FASH A263: 3D CLOTHING DESIGN

Item	Value
Curriculum Committee Approval Date	10/04/2023
Top Code	130310 - Fashion Design
Units	2 Total Units
Hours	72 Total Hours (Lecture Hours 18; Lab Hours 54)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S), • Pass/No Pass (B)

Course Description

This introductory course will teach students to create fashion garments in a 3D environment using avatars and CLO 3D software. Students will develop patterns, simulate sewing, add fabrics and trims, and conduct fittings to produce original designs using the 2D and 3D platforms. PREREQUISITE: FASH A255. ADVISORY: FASH A100 and FASH A150. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Students will demonstrate proficient 3D design skills using avatars to create fully rendered fashion designs, encompass digital pattern drafting and construction techniques, digital draping and layering of garments, and effective use of materials.

Course Objectives

- 1. Create lifelike 3D representations of garments using 2D blocks and patterns, translating them into finished 3D designs.
- 2. Transform initial design blocks into 3D garments, applying pattern drafting and construction skills.
- 3. Customize avatars through editing to adjust appearance, size, and pose-matching design requirements for future use.
- 4. Generate 3D flat pattern blocks by translating 2D shapes into three-dimensional garment elements.
- 5. Demonstrate the addition and removal of seam allowances, annotations, and symbols for accurate 3D pattern representation.
- 6. Practice the process of digital sewing and assemble of patterns within the 3D software, dressing avatars with designed garments.
- 7. Demonstrate the ability to manipulate fabric appearance and behavior, ensuring realistic simulation within the 3D environment.
- 8. Utilize fit assessment tools, including maps, to evaluate and optimize the fit of designed garments on avatars.
- 9. Apply essential garment details such as pins, tucks, steam, elasticated waistbands, yokes, zippers, buttons, patch pockets, topstitching, puckering, fullness, and pleats.
- 10. Incorporate graphics and textures seamlessly into 3D fashion designs to enhance realism and aesthetics.
- 11. Calculate the amount of fabric required for specific garment designs, considering variations and design elements.
- 12. Prepare garments for the creation of high-quality rendered images and captivating turntable animations, showcasing the designs effectively.

Lecture Content

I. Introduction to 3D Foundations Navigating 3D Interface Exploring Library, 3D and 2D Windows, Object Browser, and Property Editor Understanding the History and Efficiently Using the Modular Configurator Mastering Main Menus and Vertical Toggle Display Menus II. Setting up 3D User Preferences Personalizing Your 3D Workspace Configuring Input Devices: Mouse/Device Setup Choosing Units of Measure for Precision Customizing Layout and Hotkeys for Workflow Optimization III. Navigation and Selection Effortless Navigation within CLO 3D Zooming, Panning, and Rotating in the 3D Environment Working with Basic Selection Tools: Select/Move and Transform Pattern IV. Simulation and Particle Distance in 3D Mastering Garment Simulation Understanding Various Types of Simulations in CLO 3D Grasping the Concept of "Collision" and Its Significance Analyzing the Difference Between Simulating with Collision On and Off Fine-Tuning Particle Distance for Optimal Resolution in CLO 3D Adjusting Particle Density for Low-Res and Hi-Res Settings V. Editing Techniques in 3D Precision Pattern Manipulation in CLO 3D Working with Pattern Shape Tools and Internal Shape Tools Harnessing the Power of Pattern Symmetry for Efficiency VI. Adding Garment Fullness in 3D Enhancing Garment Aesthetics with CLO 3D Utilizing Elastic Properties for Creating Fullness Crafting Smocking Effects Designing Encased Elastic Waistbands Using Pressure Settings to Create Polyfil or Down-Filled Quilted Garments > VII. Mesh Manipulation in 3D Refining Garment Mesh for Realism in CLO 3D Resolving Collision Issues with the Select Mesh Tool Freezing Garment Parts Using Pins with Active Simulation Tying Knots with Precision Using the Tack Tool VIII. Hardware and Trims in 3D Integrating Functional Elements in CLO 3D Various Techniques for Applying Zippers in CLO 3D Creating Functional Button Plackets Incorporating Hardware Details with Ease Utilizing the Binding Tool for Seam Finishing IX. Fabrics Materials in CLO 3D Customizing Fabric Properties in CLO 3D Adjusting Individual Fabric Attributes for Realistic Textures Utilizing Print Layout Mode for Creative Fabric Design X. Topstitch Puckering in 3D Adding Detail and Texture to Garments in CLO 3D Applying and Customizing Topstitch Details Achieving Puckering Effects for Added Visual Interest XI. Graphics and Textures in 3D Enhancing Visual Appeal with CLO 3D Applying and Editing Graphics and Textures for Unique Designs in the Software

