# Character Pre-Production for 3D Animation - Syllabus

Lectures: Thursdays, 6:00 - 8:50, July 24 - August 22, 2014

## 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