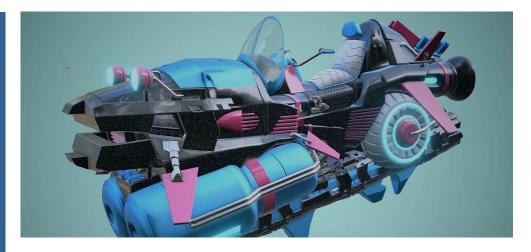# 3ds Max Certified User exam
## Exam guide



Armada is an Autodesk Certification Centre offering exams that lead to industry-recognised qualifications.

For 3ds Max, we offer an Autodesk Certified User (ACU) exam



## Exam summary

Entry level exam to validate your knowledge of fundamental concepts and procedures in 3ds Max and basic computer modelling and animation practices.

Recognised by industry as proof of competency using 3ds Max.

Qualification: Autodesk Certified User (ACU) in 3ds Max.

Sat online, from your place of work or home.

Length of exam: 50 minutes.

## Requirements

It is expected that all candidates have a general understanding of:

- Navigating the user interface and workspaces
- Understanding and locating software preferences
- 3D perspectives
- The 3ds Max help system
- Creating and setting up a project
- Navigate the user interface
- Creating polygon-based models
- Unwrapping a model
- Rigging a model with bones
- Animating a model
- Creating and applying materials
- Adding cameras
- Lighting and rendering scenes.
- Proper topology
- Troubleshooting models

For a list of the topics and features you're likely to be tested in, see over.

## Recommended preparation

- Attend *3ds Max Essentials* training.
- 150 hours' post-course, hands-on experience using 3ds Max.

## Certificate and benefits

Successful candidates receive:

- An e-certificate (PDF) from Autodesk confirming your 3ds Max-certified status.
- An official Autodesk-Certified badge that you can use to market your skills, e.g. on your business cards, in your email signature, on your website, etc.

## Practice test

A practice test is available that reflects the questions you're likely to be asked in your 3ds Max ACU exam.

## Further info, dates, times, price

See armada.co.uk/exams/3dsmax.

## Scene Management

### Set up a project

Use the Project Window
- Define a project and setting paths and folders

Create a new project
- Empty and default projects
- Create from current

Set the active project

### Setup the scene preferences

Change the grid spacing

Set the scene units

Set the display units

Set the scene frame rate

### Manage scene objects

Organize objects
- Use the Scene Explorer, selection sets and the Display panel
- Select, group and parent
- Use the Layer Explorer to Show/Hide Layers, Freeze/Thaw Layers and Add/ Delete objects from layers

Navigate and rearrange hierarchies in the Scene Explorer

### Modify the properties of one or more objects

Change multiple objects' properties
- Differentiate between Instance, Copy and Reference

Modify object parameters
- Command panel, Creation panel
- Size, segment, etc.

### Manipulate objects' transformations and pivot point

Use the Transform tools for precision transformation
- Specify a Reference Coordinate System

Transform multiple objects using the Align tool

Create multiple objects using the Array tool

Duplicate objects using the Mirror tool

### Change viewport display

Change viewport shading

Change viewport lighting

Determine poly count

## Modeling

### Create a polygon primitive

Create primitives

Manipulate the parametric properties

Apply modifiers

### Edit polygon surfaces

Convert to editable poly

Identify polygon sub-objects

Add polygon sub-objects
- Insert Loop, Offset Edge, Chamfer, Cap and Attach/Detach

Manipulate polygon sub-objects to modify geometry
- Move, rotate and scale
- Switch between various object and sub-object modes
- Extrude, bevel, bridge and add divisions
- Utilize see-through mode
- Check the polygon normal and flip it if necessary
- Cut, Target Weld and Connect.

Modify smoothing groups
- Assign polygons to smoothing groups

Use the modeling and selection tools

Utilize the Symmetry modifier

Illustrate uses of Soft Selection
- May include changing Soft Selection parameters.

Perform object operations
- May include Attach/Detach, MSmooth and Boolean.

## UVW Coordinates

### Configure Basic UVW Projections using the UVW Map Modifier

Apply different mapping types
- May include Box, Planar, Cylindrical and Spherical.

Change properties of UVW projections

### Use the Unwrap UVW modifier

Describe UVW sub-objects
- May include identifying a UV Element and using the Select by Element toggle.

Transform a UVW Element
- May include Cut, Stitch, Unfold, Relax, Layout and Weld.

Utilize UVW manipulation aids
- May include assigning CheckerPattern and showing distortion.

## Materials / Shading

### Work with a material

Use the material appropriate for the selected rendering engine
- Differentiate material types
- Differentiate shader types among the different renders

Create a material

Assign material to an object
- May include assigning materials to selected polygons by Material ID.

### Modify material properties

Use the material editors
- Modify material nodes in the view
- Compact vs. Slate editor

Apply maps to materials
- May include classifying map types (2D and 3D procedurals, Bitmaps), using color and normal maps and identifying map types (when using procedural or 3D map types).

Change shader specific properties for a material

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Armada Training Solutions Ltd.      E: training@armada.co.uk      W: www.armada.co.uk

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# Exam Outline

## Rigging

### Utilize the Bone tools

Create bones

Edit bones
- Bone parameters

Implement Forward Kinematics (FK)
- Check bone hierarchy in Scene Explorer

Implement Inverse Kinematics (IK) on bones
- IK Solvers

### Use the Skin modifier

Edit envelopes

### Apply constraints

Identify the constraints
- Link, position, path and orientation

Apply a constraint
- Selection order for creation, weights, etc.

View hierarchy in the Schematic View
- Identifying object connections

### Utilize Character Studio

Apply biped

Apply physique

## Cameras

### Work with cameras

Differentiate camera types
- Free Camera, Target Camera and Physical Camera
- Identify when to use each camera type and know the difference between perspective versus orthographic cameras

Create a camera
- May include activating a camera view.

Use the Camera Viewport controls to adjust the camera view
- May include Dolly, Truck, Roll and Orbit/Pan.

Use the Walkthrough Assistant

### Modify camera property names or values

Define the functions of near and far clip planes

Adjust lens/focal length/field of view

### Show Safe Frames

Demonstrate the use of title safe, action safe and user safe areas

## Animation

### Use the Time Slider and set the Time Configuration settings

Set keyframes using Auto Key and Set Key
- Set a keyframe, move/manipulate a keyframe, remove a keyframe and locate the value of a keyframe in the Time Slider

Change the Time Slider range

Locate the value of an animated parameter

Create a Preview Animation

Adjust Time Configuration Settings
- Frame Rate, Playback, Time Display and Re-scale Time

### Demonstrate how to animate an object along a path

Create a spline/curve to animate an object on the path

Demonstrate how to control object axis and banking on the path

Manipulate an object along the path
- Change the spline/curve
- Modify the percentage along a path

### Edit animation using the Track View (Curve Editor / Dope Sheet)

Differentiate different tangent types
- Auto Tangents, Spline, Fast, Slow, Linear, Flat, Step and Smooth

Break and unify tangents

Lock and show tangents

Switch between spline and stepped tangents

Manipulate multiple keyframes using the Dope Sheet

## Lighting

### Work with lights

Create a light
- Standard light types: Target spot, Free Spot, Target Direct, Free Direct, Omni and Skylight

Change common light parameters
- Change common light parameters using Light Lister
- Color, multiplier, etc.

Prevent an object from receiving light
- Use the Light Include/Exclude tool

### Work with shadow types

Differentiate shadow types
- Shadow Map, Ray-Traced, Area and Advanced Ray-Traced

Adjust type-specific shadow parameters
- Color and density

## Rendering

### Differentiate the built-in renderers

QuickSilver Hardware Renderer, ART Renderer, Scanline Renderer, VUE File Renderer and Arnold

### Configure Scanline render parameters

Change common parameters
- View to Render, Output Size settings, Frame Range and Render Region

Change renderer specific parameters
- Adjust basic settings (Sampling and Ray Depth)

Render still image and animation sequence

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