

**IMPORTANT:**

Please refer to the [USC Center for Excellence in Teaching](#) for current best practices in syllabus and course design. This document is intended to be a customizable template that primarily includes the technical elements required for the Curriculum Office to forward your proposal to the UCOC.

**ITP 415: Game Production and 3d Character Modeling****Units: 3****Fall 2020****Lecture: Tuesday: 6:00 - 7:50 pm****Location:** KAL 107**Instructor:** St.John Colón**Office:** TBD**Office Hours:** TBD, or by appointment**Contact Info:** [scolon@usc.edu](mailto:scolon@usc.edu)**Teaching Assistant:** TBD**Office:** TBD**Office Hours:** Before, after, and during class**Contact Info:** TBD**IT Help:**Viterbi IT: <https://vsoeweb.vsoe.usc.edu/helpdeskpro/>USC ITS: <https://itservices.usc.edu/>**Hours of Service:**

Phone: 24 hours per day, 7 days per week

Email: M-F, 8am – 6pm

**Contact Info:** 213.740.5555

## **Course Description**

Explore the range of 3D character design and 3d character building technologies, and their application in modern cinematic, game, and creative fields. Learn the needs and requirements for character development, design and 3d modeling in modern game and animation studios.

## **Learning Objectives**

Explore character design principles, rubrics, visual communication and their applications. Apply 3D modeling, ideation, and design techniques for video game character development. Explore successful modeling methodologies, topologies for both body and facial building, and deformation tolerances, and an overview of the 3d modeling software Maya.

**Prerequisite(s):** No Prerequisite

**Recommended Preparation:** Experience with 2d graphics, 3d modeling, or CAD useful but not required.

## **Course Notes**

There is no text for the course, however each student is expected to make use of the many resources available online, including Autodesk learning documentation, Linda.com resources, and course materials on Blackboard. Course materials, assignment submissions, lecture slides, and updates will be posted on Blackboard. This course is for a letter grade. The grading scale for the course is listed below. Students should plan to bring note taking materials, sketchbooks, or other materials for brainstorming, note taking, sketching, and design work.

## **Technological Proficiency and Hardware/Software**

- Autodesk Maya 2019
- Adobe Photoshop

## **Required Readings and Supplementary Materials**

Materials available on Blackboard.usc.edu

## **Description and Assessment of Assignments**

Projects will be assigned and submitted via Blackboard. Many assignments will have a deliverable set of 2d and 3d assets but should be supported with the supplementary files and assets required in the assignment details.

## Grading Breakdown

All assignments and grading criteria will be posted and submitted via Blackboard.usc.edu.

Assignment	Points	% of Grade
Character Sketch	10	5
Cinematic or Game Description	10	5
Retopology Body 2d assignment	10	5
Retopology Facial 2d assignment	10	5
Draw overs and modifications to Design	10	5
2d Retopology for Body Deformation	10	5
2d Retopology for Facial Deformation	10	5
3d Modeling of Head	20	10
3d Modeling of Body	20	10
Final 3d model for body and face	30	15
Rigging and Deformation test	20	10
Weighting Character	20	10
Participation	20	10
TOTAL	200	100

## Attendance/Tardiness Policy:

Students should be in class every day and for every lab session. If you are not able to attend, you must contact your advisor and instructor. Unexcused absences will negatively affect your grade. Students must arrive to class promptly. Points will be deducted for tardiness. Repeat tardiness will increase the points deduction per instance of tardiness. Additionally, any student who does not show up within 15 minutes of the start of either the morning and afternoon sessions will be reported to the summer program advisor. Please set an extra alarm and show up on time!

## Grading Scale (Example)

Course final grades will be determined using the following scale

A	95-100
A-	90-94
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66
D-	60-62
F	59 and below

## Assignment Rubrics

Assignments and Rubrics will be available on Blackboard.usc.edu

## Assignment Submission Policy

All assignments, submission rules, and details will be published on Blackboard.usc.edu.

**Grading Timeline**

Assignments will be graded as quickly and efficiently as possible. Due to the five day per week course schedule, grades may not be posted until the weekend following each week.

**Additional Policies**

Add any additional policies that students should be aware of: late assignments, missed classes, attendance expectations, use of technology in the classroom, etc.

## Course Schedule: A Weekly Breakdown

Below is the detailed course calendar that includes a list of deliverables (homework assignments, examinations, etc.) broken down on a weekly basis. It includes:

- Subject matter, topic and activity
- Required preparatory reading or tasks (e.g., viewing videos)
- Deliverables and when each deliverable is due.

