

# Character Pre-Production for 3D Animation - Syllabus

Lectures: Thursdays, 6:00 - 8:50, June 23 - August 19, 2016

## Sample class schedule

- Review of last assignment (short)
- Lecture and demo
- Lab time

## 1. Character Design

- Intro and overview of whole course and process
- What is not covered: hi-res modeling, painting/ripping maps, UVs, shading, face modeling, rigging
- Intro to production stages: character design, block model, grey model
- Lecture on what makes a good animated character design
- Select from character archetypes
- Demo: creating orthographic concepts
- Demo: setting up image planes in Maya
- EXTRA - draw concept art for costume design

### Assignment #1, Character Design

- Select one of the character archetypes
- Draw orthographic sketches
- Load orthographic sketches on image planes in Maya

**Tuesday Lab:** Work on assignment and review with TAs

**Thursday Lab:** Tech demo: Joints and polygon modeling basics

## 2. Creating the Skeleton

- Demo and lecture:
- skeleton building

### Assignment #2, Creating the Block Model

- Build the skeleton based on the orthographic illustrations

**Tuesday Lab:** Work on assignment and review with TAs

**Thursday Lab:** Tech demo: posing and keyframing the control rig

## 3. Creating the Block Model and Pose Testing

- Create low res block model geometry
- Add spans to the block models and sculpt the vertices into place
- Testing proportions for functionality while building
- Lecture on character silhouettes
- Demo on pose testing
- Apply a simple control rig to the block model skeleton
- Create poses on block model with simple control rig
- Lecture on what makes a good pose
- Tweaking skeletal and model proportions based on results from pose test

### Assignment #3, Pose Testing

- Create a series of poses that test the block model's proportions
- Poses: push, pull, carry heavy/light/large/small, leaning to one side pulling leg up, leaning forward, sitting, crouch, arms up reaching, relaxed idle neutral, twist left/right, front bend

**Tuesday Lab:** Work on assignment and review with TAs

**Thursday Lab:** Tech demo: advanced polygon modeling

## 4. Creating the Grey Model

- Demo: combine block models into grey model base mesh, manifold mesh
  - Add spans to preserve volume for good deformations
  - Lecture on building model topology for good deformations
  - Skin weighting
- EXTRA - Building costume elements from grey model base mesh

### Assignment #4, Creating the Grey Model

- Combine low res block models to a manifold grey model
- Add edge loops to support good deformations
- Use smooth binding to skin weight the model to the skeleton

**Tuesday Lab:** Work on assignment and review with TAs

**Thursday Lab:** tech demo: character animation

## 5. Animation Testing

- Demo: animation test
  - Apply simple control rig to the grey model skeleton
  - Lecture: creating a simple animation like a jump
  - Draw a planning sheet for the jump animation
  - Analyze how the character holds up in animation
- EXTRA - Apply corrections to skeleton and model learned from animation testing

### Assignment #5, Animation Testing

- Run the script to apply a simple control rig to the skeleton
- Create a simple animation to test how the character holds up
- We only need the 5 main poses

## Late Work Policy

It is assumed that your work will be on time. Incomplete work will be turned in on time so that it can be evaluated with everyone else. Under some rare and extenuating circumstances, the staff may decide to grade revised projects. Under these circumstances, there will be a **0.5 deduction** every day the project is late. After three days, it will be up to the staff to decide whether or not the project will be graded. This breakdown is subject to change as a whole and is adjustable on a per-student basis in exceptional cases.