data Review Activity: Survey Data PBQ: Types of Answers	Video: Building a Survey and Collecting Data Review Activity: Survey Data	
	Lesson 5: Practice Questions	Lesson 5: Practice Questions	
Lesson 6: Identifying Common Reasons for Cleansing and Profiling Data			
Topic 6A: Learn to Profile Data *Exam Objective: 2.2 Identify common reasons for cleansing and profiling datasets.*	Review Activity: Learn to Profile Data	Review Activity: Learn to Profile Data	Assisted Lab 6: Profiling Data Sets
Topic 6B: Address Redundant, Duplicated, and Unnecessary Data *Exam Objective: 2.2 Identify common reasons for cleansing and profiling datasets.*	Review Activity: Redundant, Duplicated, and Unnecessary Data	Review Activity: Redundant, Duplicated, and Unnecessary Data	Assisted Lab 7: Addressing Redundant and Duplicated Data
Topic 6C: Work with Missing Values *Exam Objective: 2.2 Identify common reasons for cleansing and profiling datasets.*	Review Activity: Missing Values	Review Activity: Missing Values	Assisted Lab 8: Addressing Missing Values
Topic 6D: Address Invalid Data *Exam Objective: 2.2 Identify common reasons*	Video: Correcting or Removing Invalid Data Review Activity: Invalid Data	Video: Correcting or Removing Invalid Data Review Activity: Invalid Data	

for cleansing and profiling datasets.			
Topic 6E: Convert Data to Meet Specifications *Exam Objective: 2.2 Identify common reasons for cleansing and profiling datasets.*	Review Activity: Convert Data to Meet Specifications	Review Activity: Convert Data to Meet Specifications	Applied Lab 9: Preparing Data for Use
	Lesson 6: Practice Questions	Lesson 6: Practice Questions	
Lesson 7: Executing Different Data Manipulation Techniques			
Topic 7A: Manipulate Field Data and Create Variables *Exam Objective: 2.3 Given a scenario, execute data manipulation techniques.*	Review Activity: Manipulate Field Data and Create Variables PBQ: Recoding Numerical and Categorical Data	Review Activity: Manipulate Field Data and Create Variables	Assisted Lab 10: Recoding Data and Derived Variables
Topic 7B: Transpose and Append Data *Exam Objective: 2.3 Given a scenario, execute data manipulation techniques.*	Video: Transposing Data and Appending Data Sets Review Activity: Transpose and Append Data	Video: Transposing Data and Appending Data Sets Review Activity: Transpose and Append Data	
Topic 7C: Query Data *Exam Objective: 2.3 Given a scenario, execute data manipulation techniques.*	Video: Discovering how Joins Impact Data Results Review Activity: Query Data	Video: Discovering how Joins Impact Data Results Review Activity: Query Data	Assisted Lab 11: Working with Queries and Join Types
	Lesson 7: Practice Questions	Lesson 7: Practice Questions	
Lesson 8: Explaining Common Techniques for Data Manipulation and Optimization			

Topic 8A: Use Functions to Manipulate Data *Exam Objective: 2.3 Given a scenario, execute data manipulation techniques.* *2.4 Explain common techniques for data manipulation and query optimization.*	Video: Using Functions to Manipulate Data Review Activity: Functions to Manipulate Data	Video: Using Functions to Manipulate Data Review Activity: Functions to Manipulate Data	
Topic 8B: Use Common Techniques for Query Optimization *Exam Objective: 2.4 Explain common techniques for data manipulation and query optimization.*	Review Activity: Common Techniques for Query Optimization	Review Activity: Common Techniques for Query Optimization	
	Lesson 8: Practice Questions	Lesson 8: Practice Questions	Applied Lab 12: Building Queries and Tranforming Data
Lesson 9: Applying Descriptive Statistical Methods			
Topic 9A: Use Measures of Central Tendency *Exam Objective: 3.1 Given a scenario, apply the appropriate descriptive statistical methods.*	Video: Calculating the Measure of Central Tendency Review Activity: Measures of Central Tendency	Video: Calculating the Measure of Central Tendency Review Activity: Measures of Central Tendency	Assisted Lab 13: Using the Measures of Central Tendency
Topic 9B: Use Measures of Dispersion *Exam Objective: 3.1 Given a scenario, apply the appropriate descriptive statistical methods.*	Review Activity: Measures of Dispersion	Review Activity: Measures of Dispersion	Assisted Lab 14: Using the Measures of Variability
Topic 9C: Use Frequency and Percentages *Exam Objective: 3.1 Given a scenario, apply*	Video: Calculating Percentages Review Activity: Frequency and Percentages	Video: Calculating Percentages Review Activity: Frequency and Percentages	