	Topics/Daily Activities	Readings/Preparation	Deliverables
Week 1	<p><b>Introduction to course</b> Special hours to accommodate orientation:</p> <p><i>Part 1 content:</i> USC code of conduct USC Blackboard, USC Lynda.com</p>	<p><i>Phase One: List favorite games or stories that you would like to design or redesign a character.</i></p> <p><i>Phase Two: Part out drawings into front, side and back projections for online portfolio.</i></p> <p><i>Each student will build their own design. However, they are invited to group together should they want to collaborate.</i></p>	<p><b>Drawing:</b> Create Online Design Portfolio (See details on Blackboard)</p> <p>Create sketches from side front using pixlr or photoshop</p> <p>Show basic shapes of character/Intro edge loop flow</p>
Week 2	<p><b>Introduction to Maya</b> Maya and web support resources: Online help, class webpage, tutorials, etc.</p>	<p><i>Modeling:</i> Modeling with primitives</p> <p>Basic mesh tools: Basic Maya shapes, manipulating objects transforms.</p> <p><i>Design:</i> <b>Create first pass of character avatar design using simple Maya geometry</b></p>	<p><b>Drawing:</b> Save image of building-block avatar (below) to your online portfolio. Study teacher-selected SDKs of professional models from polycount.</p> <p><b>3D:</b> <b>Construct a basic building block avatar of character using simple Maya geometry.</b></p>
Week 3	<p><b>Complex Maya modeling</b></p>	<p><i>Part 1:</i> Teach higher level of Maya's complex modeling capabilities.</p> <p><i>Part 2 Lab:</i> Create the complex Maya pBall 3d model In-class tutorial and video tutorial for Part 2 instruction.</p>	<p><b>Drawing:</b> Drawover character sketch using basic geometry</p> <p><b>3D:</b> Create 'baseman' simple character in Maya. Tutorial on class website.</p>

<b>Week 4</b>	<b>Sorting UVs in Maya</b>	<p><i>Part 1:</i> UVs versus polygon modeling</p> <p><i>Part 2 Lab:</i> Sort out the UVs in pBall 3d model for existing texture. In-class tutorial and video tutorial for Part 2 instruction.</p>	<p><b>3D:</b> UV layout 'baseman' in Maya (video tutorial on class website)</p>
<b>Week 5</b>	<b>Sorting UVs in Maya</b>	<p><i>Part 1:</i> Edge loops and design unique to the character's needs (action vs static).</p> <p><i>Part 2 Lab:</i> Reconstruct character in more complex Maya 3d geometry, unwrap UVs.</p>	<p><b>3D:</b> Layout original character using more complex shapes in Maya</p>
<b>Week 6</b>	<b>Laying out 'Shoebox Garage'</b>	<p><i>Part 1:</i> Training of using image planes with reference in Maya for accurate creature of 3d models according to image layouts. Goal is to understand poly flow.</p> <p><i>Part 2 Lab:</i> Use method of 'Shoebox Garage' image. Choose character for creation, set up planes Build half of character for modeling.</p>	<p><b>3D:</b> Precision Measurement for accurate 3d creation. Build half of the chosen character. (See details on class webpage)</p>
<b>Week 7</b>	<b>Choose textures for 3D model</b>	<p><i>Part 1:</i> Training of using image using pixlr.com or Photoshop to find and use images for texturing the polygon layout.</p> <p><i>Part 2 Lab:</i> Texture the built 3d character model</p>	<p><b>Drawing/3D:</b> Utilize online images for texture for 3d modeled character. Texture the chosen character, mirror finished product.</p>
<b>Week 8</b>	<b>Character modeling vs prop modeling</b>	<p><i>Part 1:</i></p>	<p><b>Drawing:</b></p>

		<p>Training of using Maya for edge flow modeling and connecting cylinders for organic modeling vs. extrusions. Edge flow for deformation.</p> <p><i>Part 2 Lab:</i> Redraw character using edge flow. Study existing polycount SDK models.</p>	<p>Download/study polycount SDKs for edge flow. Draw edge flow of character on 2d printout or digital printout of character.</p> <p><b>3D:</b> Rebuild/modify character polylines according to new edge flow</p>
<b>Week 9</b>	<b>Review of Character in group.</b>	<p><i>Part 1:</i> Form teams for instructor review of character modeling. Advice of trimming flow down to match the defined role. Second drawover in class.</p> <p><i>Part 2 Lab:</i> Start modeling character according to new image planes.</p>	<p><b>Drawing:</b> Rebuild edge flow of character.</p> <p><b>3D:</b> Start modeling character body according to new image planes</p>
<b>Week 10</b>	Review of Character body modeling.	<p><i>Part 1:</i> Discussion of unwrapping body UVs versus face</p> <p><i>Part 2 Lab:</i> Begin modifying unwrapped UVs.</p>	<p><b>3D:</b> Finish unwrapping body UVs Paint over image projection.</p>
<b>Week 11</b>		<p><i>Part 1:</i> Teach transfer of projected image to texture map for character body.</p> <p><i>Part 2 Lab:</i> Painted Image projections for body texture map – transfer 3d image to 2d flat image.</p>	<p><b>3D:</b> Transfer painted image planes into 3d UV texture map.</p>
<b>Week 12</b>		<p><i>Part 1:</i> Teach transfer of projected image to</p>	<p><b>3D:</b> Finish texture for body</p>

