Intro to Digital Sculpting with Jorge Norgaard

CLASS SYLLABUS

GENERAL OBJECTIVES / Course overview.

- Understand how to produce a character with costumes and props that conveys story and emotion through color, lighting and dynamic posing.

- Students will have creative freedom to refine and explore different options with their design proposal.

- Understanding of anatomy, creatures and humans alike.

- Understanding of sculpting fundamentals (primary, secondary and tertiary forms)

- Understand lighting through the use of Zbrush BPR. Composite and create final images in Photoshop with the character showing storytelling through composition and design.

- Prepare a 3D model for 3D printing.

Day 1: Introduction to Zbrush

- Welcome.

- Instructor background.

- Introduction to Zbrush

- Interface navigation.

- Introduction to Dynamesh.

a) What is the resolution slider controlling?

- Brush types and hotkeys.

- How to sculpt a skull and anatomy exercises 2min - 5 min - 10 min exercises.

- Learn to save work in the program. Difference between 2.5D and 3D

- Introduction to masking and selection masking. How to use lasso, rectangle and MaskPen.

- How to inverse, clear, sharpen, blur and paint away masking.

- How to hide, slice, trim and clip geometry.

- How to use Spotlight to upload reference images into the program.

- What are IMM (insert multi mesh / insert mesh) brushes. How to use them to your advantage.

- How to use the Transpose line and Gizmo and their main differences.

- Lecture/demonstration: sculpting a human and creature skull/head using dynamesh. Primary forms

Student's homework: feedback first come, first serve.

1) Sculpt 5 skulls - 2 mins ea. 3 skulls - 5 mins ea., 3 skulls - 10 mins ea. (the more skulls the better)

2) Design a character, redesign an existing character or choose an existing concept design for the final project. Research reference, inspiration and bring a design sheet for the final project. Final project is to create a character, creature or human and 3D print. Extra: choose to what industry your project is directed to.

- Book references:

- Anatomy for Sculptors: Understanding the Human Figure

- Anatomy for 3D artists: The Essential guide for 3D professionals

- https://www.bodiesinmotion.photo/

- Stan Prokopenko

- The Art of books (games and film) - Fallout 4 - Skyrim - Guardians of The Galaxy - Avengers - God of War - StarWars - The Mandalorian - MCU - DCU - etc…

Upload all homework to the drive, create your own folder!

https://drive.google.com/drive/folders/1cGXac4j3aVrcEI6cp61YYb18BHvd1Q_Q

Day 2: Zspheres: full body creations, horns, limbs, etc. Subtools

- Review student exercises.

- Cover the basics of Zsphere creation and editing.

- Introduction to Subtools

- How to create a human and creature body using Zspheres.

- Introduction to Polygroups. How to hide and show parts of the mesh.

- Layers: creating design variations.

- Students begin working on the final project, blocking their characters in Zspheres and Dynamesh covering primary forms and anatomy.

Students' homework: Sculpt 4 or more heads using Dynamesh. 2 creatures and 2 humans. no more than 1 hour each.

Start working on the final project.

Day4 : Zremesher, Subdivision Levels and Layers

- When to come out of Dynamesh.

- Introduction to Zremesher and mesh Subdivision levels: Advantages of having clean geometry when sculpting.

- Performance advantages of subdivision level.

- Extract to create costumes and accessories.

- How to Project details from dynamesh to a subdivided subtool.

- Sculpt demo going over the lecture.

Students' homework: Finish refining primary forms of the character. Block-out costumes using extract tools and IMM brushes. Create variations: overall design.

Day 5: Zmodeler and Dynamics.

- Introduction to Zmodeler and hard surface modeling: prop creation and topology brush.

- Introduction to Target options, crease edges, Qmesh, extrude.

- Boolean tool.

- Kitbashing in Zbrush.

- Using clip and slice brushes to create quick hard surface models.

- Introduction to the topology brush and creating a clean mesh.

- Introduction to Dynamics. How to create cloth simulation and using cloth brushes.

Students' homework: Finish refining secondary forms of the character. Refine costumes and props.

Day 6: Fine detailing, Polypainting.

- Alphas.

- The basics of polypainting.

- Understanding geometry resolution and polypainting.

- What is RGB intensity?

- How to apply textures to the brush for painting: Alphas!

- Demo on how to paint skin. Color Depth.

- Advantages of masking when polypainting.

- Masking by cavity, features, peaks and valleys.

- Students continue working on the final project in class.

Students' homework: Finish sculpt and polypaint. Create 3 color variations

Day 7: Fibermesh, Noisemaker and Transpose Master.

- Lecture/demo on how to create fibermesh/hair showing masks for hair, learning fiber densities and styling.

- Introduction to groom brushes.

- How to create surface noise like cloth, weaves, hex, skin surfaces, etc...

- Students continue working on the final project.

- Demo: how to create a dynamic pose. Refining anatomy to fit the pose.

Students' homework: Pose character, refine sculpt to fit the pose.

Day 8: Materials and Lighting

- Difference between standard materials and MatCap materials.

- How to create your own lighting and BPR rendering.

- How to create a turntable and final renders for final presentation day.

- How to export render passes to Photoshop.

- How to composite renderpasses in PSD to create a final image.

- Students continue working on the final project in class.

Students' homework: Render and create images. Experiment with lighting and mood.

Day 9: Decimation master, preparing file for 3D printing.

- How to split sculpture and create keys.

- Prepare models for 3D printing using Decimation Master.

- How to scale and export files for 3D printing.

- Extra: Polishing 3D scanned models

- Students continue working on the final project in class.

Students' homework: Split, key and hollow sculptures. Prepare files for 3D printing.

FINAL PROJECT

Finished character model.

Show 3 to 5 gray renders showing different angles of the character. Close-ups are welcomed. Display the design variations done during the class.

1 or 2 beauty renders that sell the model and story.

1 Turntable of the character.

Bring a 3D print ready file.

Day 10: Presentation Day

- Students present their final project to the class.

- Student’s class reviews and accomplishments.