the appropriate descriptive statistical methods.	PBQ: Use Frequencies and Percentages		
	Lesson 9: Practice Questions	Lesson 9: Practice Questions	
Lesson 10: Describing Key Analysis Techniques			
Topic 10A: Get Started with Analysis *Exam Objective: 3.3 Summarize types of analysis and key analysis techniques.*	Review Activity: Get Started with Analysis	Review Activity: Get Started with Analysis	
Topic 10B: Recognize Types of Analysis *Exam Objective: 3.3 Summarize types of analysis and key analysis techniques.*	Review Activity: Types of Analysis	Review Activity: Types of Analysis	
	Lesson 10: Practice Questions	Lesson 10: Practice Questions	
Lesson 11: Understanding the Use of Different Statistical Methods			
Topic 11A: Understand the Importance of Statistical Tests *Exam Objective: 3.2 Explain the purpose of inferential statistical methods.*	Video: Understanding the Importance of Statistical Tests Review Activity: The Importance of Statistical Tests	Video: Understanding the Importance of Statistical Tests Review Activity: The Importance of Statistical Tests	
Topic 11B: Break Down the Hypothesis Test *Exam Objective: 3.2 Explain the purpose of inferential statistical methods.*	Review Activity: The Hypothesis Test	Review Activity: The Hypothesis Test	

Topic 11C: Understand Tests and Methods to Determine Relationships Between Variables *Exam Objective: 3.2 Explain the purpose of inferential statistical methods.*	Review Activity: Tests and Methods to Determine Relationships Between Variables PBQ: Chi-Square Test versus T-Test	Review Activity: Tests and Methods to Determine Relationships Between Variables	
	Lesson 11: Practice Questions	Lesson 11: Practice Questions	Applied Lab 15: Analyzing Data
Lesson 12: Using the Appropriate Type of Visualization			
Topic 12A: Use Basic Visuals *Exam Objective: 4.4 Given a scenario, apply the appropriate type of visualization.*	Review Activity: Basic Visuals	Review Activity: Basic Visuals	Assisted Lab 16: Building Basic Visuals to Make Visual Impact
Topic 12B: Build Advanced Visuals *Exam Objective: 4.4 Given a scenario, apply the appropriate type of visualization.*	Video: Building and Reading Stacked Charts Review Activity: Advanced Visuals	Video: Building and Reading Stacked Charts Review Activity: Advanced Visuals	
Topic 12C: Build Maps with Geographical Data *Exam Objective: 4.4 Given a scenario, apply the appropriate type of visualization.*	Review Activity: Maps with Geographical Data PBQ: Building Maps with Geographical Data	Review Activity: Maps with Geographical Data	Assisted Lab 17: Building Maps with Geographical Data
Topic 12D: Use Visuals to Tell a Story *Exam Objective: 4.4 Given a scenario, apply the appropriate type of visualization.*	Review Activity: Visuals to Tell a Story	Review Activity: Visuals to Tell a Story	Assisted Lab 18: Using Visuals to Tell a Story
	Lesson 12: Practice Questions	Lesson 12: Practice Questions	
Lesson 13: Expressing Business Requirements in a Report Format			

Topic 13A: Consider Audience Needs When Developing a Report *Exam Objective: 4.1 Given a scenario, translate business requirements to form a report.*	Review Activity: Audience Needs When Developing a Report	Review Activity: Audience Needs When Developing a Report	
Topic 13B: Describe Data Source Considerations For Reporting *Exam Objective: 4.3 Given a scenario, use appropriate methods for dashboard development.*	Video: Accessing Source Data and Creating Reports Review Activity: Data Source Considerations for Reporting	Video: Accessing Source Data and Creating Reports Review Activity: Data Source Considerations for Reporting	
Topic 13C: Describe Considerations for Delivering Reports and Dashboards *Exam Objective: 4.1 Given a scenario, translate business requirements to form a report.* *4.3 Given a scenario, use appropriate methods for dashboard development.*	Review Activity: Considerations for Delivering Reports and Dashboards	Review Activity: Considerations for Delivering Reports and Dashboards	
Topic 13D: Develop Reports or Dashboards *Exam Objective: 4.1 Given a scenario, translate business requirements to form a report.* *4.3 Given a scenario, use appropriate methods for dashboard development.*	Video: Selecting Different Visualization Layouts Review Activity: Develop Reports or Dashboards	Video: Selecting Different Visualization Layouts Review Activity: Develop Reports or Dashboards	

