**ICDL Data Analytics – Foundation Sample Training Plan**

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| **Session** | **Lesson** | **Content** | **Learning Outcomes** | **Learning and Assessment strategy** | **Tools/Equipment** | **Training Materials Reference\*** |
| **0 - Welcome and Programme Introduction** | 0-Introduction | * Introduce yourself and the group * Understand the participants expectations – use an appropriate ice breaker. * Outline programme objectives. * Explain the delivery mode, format, and teaching, learning and assessment strategy * Explain certification process and expectations if appropriate * Establish any rules | 1. Understand programme learning objectives 2. Understand format 3. Understand certification process, if applicable 4. Understand housekeeping rules | * Introductions * Ice Breaker * Overview | * Training room with screen and computer | * Training\_L1\_2 ppt * Course outline doc * Printed Learning Materials and student folder * Syllabus doc * Quick Reference guide |
| **1 - Concepts and Statistical Analysis** | 1 - Key Concepts | * Main Types of Data Analytics * Business Benefits of Data Analytics * Main phases of Data Analysis Process * Data Protection Considerations * Review exercise | 1. Identify the main types of Data Analytics 2. Outline the business benefits of Data Analytics 3. Identify the main phases of data analysis 4. Recognise data protection considerations when analysing data | * Instruction * Exercises using case study examples. * Formative assessment using review exercise. | * Training room with screen and computer | * Training ppt L1\_2 * Printed Learning Materials and student folder - Lesson 1 Key Concepts * Syllabus - Skillset 1.1 Key Concepts |
| 2 - Statistical Analysis | * Summary Statistics * Measures of Central Tendency * Calculating central tendency using functions * Measures of Variation * Calculating the variation of a data set * Review exercise | 1. Describe measures of central tendency of a data set 2. Calculate central tendency values of a data set 3. Describe some measures of variation of a data set 4. Calculate the variation of a data set | * Instruction * Exercises using case study examples. * Demonstration * Hands-on practice. * Formative assessment using review exercise. | * Training room with screen and computer * Computers with Excel 2016 | * Training ppt L1\_2 * Printed Learning Materials and student folder - Lesson 2 Statistical Analysis * Syllabus - Skillset 1.2 Statistical Analysis |
| **2 - Data Set Preparation** | 3 - Importing Data Sets | * Importing Data into Excel * Importing data into a spreadsheet application: .csv * Importing data into a spreadsheet application: spreadsheet * Importing data into a spreadsheet application: website table * Importing data into a spreadsheet application: database table * Review exercise | 1. Import data into a spreadsheet application from a text file 2. Import data into a spreadsheet application from a spreadsheet 3. Import data into a spreadsheet application from a website table 4. Import data into a spreadsheet application from a database table | * Instruction * Demonstration * Hands-on practice. * Formative assessment using review exercise. | * Training room with screen and computer * Computers with Excel 2016 | * Training ppt L3\_5 * Printed Learning Materials and student folder - Lesson 3 Importing Data Sets * Syllabus - Skillset 2.1 Importing, Shaping |
| 4 - Shaping Data Sets | * Shaping data sets * Removing Duplicate Data * Validating Data Using VLOOKUP * Validating Data Using IF Functions * Extracting Values Using Text Functions * Review exercise | 1. Remove duplicate data 2. Validate that given values belong to a reference data set using the VLOOKUP function 3. Validate that given values belong to a specific range using one or more IF functions 4. Extract values from a string using text functions | * Instruction * Demonstration * Hands-on practice. * Formative assessment using review exercise. | * Training room with screen and computer * Computers with Excel 2016 | * Training ppt L3\_5 * Printed Learning Materials and student folder - Lesson 4 Shaping Data Sets * Syllabus - Skillset 2.1 Importing, Shaping |
