一、基本정보

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과목설명

This is a class for learning how to create realistic human characters using Zbrush and Maya software. It includes the learning of new software, Zbrush, and learning advanced human anatomy, Ecorche.

First, students will learn about the new software, Zbrush. Using this software, student will create a detailed human model. Later, by learning Ecorche, they’ll amend their model according to correct anatomy.

二、교육 목표 및 임무

An Ecorché/3D anatomy model is a centuries old method of learning anatomy through three-dimensional means. Ecorché (French for “flayed body”) refers to human or animal anatomical constructions by which you can see the interplay between the skeleton, tendons, ligaments and muscles that creates what we see on the living form. It is an essential means for every figurative artist to better interpret the form though knowledge of what is observed. Traditionally, an Ecorché would use clay as a tool, but in this class, we’ll use 3D software Zbrush and Maya. This is an intense, hands-on approach to learning the body — a necessity for any artist concerned with learning accurate anatomical representation.
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Chapter 1. Introduction to “Normal Map”

본장 교학목적 : Learn the new maps called “normal map” and “displacement map”

본장 주요내용 : What is a normal map?

1. What is the Normal Map and Displacement map?
2. How to create Normal map and Displacement map in Maya.
3. How to create Normal map using Photoshop plug-ins
4. Importance of the Topology in Maya base model

본장 난점 : Students need to understand the new concept of normal map

본장 중점 : How to create a Normal map in Maya

By Dariush Derakhshani

본장 사고문제 : When is a good time to use Normal map?

Chapter 2. Introduction to Zbrush Software

본장 교학목적 : Learning the new software, Zbrush

본장 주요내용 : We’ll take an introductory look at ZBrush, a powerful sculpting, painting, and illustration application. Class will begin by exploring the ZBrush interface and cover the process of getting geometry ready to sculpt so student can jump in and begin creating the model.

본장 난점 : There are big differences between traditional 3D software and Zbrush

본장 중점 : Understanding the basic concept of Zbrush software

본장 참고문헌 : Sculpting from the Imagination: Zbrush; Editor-3DTotal publishing

본장 사고문제 : Why do we have to use Zbrush?

Chapter 3. Interface Fundamentals

본장 교학목적 : Learning the interface of the Zbrush software
In this session, you’ll learn to create your first sculpt while learning the basics of the interface and the six tools you need to know to work in Zbrush.

1. Interface
2. Edit mode
3. Your first sculpt

There are big differences between traditional 3D software and Zbrush.

Getting used to Zbrush’s interface

Sculpting from the Imagination: Zbrush; Editor-3DTotal publishing

Why the interface of Zbrush is so different from Maya?

Chapter 4. The Zbrush Brush System and Dynamesh

Learning the basic tools

Learning how to control form better inside of Zbrush

1. Brush system
2. Dynamesh
3. Controlling hard and soft edges

Getting used to the stylus pen

Learning the different brushes

Sculpting from the Imagination: Zbrush; Editor-3DTotal publishing

Which brush is useful in which cases?

Chapter 5. Alphas, Stamps, Tileable Strokes

Learning how to control form better inside of Zbrush

Using Alphas, Stamps, Tileable strokes

How to block in a character or prop

How to use Alphas cleverly

Sculpting from the Imagination: Zbrush; Editor-3DTotal publishing

What is a good use of Alphas?

Chapter 6. Managing Multiple Objects

Learning to build up to working on a full character and dive deeper into
Zbrush’s object management system

본장 주요내용:
1. Subtools
2. Visibility
3. Merging & Separating
4. Topology Primer

본장 난점, 중점: Working with Multiple Objects

본장 참고문헌: Sculpting from the Imagination: Zbrush; Editor-3DTotal publishing

본장 사고문제: When and where do we have to use multiple objects in Zbrush?

Chapter 7. Lighting and Materials

본장 교학목적: We'll cover the materials and lightings in Zbrush

본장 주요내용:
1. Lighting
2. Materials
3. BPR Rendering
4. Exporting to Photoshop

본장 난점, 중점: Understanding the shading methods in Zbrush

본장 참고문헌: Sculpting from the Imagination: Zbrush; Editor-3DTotal publishing

본장 사고문제: What are correct materials for certain parts?

