Specification of Competency Standards
for the Information & Communications Technology Industry
Unit of Competency

Functional Area - Data Science

Title	Appraise, select and integrate the appropriate data analytics and/or modelling solutions to perform the data analytics process based on different requirements
Code	111144L6
Range	Appraise different data analytics solutions and/or modelling tools in the existing market and select the appropriate data analytics solutions and/or modelling tools to perform the data analytics process with handling bigger and more complex data, getting more precise results, having faster responses, etc.
Level	6
Credit	6 （For Reference Only）
Competency	Performance Requirements 1. Understand the practices of data analytics solutions and/or modelling tools throughout its lifetime through the internal (and external) data streams of an enterprise • Be able to: ○ understand the data analytics and data model being a comprehensive set of concepts, procedures, practices, processes, and a number of systems that allow for an organization to analyse the data ○ aware of a wide range of core data science/analytics techniques, their advantages, disadvantages and areas of application in different dimensions (See Remark 1) ○ aware of the necessity of the data analytics and data models, relevant objectives, time and resource requirements 2. Appraise various data analytics solutions and/or modelling tools in existing market • Be able to: ○ appraise various data analytics solutions and/or modelling tools (See Remark 2) in the existing market based on different analytics capabilities (See Remark 3) 3. Select the right data analytics solutions and/or modelling tools • Be able to ○ select the right data analytics solutions and/or modelling tools with different analytics capabilities based on different business values 4. Perform supplier management of data analytics solutions and/or modelling tools • Be able to ○ perform supplier management of the data analytics solutions and/or modelling tools to ensure the right suppliers are chosen to meet the analytics capabilities based on different business values 5. Assess the target data analytics solutions and/or modelling tools • Be able to ○ assess the target data analytics solutions and/or modelling tools for the data analytics effectiveness and maturity
Assessment Criteria	The integrated outcome requirement of this UoCs are the abilities to: • have knowledge of the practices of data analytics/models

Functional Area - Data Science

	• select the appropriate data analytics solutions and/or modelling tools to perform the analytic processes to meet the requirements with different analytics capabilities based on different business values
Remark	1. Data dimensions: • traditional vs. emerging data • structured vs. unstructured data 2. There are various popular data analytics solutions and/or modelling tools in the existing market, i.e., Apache Spark, Apache Storm, PIG and HIVE, SAS, Tableau, Microsoft Power BI, SAP BusinessObjects, Google Data Studio, IBM Cognos, Oracle Analytics Cloud, Amazon Web Services (Analytics), etc. 3. Different analytics capabilities (with algorithms and modelling techniques) includes (but not limited to): • discover relationships between variables (regression) • discover relationships over time (time series analysis) • distinguish between noise and meaningful information (signal analysis) • discover meaningful groupings of data points (cluster analysis) • experiment to find the most effective variation of a website, product, etc. (A/B/N Testing) • organize data points into known categories (classification) • experiment with a system virtually (simulation modelling) • extract geographic or topological information (spatial analysis) • use data to forecast or infer behaviour (predictive modelling) • combine data sources to recognize events (complex event processing) • extract consumer reactions based on social media behaviour (sentiment analysis) • discover meaningful nodes and relationships on networks (network analysis) • improve a process or function based on criteria (optimization) • find answers to human questions using artificial intelligence (deep question answering) • extract meaning from human speech or writing (natural language processing)