Lab Content

Getting Acquainted with 3D Software Interface Hands-On Exploration of CLO 3D Interface Familiarization with Library, 3D and 2D Windows, Object Browser, and Property Editor Practicing History and Efficient Usage of the Modular Configurator Interaction with Main Menus and Vertical Toggle Display Menus Lab 2: Customizing Your CLO 3D Workspace Personalizing Your CLO 3D Environment Configuring Input Devices: Mouse/Device Setup Adapting Units of Measure to Suit Your Projects Tailoring Layout and Hotkeys for Streamlined Workflow Mastering Navigation and Selection Navigating CLO 3D with Confidence Hands-On Zooming, Panning, and Rotating in the 3D Environment Practical Use of Basic Selection Tools: Select/Move and Transform Pattern Garment Simulation in CLO 3D Hands-On Experience with Garment Simulation Experimenting with Different Types of Simulations in CLO 3D Exploring "Collision" and Its Role in Garment Movement

Comparison of Simulating with Collision On and Of Configuring Particle Distance for Optimal Resolution Adjusting Particle Density for Low-Res and Hi-Res Settings Precision Editing Techniques in CLO 3D Applying Precision to Pattern Editing in CLO 3D Using Pattern Shape Tools and Internal Shape Tools in Practical Exercises Implementing Pattern Symmetry for Enhanced Efficiency Adding Fullness and Texture in CLO 3D Practical Application of Fullness Techniques in CLO 3D Utilizing Elastic Properties for Fullness Effects Creating Smocking Patterns Crafting Encased Elastic Waistbands Employing Pressure Settings for Qui lted Garment Effects Mesh Manipulation for Realism in CLO 3D Fine-Tuning Garment Mesh in CLO 3D Resolving Collision Issues with the Select Mesh Tool Freezing Garment Parts with Pins While Simulation is Active Tying Knots with Precision Using the Tack Tool Integrating Hardware and Trims in CLO 3D Hands-On Application of Functional Elements Various Techniques for Adding Zippers in CLO 3D Crafting Functional Button Plackets Incorporating Hardware Details into Garments Seam Finishing with the Binding Tool Customizing Materials in CLO 3D Exploring Fabric Properties in CLO 3D Adjusting Individual Fabric Attributes for Realistic Textures Practical Use of Print Layout Mode for Custom Fabric Design Detailing Garments with Topstitch Puckering in CLO 3D Adding Detail and Texture to Garments Hands-On Application and Customization of Topstitch Detail Achieving Puckering Effects for Visual Appeal Enhancing Visuals with Graphics and Textures in CLO 3D Applying Graphics and Textures for Visual Enhancement Hands-on experience with Applying and Editing Graphics and Textures in CLO 3D

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- DE Online Lecture (02X)
- Lab (04)
- DE Live Online Lab (04S)
- DE Online Lab (04X)

Instructional Techniques

Lecture/group discussion Instructor feedback Demonstration of tools and materials Problem-solving assignments Use of 3D digital design software

Reading Assignments

Readings from instructor-provided handouts and websites related to 3D design. 1-2 hours per week.

Writing Assignments

1. Brief one page review 2. Short answer forms 3. Final exam (true/false, short answer) 4. Proficiency demonstration using software technology 1-2 hours per week.

Out-of-class Assignments

Assigned research related to use of software and its application in industry. 1-2 hours per week.

Demonstration of Critical Thinking

Problem-solving exercises, skills demonstrations, reading and writing assignments, 3D design work, use of Avatars.

Required Writing, Problem Solving, Skills Demonstration

Reading/writing assignments, design boards, 3D application of design principles, terminology, and resources.

Eligible Disciplines

Fashion and related technologies (merchandising, design, production): Any bachelors degree and two years of professional experience, or any associate degree and six years of professional experience.

Software Resources

1. CLO 3D CLO 7.1CLO VIRTUAL FASHION. CLO 3D, latest ed. 3D design software required for course

Other Resources

1. Instructional handout and videos provided by instructor.