Chapter 8. Generating maps in Zbrush

본장 교학목적: Exporting details from Zbrush

본장 주요내용: How to generate various maps
1. Normal map
2. Displacement map
3. Cavity map

본장 난점: Understanding the concept of exporting the details from Zbrush

본장 중점: How to create various maps and how to use them

본장 참고문헌: Sculpting from the Imagination: Zbrush; Editor-3DTotal publishing

본장 사고문제: How can we apply these maps in Maya?
Chapter 9. Human Anatomy In Depth (Body)

본장 교학목적 : Learning the Anatomy of the Human Body
본장 주요내용 : Introduction to the “Ecorche”
1. What is Ecorche?
2. How to approach the “Ecorche” in 3D software
본장 난점 : Too many bones in the human body
본장 중점 : Understanding real human anatomy
본장 참고문헌 :
본장 사고문제 : What makes human sculpting so hard? Why Ecorche is important in character modeling?

Chapter 10. Human Anatomy In Depth (Head)

본장 교학목적 : Learning the Anatomy of the Human Head
본장 주요내용 : Skull and facial features
1. Basic shape of the Skull
2. Facial features (eyes, nose, mouth, etc.)
3. Differences between different races and sexes
본장 난점 : Every human face looks different
본장 중점 : How to make good looking human head
본장 참고문헌 :
본장 사고문제 : How can we make a face prettier?

Chapter 11. Muscle and Aging
Chapter 12. Skin Details and Realistic Eyes
본장 교학목적 : Understanding the small details in human skin
본장 주요내용 :
   1. Skin details (Pores, wrinkles, etc.)
   2. Realistic Human Eyes
본장 난점/중점 : What makes human skin and eyes look real?
본장 참고 문헌 :
   1. John Cody, Visualizing Muscles: A New Ecorche Approach to Surface Anatomy,
      092223339X
본장 사고문제 : How to make your model’s skin look more realistic?

Chapter 13. Color map in Zbrush
본장 교학목적 : How to create the color map in Zbrush
본장 주요내용 : Texturing in Zbrush
본장 난점, 중점 : 3D painting in Zbrush
본장 참고 문헌 :


본장 사고문제 : What is the best way to create realistic skin textures?

Chapter 14. Specular Map and SSS

본장 교학목적 : Making skin look real

본장 주요내용 :
1. Specular map
2. Subsurface Scattering

본장 난점 : What makes human skin special

본장 중점 : Understanding the basic concept of SSS

By Dariush Derakhshani

본장 사고문제 : What’s the skin difference between different races?

Chapter 15. Basic lighting and shading

본장 교학목적 : Learning natural lighting and rendering

본장 주요내용 : How to light a realistic model

본장 난점 : How to use lights to render realistic characters.

본장 중점 : What makes 3D models look real?

By Dariush Derakhshani

본장 사고문제 : What’s the real lighting setup for a human portrait picture?

Chapter 16. Critiques

본장 교학목적 : Learn how to prepare final product with critique

본장 주요내용 : Learn how to accept other opinions during critique and plan to fix and polish

본장 난점 : Students need to see their work from other perspectives and develop

본장 참고 문헌 :
1. John Cody, Visualizing Muscles: A New Ecorche Approach to Surface Anatomy,

   092223339X

본장 사고문제 : Critique, final quality, group critique

五、 실험. 실천내용

실천내용
1. 주차 : Creating Normal map and Displacement map in Maya
2-4 주차 : Making simple objects in Zbrush
5-6 주차 : Using basic model from Maya, add details in Zbrush
7 주차 : Render simple images of the character
8 주차 : Create Normal map, Displacement map, Cavity map then assign them to Maya’s model
9-11 주차 : Fixing the model in Zbrush, adding more details
12 주차 : Creating more detailed skin and eyes
13 주차 : Creating basic Color map in Zbrush
14 주차 : Creating Specular map and other maps for SSS
15 주차 : Using all the maps from Zbrush, render the final image in Maya

六、평가방식 및 요구

Final project 80% + 평소점수 20% 반영.

七、추천 교재 및 참고서적

본장 참고문헌 : 주교재:
1. John Cody. Visualizing Muscles: A New Ecorche Approach to Surface Anatomy,
2. Sculpting From the Imagination: Zbrush; Editor-3DTotal publishing

부교재:
   By Dariush Derakhshani