**CICES DIGITAL CIVIL ENGINEERING SURVEYOR (CES)**

**DIGITAL CES – SPECIALIST DATA ANALYST COMPETENCIES MAY 2025**

**SPECIALIST DATA ANALYST COMPETENCIES– 2025**

The Digital CES competencies are split into core and specialist competencies.

**OPTIMUM STANDARDS**

Each of the activities under the competencies must be signed-off to a specific standard, indicated by one of the letters A, K, E or B. The definitions of these are given blow.

|  |  |  |
| --- | --- | --- |
| **A** | **Appreciation** | A general awareness of the activity is required. This could be acquired by reading a magazine article or attending a CPD event. |
| **K** | **Knowledge** | This standard requires a more detailed level of knowledge understanding of the activity. This could be acquired by undertaking a training course or other type of study but not necessarily put into practice e.g. a subject area on a degree course. |
| **E** | **Experience** | To reach this standard the activity must have been performed independently or under supervision. This may be achieved by undertaking the activity in a work context over a period of time. Experience of the activity or subject should follow on and be additional to appreciation and knowledge in that subject area. |
| **B** | **Ability** | To be able, without supervision, to perform relevant functions and be able to supervise other less experienced staff. This may be evidenced by the undertaking of management roles or experience gained over time. |

|  |  |  |
| --- | --- | --- |
| **DCES-DA01** | **Competency** | **Problem Identification** |
| **Item** | **Optimum** | **Activity Detail** | **Date of Assessment** |
| **Technical** | **Member** | **A** | **K** | **E** | **B** |
| **A** | K | B\* | Determine if engineering challenges can benefit from data analytics. |  |  |  |  |
| **B** | K | E | Define business need and value that is solvable with data-driven information solutions. |  |  |  |  |
| **C** | K | E | Collaborate with stakeholders to grasp organisational challenges. i.e. existing data sources, their accessibility, validation of the data quality, methods for data retrieval and cleaning and requirements for manual entry of data. |  |  |  |  |
| **D** | E | B | Set clear data science measurable outcomes aligned with success criteria and how that may be embedded into a journey of development through change management |  |  |  |  |

\*Significant knowledge gap between technical and member grades is anticipated

|  |  |
| --- | --- |
| Name of Supervisor: | Name of Applicant: |
|  |  |
| Supervisor’s Signature: | Date: |
|  |  |

|  |  |  |
| --- | --- | --- |
| **DCES-DA02** | **Competency** | **Data Strategy and Governance** |
| **Item** | **Optimum** | **Activity Detail** | **Date of Assessment** |
| **Technical** | **Member** | **A** | **K** | **E** | **B** |
| **A** | E | B | Develop and implement data strategies aligned with industry and organisational goals. |  |  |  |  |
| **B** | E | B | Ensure compliance with data governance policies and industry regulations. |  |  |  |  |
| **C** | E | B | Collect and organise data, mindful of privacy and ethical considerations. |  |  |  |  |
| **D** | E | B | Establish clear data science goals and deliverables based on critical success indicators. |  |  |  |  |

|  |  |
| --- | --- |
| Name of Supervisor: | Name of Applicant: |
|  |  |
| Supervisor’s Signature: | Date: |
|  |  |

|  |  |  |
| --- | --- | --- |
| **DCES-DA03** | **Competency** | **Data Gathering and Information Preparation** |
| **Item** | **Optimum** | **Activity Detail** | **Date of Assessment** |
| **Technical** | **Member** | **A** | **K** | **E** | **B** |
| **A** | K | E | Evaluate implications of data source and resulting information output on strategy, decision-making, and service delivery.  |  |  |  |  |
| **B** | E | B | Identify and ensure availability of critical internal and external data sources. |  |  |  |  |
| **C** | K | E | Conduct data quality assessments and implement audit methodologies for integrity. |  |  |  |  |
| **D** | K | E | Utilise data wrangling for complex and low-complexity datasets, including exploratory analysis and data cleaning. |  |  |  |  |

|  |  |
| --- | --- |
| Name of Supervisor: | Name of Applicant: |
|  |  |
| Supervisor’s Signature: | Date: |
|  |  |

|  |  |  |
| --- | --- | --- |
| **DCES-DA04** | **Competency** | **Analytical Solution Design and Implementation** |
| **Item** | **Optimum** | **Activity Detail** | **Date of Assessment** |
| **Technical** | **Member** | **A** | **K** | **E** | **B** |
| **A** | K | E | Develop data science/analytics solutions based on business and data knowledge. |  |  |  |  |
| **B** | E | B | Select appropriate techniques considering project requirements. |  |  |  |  |
| **C** | K | B\* | Apply statistical and machine learning techniques effectively. |  |  |  |  |
| **D** | K | E | Optimise project planning, resource allocation, and risk management using data analytics. |  |  |  |  |
| **E** | K | B\* | Implement and maintain data infrastructure essential for effective operations and storage. |  |  |  |  |

\*Significant knowledge gap between technical and member grades is anticipated

|  |  |
| --- | --- |
| Name of Supervisor: | Name of Applicant: |
|  |  |
| Supervisor’s Signature: | Date: |
|  |  |

|  |  |  |
| --- | --- | --- |
| **DCES-DA05** | **Competency** | **Stakeholder Engagement** |
| **Item** | **Optimum** | **Activity Detail** | **Date of Assessment** |
| **Technical** | **Member** | **A** | **K** | **E** | **B** |
| **A** | K | E | Collaborate with internal teams and stakeholders to understand data input and Information output requirements. |  |  |  |  |
| **B** | E | B | Present findings, insights, and recommendations to project leadership and clients. |  |  |  |  |
| **C** | E | B | Communicate complex data concepts clearly and effectively. |  |  |  |  |
| **D** | K | E | Foster strong relationships with stakeholders to ensure project alignment and success. |  |  |  |  |

|  |  |
| --- | --- |
| Name of Supervisor: | Name of Applicant: |
|  |  |
| Supervisor’s Signature: | Date: |
|  |  |