

**Department of Liberal Education**  
**Era University, Lucknow**  
**Course Outline**  
**Effective From: 2023-24**

<b>Name of the Program</b>	<b>B.A. / B.Sc. (LIBERAL EDUCATION)</b>			<b>Year/ Semester:</b>	<b>3<sup>rd</sup> /6<sup>th</sup></b>
<b>Course Name</b>	<b>Fundamentals of 3D Animation</b>	<b>Course Code:</b>	<b>ANI305P</b>	<b>Type:</b>	<b>Practical</b>
<b>Credits</b>	<b>01</b>			<b>Total Practical Hours:</b>	<b>30 Hours</b>
<b>Evaluation Spread</b>	<b>Internal Continuous Assessment:</b>	<b>10 Marks</b>		<b>End Term Exam:</b>	<b>15 Marks</b>
<b>Type of Course</b>	<input type="radio"/> Compulsory	<input checked="" type="radio"/> Core	<input type="radio"/> Creative	<input type="radio"/> Life Skill	
<b>Course Objectives</b>	<ol style="list-style-type: none"> <li>1. 3D modeling is the digital representation of any object or surface using 3D modeling software.</li> <li>2. In the most basic case, a three-dimensional model can be created from simple shapes like cubes, rectangles, and triangles.</li> <li>3. These shapes are modified into complex shapes, 3D modeling is the digital representation of any object or surface using 3D modeling software.</li> <li>4. In the most basic case, a three-dimensional model can be created from simple shapes like cubes, rectangles, and triangles. These shapes are then modified into complex, high-polygon designs.</li> </ol>				
<b>Course Outcomes(CO):</b> <i>After the successful course completion, learners will develop following attributes:</i>					
<b>Course Outcome (CO)</b>	<b>Attributes</b>				
<b>CO1</b>	Identify characteristics of rendering 3D objects for optimal system processing and analysis. Create a 3D environment featuring lighting and textures. Create basic 3D models and animations. Evaluate digital 3D projects, identify items for improvement, and implement changes.				
<b>CO2</b>	During the term of the course, students will learn to work within virtual 3D space and build volumetric objects including: vertices, spines, polygons, primitive shapes and Sub Patch geometry.				
<b>CO3</b>	Students will use these tools to build complex objects then learn the basic 3-D rendering tools and techniques including: surface channels, procedural textures, image mapping, light types and settings, camera settings and use, as well as a variety of rendering options, Including ray tracing. Students will also learn the importance of file backup and Management.				
<b>CO4</b>	Students will also learn the importance of file backup and Management.				
<b>Pedagogy</b>	Interactive, discussion-based, student-centered. program outputs.				
<b>Internal Evaluation Mode</b>	Experiment-Writing and Conductance File Maintenance/ Laboratory Record Continuous Attendance and Participation				
<b>Practical No.</b>	<b>Experiments</b>			<b>Contact Hours</b>	<b>Mapped CO</b>
<b>1.</b>	<ul style="list-style-type: none"> <li>• Fundamental 3D Modeling Concepts</li> <li>• Elements of 3D Design</li> </ul>			<b>4</b>	<b>CO1, CO2</b>

	<ul style="list-style-type: none"> <li>• Introduction to Texture and lighting</li> </ul>		
2.	<ul style="list-style-type: none"> <li>• Introduction to Rigging</li> <li>• 3D Animation</li> <li>• Rendering</li> <li>• Vertex: A single point and the smallest component of a 3D model.</li> <li>• Edge: A straight line that connect two vertices.</li> </ul>	6	CO2
3.	<ul style="list-style-type: none"> <li>• Polygon: Any shape that formed by connecting straight lines.</li> <li>• Face: The most basic part of a polygon mesh. ...</li> <li>• Mesh: A collection of polygons that are connected in their faces, edges, and vertices</li> </ul>	6	CO3
4.	<ul style="list-style-type: none"> <li>• Create 3D character modeling with textured</li> </ul>	6+8	CO1, CO2, CO4

### CO-PO and PSO Mapping

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO6
CO1	1		2				1		1					
CO2		2						1		1		2		2
CO3				2		3				3			1	
CO4			1					1			2			1

*Strongcontribution-3, Averagecontribution-2, Lowcontribution-1,*

### Suggested Readings:

**Reference Books**  
 3D Animation Essentials (Essentials (John Wiley)) Paperback – 2 March 2012 by Andy Beane  
 Digital Modeling by William Vaughan

**E-Resources**  
<file:///C:/Users/Ishu/Downloads/Documents/3D Animation Essentials Softgozar.com.pdf>

### Internal Practical Evaluation:

Component	Marks
Experiment-Writing and Conductance	5
File Maintenance/ Laboratory Record	2
Continuous Attendance and Participation	1
Viva-Voce	2
<b>Total Marks</b>	10

Course created by: Ms. Iffat Jahan

Signature:

Approved by: Mr. Gaurav Rawat

Signature:

