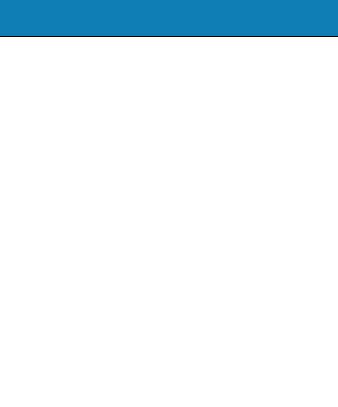


			Unit 3 Data A	nalytics 2025
	(Outc	ome 1 Data analytics – Template for	· developing an assessment task – Blank
Or de	atcome 1 In completion of this unit the student should be able to interpret teacher signs, extract data from large repositories, manipulate and cleanse da velop data visualisations to present findings.	Assessment task development		
Ke	ey knowledge	Ke	y skills	
•	 emerging trends in data analytics using artificial intelligence, including: integration of artificial intelligence features into software tools generating data visualisations through the writing and refinement of prompts machine learning and statistical modelling for making predictions, decisions and recommendations characteristics of functional and non-functional requirements, constraints and scope design tools for representing databases and spreadsheets, including: data dictionaries query designs layout diagrams input-process-output (IPO) charts design tools for representing data visualisations, including: mock-ups storyboards 	•	interpret solution requirements and designs	
•	 characteristics of data types, including: text (character, string) numeric (integer, floating point, date/time) Boolean techniques for identifying, selecting, extracting and validating authentic data stored in large repositories, including: downloading datasets in a range of formats the use of SQL functions to retrieve, filter, sort and link dataset values (SELECT, FROM, WHERE, ORDER BY, INNER JOIN) the use of Boolean operators (AND, NOT, OR) for WHERE statements existence checking, type checking and range checking structural characteristics of relational database management systems (RDBMS), including: data types and field sizes 		identify, select, extract and validate relevant data from large repositories using database software	







		Unit 3 Data Analytics 2025		
		Outcome 1 Data analytics – Template for developing an assessment task – Bla	ank	
	 data in tables relationships using primary and foreign key fields use of SQL to generate queries 			
•	methods for referencing data sources using the American Psychological Association (APA) referencing system	use the APA referencing system to acknowledge intellectual property		
•	 techniques for effectively and efficiently manipulating and cleansing data, including: formulas and functions to perform calculations sorting, filtering and reformatting identifying and fixing errors 	 manipulate and cleanse data using spreadsheet software 		
•	 techniques to statistically analyse data to identify trends, relationships and patterns, including: descriptive statistics (average, median, minimum, maximum, range, standard deviation, count/frequency, sum) Pearson's correlation co-efficient (r) the shape and skew of data 	 conduct statistical analysis to identify trends, relationships and patterns 		
•	 purposes of data visualisations, including: exploratory data analysis presentation of information providing interactive experiences for users to explore data types of data visualisations, including: infographics (series or long-form, static) dashboards (interactive, static or live data) dynamic data visualisations (interactive, live data) formats and conventions applied to data visualisations to improve their effectiveness for intended users, including: use of colours, fonts, images and icons visual hierarchy and clarity of message 	 select, justify and apply functions, formats and conventions to create effective data visualisations 		
•	 techniques for testing databases and spreadsheets, including: testing formula and query results testing validation test cases comparing expected and actual results in testing tables techniques for testing data visualisations, including: visual inspection of the appearance of the data visualisation confirming that charts and graphs are representative of the data being visualised 	 develop and apply suitable testing techniques to software tools used 		

Page 2