Topic 13E: Understand Ways to Sort and Filter Data *Exam Objectives: 4.1 Given a scenario, translate business requirements to form a report.* *4.3 Given a scenario, use appropriate methods for dashboard development.*	Review Activity: Ways to Sort and Filter Data	Review Activity: Ways to Sort and Filter Data	Assisted Lab 20: Filtering Data
	Lesson 13: Practice Questions	Lesson 13: Practice Questions	
Lesson 14: Designing Components for Reports and Dashboards			
Topic 14A: Design Elements for Reports and Dashboards *Exam Objective: 4.2 Given a scenario, use appropriate design components for reports and dashboards.*	Video: Using Appropriate Design Components for Reports and Dashboards Review Activity: Design Elements for Reports/Dashboards	Video: Using Appropriate Design Components for Reports and Dashboards Review Activity: Design Elements for Reports/Dashboards	Assisted Lab 21: Designing Elements for Dashboards
Topic 14B: Utilize Standard Elements *Exam Objective: 4.2 Given a scenario, use appropriate design components for reports and dashboards.*	Review Activity: Standard Elements for Reports and Dashboards PBQ: Utilizing Standard Elements in Reports/Dashboards	Review Activity: Standard Elements for Reports and Dashboards	
Topic 14C: Creating a Narrative and Other Written Elements *Exam Objective: 4.2 Given a scenario, use appropriate design components for reports and dashboards.*	Review Activity: Narrative and Other Written Elements	Review Activity: Narrative and Other Written Elements	

Topic 14D: Understand Deployment Considerations *Exam Objective: 4.3 Given a scenario, use appropriate methods for dashboard development.*	Video: Deployment Considerations Review Activity: Deployment Considerations	Video: Deployment Considerations Review Activity: Deployment Considerations	
	Lesson 14: Practice Questions	Lesson 14: Practice Questions	
Lesson 15: Distinguishing Different Report Types			
Topic 15A: Understand How Updates and Timing Affect Reporting *Exam Objective: 4.5 Compare and contrast types of reports.*	Review Activity: How Updates and Timing Affect Reporting PBQ: Types of Reporting	Review Activity: How Updates and Timing Affect Reporting	
Topic 15B: Differentiate Between Types of Reports *Exam Objective: 4.5 Compare and contrast types of reports.*	Review Activity: Types of Reports	Review Activity: Types of Reports	Assisted Lab 22: Building an Ad Hoc Report
	Lesson 15: Practice Questions	Lesson 15: Practice Questions	Applied Lab 23: Visualizing Data
Lesson 16: Summarizing the Importance of Data Governance			
Topic 16A: Define Data Governance *Exam Objective: 5.1 Summarize important data governance concepts.*	Video: Importance of Data Governance Review Activity: Data Governance	Video: Importance of Data Governance Review Activity: Data Governance	
Topic 16B: Understand Access Requirements and Policies *Exam Objective: 5.1 Summarize important data governance concepts.*	Review Activity: Access Requirements and Policies	Review Activity: Access Requirements and Policies	

Topic 16C: Understand Security Requirements *Exam Objective: 5.1 Summarize important data governance concepts.*	Review Activity: Security Requirements	Review Activity: Security Requirements	Assisted Lab 24: De-Identifying Records
Topic 16D: Understand Entity Relationship Requirements *Exam Objective: 5.1 Summarize important data governance concepts.*	Review Activity: Entity Relationship Requirements	Review Activity: Entity Relationship Requirements	
	Lesson 16: Practice Questions	Lesson 16: Practice Questions	
Lesson 17: Applying Quality Control to Data			
Topic 17A: Describe Characteristics, Rules, and Metrics of Data Quality *Exam Objective: 5.2 Given a scenario, apply data quality control concepts.*	Review Activity: Characteristics, Rules, and Metrics of Data Quality	Review Activity: Characteristics, Rules, and Metrics of Data Quality	
Topic 17B: Identify Reasons to Quality Check Data and Methods of Data Validation *Exam Objective: 5.2 Given a scenario, apply data quality control concepts.*	Review Activity: Reasons to Quality Check Data and Methods of Data Validation PBQ: Validating Data	Review Activity: Reasons to Quality Check Data and Methods of Data Validation	
	Lesson 17: Practice Questions	Lesson 17: Practice Questions	
Lesson 18: Explaining Master Data Management Concepts			
Topic 18A: Explain the Basics of Master Data Management *Exam Objective: 5.3*	Video: Understanding Data Management Review Activity: The Basics of Master Data Management	Video: Understanding Data Management Review Activity: The Basics of Master Data Management	

Explain master data management (MDM) concepts.			
Topic 18B: Describe Master Data Management Processes *Exam Objective: 5.3 Explain master data management (MDM) concepts.*	Review Activity: Master Data Management Processes	Review Activity: Master Data Management Processes	
	Lesson 18: Practice Questions	Lesson 18: Practice Questions	
Appendix A: Identifying Common Data Analytics Tools *Exam Objective: 3.4 Identify common data analytics tools.*	Review Activity: Common Data Analytics Tools Appendix A: Practice Questions	Review Activity: Common Data Analytics Tools Appendix A: Practice Questions	