| 5 - Filtering Data Sets | * Formatting Data Sets as Tables * Using Table Slicers * Review exercise | 1. Format a data set as table 2. Insert and use table slicers | * Instruction * Demonstration * Hands-on practice. * Formative assessment using review exercise. | * Training room with screen and computer * Computers with Excel 2016 | * Training ppt L3\_5 * Printed Learning Materials and student folder - Lesson 5 Filtering Data Sets * Syllabus - Skillset 2.2 Filtering |
| **3 - Data Set Summarisation** | 6 - Pivot Table Data Aggregation | * Changing Aggregation Methods * Displaying Multiple Aggregation Values * Using Built-In Calculations * Review exercise | 1. Change the method of aggregation for a value 2. Display multiple aggregation values 3. Use built-in calculations | * Instruction * Demonstration * Hands-on practice. * Formative assessment using review exercise. | * Training room with screen and computer * Computers with Excel 2016 | * Training ppt L6\_9 * Printed Learning Materials and student folder - Lesson 6 Pivot Table Data Aggregation * Syllabus - Skillset 3.1 Pivot Table Data Aggregation |
| 7 - Pivot Table Frequency Analysis | * Grouping Date, Time and Numeric Data * Creating Custom Groups * Ungrouping Data * Review exercise | 1. Automatically group date, time and numeric data items 2. Manually create custom groups 3. Rename groups 4. Ungroup data items | * Instruction * Demonstration * Hands-on practice. * Formative assessment using review exercise. | * Training room with screen and computer * Computers with Excel 2016 | * Training ppt L6\_9 * Printed Learning Materials and student folder - Lesson 7 Pivot Table Frequency Analysis * Syllabus - Skillset 3.2 Pivot Table Frequency Analysis |
| 8 - Filtering Pivot Tables | * Using Report Filters * Using Pivot Table Slicers * Using Timelines * Review exercise | 1. Use report filters 2. Use slicers 3. Use timelines | * Instruction * Demonstration * Hands-on practice. * Formative assessment using review exercise. | * Training room with screen and computer * Computers with Excel 2016 | * Training ppt L6\_9 * Printed Learning Materials and student folder - Lesson 8 Filtering Pivot Tables * Syllabus - Skillset 3.3 Filtering Pivot Tables |
| 9 - Using Pivot Charts | * From Pivot Tables * From Tables * Review exercise | 1. Create a pivot chart from a pivot table 2. Create a pivot chart from data in a table | * Instruction * Demonstration * Hands-on practice. * Formative assessment using review exercise. | * Training room with screen and computer * Computers with Excel 2016 | * Training ppt L6\_9 * Printed Learning Materials and student folder - Lesson 9 Using Pivot Charts * Syllabus - Skillset 3.4 Using Pivot Charts |
| **4 - Data Visualization** | 10 - Data Visualization Tools | * Key Features * Setting up * Environment * Getting Data from Spreadsheets * Review exercise | 1. Understand the concept of data visualization using reports and dashboards. 2. Outline common visualizations. 3. Recognise common data visualization tools and their functions. 4. Setup tools for data visualizations. 5. Import data from a spreadsheet into a data visualization tool. | * Instruction * Demonstration * Hands-on practice. * Formative assessment using review exercise. | * Training room with screen and computer * Computers with Excel 2016. * Internet access to download Power BI Desktop | * Training ppt L10\_13 * Printed Learning Materials and student folder - Lesson 10 Data Visualization Tools * Syllabus - Skillset 4.1 Concepts and Setup |
| 11 - Creating Basic Data Visualizations | * Creating Tables * Creating Charts * Using Conditional Formatting * Using Visual Level Filters * Creating Maps * Review exercise | 1. Create table visualizations 2. Create chart visualizations 3. Enhance visualizations using conditional formatting 4. Enhance visualizations using data bars 5. Enhance visualizations using visual level filters 6. Create visualizations using maps | * Instruction * Demonstration * Hands-on practice. * Formative assessment using review exercise. | * Training room with screen and computer * Computers with Excel 2016 and Power BI Desktop. | * Training ppt L10\_13 * Printed Learning Materials and student folder - Lesson 11 Creating Basic Data Visualizations * Syllabus - Skillset 4.2 Visualization |
