SPS 106: 3D simulation in Fashion

Course Objectives

- Equip participants with the skills to create, manipulate, and render 3D garments using CLO 3D.
- Introduce participants to digital workflow integration in the fashion industry.
- Develop technical proficiency in simulating realistic fabrics, textures, and motion in CLO 3D.

Session No	Session Title	Detailed Topics	Key Learning Methods
1	**Overview of CLO 3D and Setting Up**	• Introduction to CLO 3D: Features and applications in fashion design • System requirements and software installation • Navigating the CLO 3D interface • Understanding file formats used in CLO 3D	• Lecture • Discussion • Q&A
2	**Basics of 3D Garment Creation**	• Understanding the 2D and 3D workspace • Introduction to pattern drafting in CLO 3D • Importing and manipulating basic patterns • Exploring fabric properties and material libraries	• Lecture • Discussion • Q&A
3	**Tools for Garment Construction**	• Sewing tools: Adding seams and stitches • Using pins and arrangement points for 3D simulations • Adjusting fit and resolving simulation errors	• Lecture • Discussion • Q&A
4	**Rendering Basics**	• Overview of CLO 3D rendering tools • Applying colors, textures, and basic lighting • Exporting simple renderings	• Lecture • Discussion • Q&A
5	**Intermediate Pattern Design**	• Creating complex garment patterns (e.g., jackets, dresses) • Working with darts, pleats, and gathers • Layering techniques for garment realism	• Lecture • Discussion • Q&A

Session No	Session Title	Detailed Topics	Key Learning Methods
6	**Detailed Sewing Techniques**	• Advanced sewing and seam-line adjustments • Adding decorative elements like topstitches and hems • Resolving common fit issues in CLO 3D	• Lecture • Discussion • Q&A
7	**Fabric Properties and Dynamics**	• Customizing fabric properties for realistic behavior • Simulating stretch, drape, and weight • Testing fabric dynamics for performance and aesthetics	• Lecture • Discussion • Q&A
8	**Accessory Design and Embellishments**	• Adding zippers, buttons, and trims • Designing pockets and other functional elements • Incorporating digital embroidery and patterns	• Lecture • Discussion • Q&A
9	**Advanced Rendering and Visual Effects**	• Applying advanced lighting and shadow techniques • Using HDRI for realistic environments • Enhancing details through texture mapping	• Lecture • Discussion • Q&A
10	**Tinting and Coating Processes**	• Understanding tinting effects on denim. • Coating techniques for functional and decorative purposes. • Process optimization and troubleshooting.	• Lecture • Discussion • Q&A
11	**Avatars and Fit Models**	• Introduction to CLO 3D avatars • Customizing avatars (e.g., measurements, poses, and skin tones) • Importing external avatar models	• Lecture • Discussion • Q&A
12	**Virtual Fitting and Draping**	• Testing fit on multiple avatars	• Lecture • Discussion • Q&A

Session No	Session Title	Detailed Topics	Key Learning Methods
		• Adjusting patterns and construction for diverse body types • Virtual fitting room simulation	
13	**Collaborative Design and Presentation**	• Exporting and sharing CLO 3D projects • Collaborating with other designers using CLO-SET • Preparing a professional digital portfolio	• Lecture • Discussion • Q&A
14	**Concept Development and Planning**	• Defining a design brief for the capstone project • Mood board creation and material selection • Project milestone planning	• Lecture • Discussion • Q&A
15	**Project Execution (Part 1)**	• Drafting patterns and initial 3D simulation • Addressing fit and design adjustments	• Lecture • Discussion • Q&A
16	**Project Execution (Part 2)**	• Finalizing garment details, rendering, and visual presentation • Adding branding elements (logos, labels, tags)	• Lecture • Discussion • Q&A
17	**Presentation and Feedback**	• resenting the completed project to peers/instructors • Receiving feedback and industry tips for improvement • Exploring career paths and freelance opportunities in 3D fashion	•

Assessment Format

1. **Practical Assignments (40%):**
    - Weekly tasks to reinforce learning objectives.
2. **Quizzes (10%):**
    - Short quizzes to test understanding of tools and techniques.
3. **Group Projects (20%):**
    - Collaboration exercises to simulate real-world teamwork.
4. **Final Project (30%):**
    - Comprehensive collection showcasing creativity and technical skills.