

Computer Science: Advanced 3D Game Development

Compare and contrast modeling methodologies (for example, polygons, NURBS, splines) [GD3.1](#)

1 Compare and contrast modeling methodologies (for example, polygons, NURBS, splines) [GD3.1](#)

Explain the applications of low polygon and high polygon construction [GD3.2](#)

2 Explain the applications of low polygon and high polygon construction [GD3.2](#)

Construct and manipulate polygonal objects [GD3.3](#)

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Applying texturing/surfacing/shading to models and normal mapping [GD3.4](#)

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Identify UVW mapping coordinates [GD3.5](#)

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Explain how lighting and shading effect form and surface [GD3.6](#)

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Implement basic lighting concepts for ambient and artificial light [GD3.7](#)

7 Implement basic lighting concepts for ambient and artificial light [GD3.7](#)

Describe the difference between forward and inverse kinematics [GD3.8](#)

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Examine the process of particle creation and its application to game design GD3.9	9 Examine the process of particle creation and its application to game design GD3.9
Create a parent/child hierarchy GD3.10	10 Create a parent/child hierarchy GD3.10
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Apply and adjust weight maps GD3.12	12 Apply and adjust weight maps GD3.12
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Demonstrate the use of constraints to animate objects GD3.14	14 Demonstrate the use of constraints to animate objects GD3.14
Apply various animation techniques (for example, pose-to-pose, straight ahead) GD3.15	15 Apply various animation techniques (for example, pose-to-pose, straight ahead) GD3.15
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Simulate rigid body dynamics (shattering wall, breaking glass) GD3.17	17 Simulate rigid body dynamics (shattering wall, breaking glass) GD3.17
Utilize cinematography in animation GD3.18	18 Utilize cinematography in animation GD3.18
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