| 12 - Creating Additional Visualizations | * Creating KPIs * Creating Cards * Creating Matrixes * Creating Slicers * Review exercise | 1. Create KPI and gauge chart visualizations to measure progress 2. Create card visualizations 3. Create matrix visualizations 4. Add interactivity using slicers | * Instruction * Demonstration * Hands-on practice. * Formative assessment using review exercise. | * Training room with screen and computer * Computers with Excel 2016 and Power BI Desktop. | * Training ppt L10\_13 * Printed Learning Materials and student folder - Lesson 12 Creating Additional Data Visualizations * This lesson goes beyond the syllabus by providing additional skills for creating reports. Whether trainers cover the content in this lesson will depend on factors such as the learner’s abilities and the training schedule |
| 13 - Publishing and Sharing | * Sharing Reports * Creating and Sharing Dashboards * Good Design Practice * Evaluating Results * Review exercise | 1. Publish a report from Power BI Desktop to the Power BI service 2. Share a report from the Power BI service using a link 3. Share a report from the Power BI service to the Web 4. Create a dashboard in the Power BI service 5. Share a dashboard in the Power BI service 6. Understand good design practice in reports and dashboards | * Instruction * Demonstration * Hands-on practice. * Formative assessment using review exercise. | * Training room with screen and computer * Computers with Excel 2016 and Power BI Desktop. * Internet access and work email address to set up Power BI service trial account with a pro license * A Power BI pro license account with which to share with | * Training ppt L10\_13 * Printed Learning Materials and student folder - Lesson 13 Publishing and Sharing * Syllabus - Skillset 4.1 Concepts and Setup and 4.3 Publishing and Sharing |
| **Close** | 14-Close | * Review programme objectives * Facilitate questions * Provide contact details * Course Evaluation * Close | 1. Understand next steps to certification, if applicable 2. Evaluate course |  | * Training room with screen and computer * Course evaluation | * Training ppt L10\_13 * Course outline doc * Printed Learning Materials and student folder * Syllabus doc * Quick Reference guide |

**\*Training Materials Reference**:

Training materials include

* Printed Learning Materials and student folder
* Syllabus document
* Quick Reference guide
* Course outline document
  + Can be modified and shared with participants in advance of the training.
* Powerpoint presentation
  + The presentation is designed to be used in conjunction with the Learning Materials and student folder. There are references in the notes on each slide to the relevant lesson in the learning materials.
  + There are 4 presentations mapping to the 4 categories in the syllabus, which can be modified to suit the instructor’s preferences.
  + Instructors will need to localise and tailor the presentation to suit the needs of their audience and local market. For example:
  1. Modify the content to use applications that are relevant for your audience/local market. The applications referenced in the practical lessons are:
     + Microsoft Excel 2016
     + Microsoft Power BI Desktop
     + Microsoft Power BI Service
  2. Modify the content to use examples and scenarios that are relevant for your audience/local market.
  3. Modify the content to suit your audience’s understanding of the subject matter. For example, provide additional explanations or introductory information if needed or focus on more advanced content as relevant.
  4. Modify the content to suit your teaching, learning and assessment strategy.
     + **Practical content**: The instructor should decide the best approach to this for their audience. For example, they may choose to demonstrate practical steps in the relevant tool and facilitate learners practicing the steps after a demonstration. Or they may facilitate learners trying the steps themselves in the relevant tool without a demonstration.
       - Note: Where possible the steps to complete a discrete task have been included on one slide to allow learners refer to the steps on a shared screen while completing the steps on an individual computer.
     + **Review exercises**: These are provided at the end of each lesson in the learning materials and are designed to allow the learners to reinforce their newly acquired knowledge and skills through practice. Modify and develop additional/new review exercises as required to suit your audience.
  5. Provide additional resources such as videos, animations, images, statistics, cheat sheets etc. relevant to your audience as required.