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AICA
Associazione Italiana per l'Informatica ed il Calcolo Automatico

EUROPEAN COMPUTER DRIVING LICENCE

3D Computer Aided Design

Syllabus

Purpose

This document details the syllabus for *ECDL CAD 3D Module*. The syllabus describes, through learning outcomes, the knowledge and skills that a candidate for ECDL Multimedia should possess. The syllabus also provides the basis for the theory and practice-based test in this module.

Note

The official version of the syllabus for ECDL CAD 3D Module Version 1.0 can be found on the web site www.ecdl-multimedia.it, and it was released in May 2008.

CAD 3D

Category	Skill Set	Ref	Task Item
1 Basic Functions	*1.1 File Management*	1.1.1	Create a new model using an existing specified template.
		1.1.2	Open a 3D model.
		1.1.3	Import a 3D model.
		1.1.4	Save a 3D model to a location on a drive.
		1.1.5	Export a 3D model.
	1.2 Model View	1.2.1	Use pan, zoom and rotate tools.
		1.2.2	Save a model view.
		1.2.3	Recall a model view.
2 Main Operations	*2.1 3D Coordinates systems*	2.1.1	Create and modify coordinate systems.
		2.1.2	Save a coordinate system.
		2.1.3	Load a coordinate system.
	2.2 Geometric Design Aids	2.2.1	Use and modify a grid.
		2.2.2	Use Snapping Tools
		2.2.3	Creation and modify layers/levels
	2.3 3D Geometric Drawing	2.3.1	Draw a point.
		2.3.2	Draw a line, polyline/smartline.
		2.3.3	Draw a spline/point curve
		2.3.4	Draw an arc.
		2.3.5	Draw a circle, ellipse.
		2.3.6	Draw a polygon.
		2.3.7	Draw a spiral, helix.
	2.4 3D Surface Modelling	2.4.1	Create planes
		2.4.2	Create an edge surface.
		2.4.3	Extrude a surface.
		2.4.4	Create a surface revolution.
		2.4.5	Create surface through interpolation
	2.5 3D Manipulate Object/Graphic Elements	2.5.1	Copy objects/graphical elements
		2.5.2	Delete objects/graphical elements
		2.5.3	Move objects/graphical elements
		2.5.4	Rotate objects/graphical elements
		2.5.5	Scale objects/graphical elements

Category	Skill Set	Ref	Task Item
		2.5.6	Create, modify, ungroup objects/graphical elements.
		2 5.7	Cut objects/graphical elements
		2.5.8	Subdivide/explode objects/graphical elements
		2.5.9	Join objects/graphical elements
		2.5.10	Extend objects/graphical elements
		2.5.11	Offset objects/graphical elements
		2.5.12	Fillet objects/graphical elements
		2.5.13	Chamfer objects/graphical elements
		2.5.14	Mirror objects/graphical elements
		2.5.15	Array objects/graphical elements
	2.6 Create Solids	2.6.1	Create a box.
		2.6.2	Create a sphere
		2.6.3	Create a cylinder
		2.6.4	Create a tube
		2.6.5	Create a cone
		2.6.6	Create a cone trunk
		2.6.7	Create an ellipsoid
		2.6.8	Create a torus
		2.6.9	Extrude an object to a solid.
	2.7 Modify Solid Objects.	2.7.1	Create a solid using union, subtract, intersection.
		2.7.2	Boolean subtract
		2.7.3	Boolean Intersect
		2.7.4	Slice/section a solid.
	2.8 Create and modify Parametric Objects	2.8.1	Create parametric objects
		2.8.2	Modify parametric objects.
		2.8.3	Assemble parametric objects.
1.3 Advanced Operations	*3.1 3D Views*	3.1.1	Use orthogonal views.
		3.1.2	Use axonometric views.
		3.1.3	Use perspective views.
		3.1.4	Layout operations
	3.2 Photorealistic Presentation	3.2.1	Render model/scene.
		3.2.2	Create, modify lights in a model/scene.
		3.2.3	Create, apply, modify materials
		3.2.4	Create a background scene.

Category	Skill Set	Ref	Task Item
		3.2.5	Output scene/model in raster format: bmp, jpg, tga, tif, eps.