		texture map for character body.  <i>Part 2 Lab:</i> Painted Image projections for body texture map – transfer 3d image to 2d flat image.	Drawing: Add painted image projection onto Online Portfolio
<b>Week 13</b>		<i>Part 1:</i> Teach poly loops for face – mouth bag, teeth if necessary.  <i>Part 2 Lab:</i> Model the 3d character head.	<b>3D:</b> Model the 3d character head
<b>Week 14</b>		<i>Part 1/ Part 2 Lab:</i> UV unwrap the head	<b>3D:</b> UV unwrap the 3d character head
<b>Week 15</b>		<i>Part 1/ Part 2 Lab:</i> Texture the head	<b>3D:</b> Texture the 3d character head, join with body.
<b>FINAL</b>		Final Presentations	Refer to the final exam schedule in the USC <i>Schedule of Classes</i> at <a href="http://classes.usc.edu">classes.usc.edu</a> .

### Statement on Academic Conduct and Support Systems

#### Academic Conduct:

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, “Behavior Violating University Standards” [policy.usc.edu/scampus-part-b](http://policy.usc.edu/scampus-part-b). Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, [policy.usc.edu/scientific-misconduct](http://policy.usc.edu/scientific-misconduct).

#### Support Systems:

*Student Health Counseling Services* - (213) 740-7711 – 24/7 on call  
[engemannshc.usc.edu/counseling](http://engemannshc.usc.edu/counseling)

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

*Student Health Leave Coordinator* – 213-821-4710

Located in the USC Support and Advocacy office, the Health Leave Coordinator processes requests for health leaves of absence and advocates for students taking such leaves when needed.  
<https://policy.usc.edu/student-health-leave-absence/>

*National Suicide Prevention Lifeline* - 1 (800) 273-8255 – 24/7 on call



[suicidepreventionlifeline.org](https://suicidepreventionlifeline.org)

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

*Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-4900 – 24/7 on call*

[engemannshc.usc.edu/rsvp](https://engemannshc.usc.edu/rsvp)

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

*Office of Equity and Diversity (OED) | Title IX - (213) 740-5086*

[equity.usc.edu](https://equity.usc.edu), [titleix.usc.edu](https://titleix.usc.edu)

Information about how to get help or help a survivor of harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants. The university prohibits discrimination or harassment based on the following protected characteristics: race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, age, physical disability, medical condition, mental disability, marital status, pregnancy, veteran status, genetic information, and any other characteristic which may be specified in applicable laws and governmental regulations.

*Bias Assessment Response and Support - (213) 740-2421*

[studentaffairs.usc.edu/bias-assessment-response-support](https://studentaffairs.usc.edu/bias-assessment-response-support)

Avenue to report incidents of bias, hate crimes, and microaggressions for appropriate investigation and response.

*The Office of Disability Services and Programs - (213) 740-0776*

[dsp.usc.edu](https://dsp.usc.edu)

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

*USC Support and Advocacy - (213) 821-4710*

[studentaffairs.usc.edu/ssa](https://studentaffairs.usc.edu/ssa)

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

*Diversity at USC - (213) 740-2101*

[diversity.usc.edu](https://diversity.usc.edu)

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

*USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call*

[dps.usc.edu](https://dps.usc.edu), [emergency.usc.edu](https://emergency.usc.edu)

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

*USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call*

[dps.usc.edu](https://dps.usc.edu)

Non-emergency assistance or information.

### **Diversity and Inclusion**

Diversity and Inclusion are foundational to the SCA community. We are committed to fostering a welcoming and supportive environment where students of all identities and backgrounds can flourish. The classroom should be a space for open discussion of ideas and self-expression; however, SCA will not

tolerate verbal or written abuse, threats, harassment, intimidation or violence against person or property. If students are concerned about these matters in the classroom setting they are encouraged to contact their SCA Diversity and Inclusion Liaison, <http://cinema.usc.edu/about/diversity.cfm>; e-mail [diversity@cinema.usc.edu](mailto:diversity@cinema.usc.edu). You can also report discrimination based on a protected class here <https://equity.usc.edu/harassment-or-discrimination/>

**Disruptive Student Behavior:**

Behavior that persistently or grossly interferes with classroom activities is considered disruptive behavior and may be subject to disciplinary action. Such behavior inhibits other students' ability to learn and an instructor's ability to teach. A student responsible for disruptive behavior may be required to leave class pending discussion and resolution of the problem and may be reported to the Office of Student Judicial Affairs for disciplinary action.

**PLEASE NOTE:**

**FOOD AND DRINKS (OTHER THAN WATER) ARE NOT PERMITTED IN ANY INSTRUCTIONAL SPACES IN THE CINEMATIC ARTS COMPLEX**