# Character Pre-Production for 3D Animation - Syllabus

Lectures: Tuesdays and Thursdays, 11:00 AM – 1:50 PM [course calendar](https://courses.cs.washington.edu/courses/cse490j/18su/calendar/calendar.html)

## Sample class schedule

- Review of last assignment (short)

- Lecture

- Assignment and demo

- Lab time

## 1. Concept Art and Skeleton

- 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, gray model

- Demo: skeleton building

### Assignment #1

- Select one of the character archetypes

- Draw orthographic sketches

- Load orthographic sketches on image planes in Maya

- Build the skeleton based on the orthographic illustrations

## 2. Block Model and Pose Testing

- Introduction to polygon modeling

- Create low res block model geometry

- Add spans to the block models and sculpt the vertices into place

- Testing proportions for functionality while building

- Tweaking skeletal and model proportions based on results from pose test

### Assignment #2

- 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

## 3. Gray Model

- Demo: combine block models into gray 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 gray model base mesh

### Assignment #3

- Basic polygon modeling

- Combine low res block models to a manifold gray model

- Add edge loops to support good deformations

## 4. Gray Model Pose Testing

- Refining proportions

- Defining the bind pose

- Combine the block model into a gray model

- Add detail and sculpt

### Assignment #4

- Skin weighting

- Pose testing

## 5. Gray Model Costume

- Modeling the costume

- Modeling a jacket

- Modeling pants

- Modeling accessories – gloves, shoes, hat and headphones

### Assignment #5

- Additional polygon modeling techniques

- Adding costume elements to your character

## 6. Basic Rigging

- Adding basic rig controls to your character

### Assignment #6

- Creating a basic IK setup

- Quick select sets

- Cleaning up the control rig scene

## 7. Animation Testing

- Demo: animation test

- Lecture: creating a simple jump animation

- Analyze how the character holds up in animation

### Assignment #7

- 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.