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| Title | **Draw 3D orbit, navigations and model** |
| Level | **3** | **Credits** | **12** |

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| Purpose | The competency standard is designed to explore the use of 3D orbit for a model, creation of a camera and aspects of 3D model objects in detail. |

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| Classification ISCED | 0611 Computer use |

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| Available grade | Competent / Not yet competent |

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| Modification history | N/A |

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| **Competency Unit** | **Performance Criteria** | **Knowledge and Understanding** |
| **E1: Develop familiarity with 3D Orbit** | **The trainee will be able to:****P1.** Define 3D orbit with the command of* “3DOrbit” for constrained orbit on selected object.
* Developing zoom
* Pan facility
* Projection mode by selecting “Perspective”
* Select different visual styles e.g. 3D Hidden, 3D Wireframe, Conceptual, and Realistic.

**P2.** Select different visual aids e.g. Compass, Grid and UCS Icon.**P3.** Sets the 3D view while in the orbit command using pre- set views.**P4.** Differentiate between Free and Continuous orbit.Highlight the use of “Esc” key.**P5.** Discover other navigational modes including but not limited to Walk, Fly, Swivel, and Adjust Distance. | **The trainee will be able to:****K1.**Define the working of 3D Orbit (constrained, free and continuous).**K2.**Explain different projection and navigational modes.**K3.**Explain visual aids and styles. |

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| **E2: Perform 3D dimensional navigation** | **The trainee will be able to:****P1.** Deal with the functions of Camera including;* Creation
* View
* Preview
* Properties
* Plotting
* Display
* Adjust
* Swivelling
* Distance

**P2.** Perform parallel projection or perspective views by using a camera and target with the help of “DVIEW” command.**P3.** Simulate walking and flying through a 3D drawing and their setting.**P4.** Execute “ANIPATH” command for animation path. | **The trainee will be able to:****K1.**Describe how to design and create Camera.**K2.**Plot and adjust the Camera.**K3.**Define parallel projection or perspective views**K4.**Illustrate Walk and Fly settings.**K5.** Describe the different animation paths. |
| **E3:****Operate 3D Objects** | **The trainee will be able to:****P1.** Create wireframe models by positioning 2D objects anywhere in 3D space i.e. 3D polylines.**P2.** Draw faceted surfaces using a polygonal mesh.**P3.** Combine different simple shapes to create more complex solids by joining or subtracting them or finding their intersecting (over- lapping) volume. | **The trainee will be able to:****K1.**Explain Structure of Wireframes**K2.** Define the process of application of Surfaces.**K3.** Create Solids. |