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

Functional Area - Data Science

Title	Design customised analytics and modeling tools for an organisation
Code	111147L6
Range	This UoC involves designing and developing the customised data analytics solutions and/or modelling tools (if ready-made solutions/tools are not sufficient) by applying different technologies (such as ML and AI techniques) for an organisation.
Level	6
Credit	3 （For Reference Only）
Competency	Performance Requirements 1. Understand the practices of data analytics processes, data analytics solutions and/or modelling tools throughout its lifetime through the internal (and external) data streams of an enterprise • know the data analytics solutions and/or modelling tools/processes being a comprehensive set of concepts, procedures, practices, processes, and a number of systems that allow for an organization to analyse the data • know a wide range of core data science/analytics techniques, their advantages, disadvantages and areas of application in different dimensions (See Remark 1) • know different analytics technologies (See Remark 2) • know the necessity of the data analytics and data models, relevant objectives, time and resource requirements 2. Plan and develop the right data analytics solutions and/or modelling tools/processes to fill the gap between the data analytics/models requirements and the data analytics solutions and/or modelling tools/processes from existing markets • select the appropriate design and development programming tools, languages and environments (See Remark 3) for building the targeted data analytics solutions and/or modelling tools/processes • design and develop the right data analytics solutions and/or modelling tools/processes to fill the gap between the data analytics/models requirements and the outsourced data analytics solutions and/or modelling tools/processes from existing markets • test the developed data analytics solutions and/or modelling tools/processes 3. Evaluate the developed data analytics solutions and/or modelling tools/processes with the integration of existing ones based on the data objectives
Assessment Criteria	The integrated outcome requirement of this UoC are the abilities to: • design and develop the right data analytics solutions and data model using the right data analytics solutions and/or modelling tools/processes which are not available from the existing markets in order to meet the data requirements for the organisation • Evaluate the developed data analytics solutions and/or modelling tools/processes with the integration of existing ones based on the data objectives
Remark	1. Data dimensions: • traditional vs. emerging data • structured vs. unstructured data

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	2. The analytics technologies include (but not limited to) statistical methods, data mining methods, machine learning, deep learning, reinforcement learning through various AI techniques
	3. The programming languages/platforms include (but not limited to) R, Python, Anaconda, IDLE, Jupyter Notebook, Spyder, etc.