ARCH 219: Design at the Scale of the Human Body Workshop

4 Units

The first two workshops will lay down the foundation for the study of design, from architecture to graphic design to design at the level of products or furnishings. Students will focus on the fundamentals of design (color theory, form, principles of composition, studies of materiality, and visual analysis), moving from 2D to 2.5D design to 3D design. Essential design theories and ideas, like figure/ground relationships, scale, field conditions, etc. will be taught along the way, along with the historical and social movements from which these ideas and theories were derived. Particular focus will be on the scale of the human body and how it informs, interferes or interacts with furniture, goods and furnishing for the interior or the exterior, for the workplace or the home. The intent is to give students a background level of knowledge of how to design in all the scales, materials, and methods they will be asked to design throughout this course of study.

Architectural scale ranges from small to large and can be debatable, but most would agree that it is defined by human occupation. In many ways, the inhabitation of the human body and the interaction of parts of the body that distinctly separate it from other portable consumer products. At the smallest scale, these elements are furniture-like, conforming to the body, while the largest can be complete dwellings or pre-fab structures. This course interrogates the smallest unit albeit a piece of furniture, playground piece or building element. How that same unit connects to the adjacent space, program, function, economics and culture that surrounds it in what we call context plays an important role in the validity of this project.

Students will look at diverse precedents and will be encouraged to design responsibly for planet wellness, human wellness and equity.
Learning Objectives

The course aims to encourage students to:

– Introduce the concept of designing in relation to the size of the human body. Students will learn about a variety of historic and contemporary methods of measurement to discover mathematical proportions of the human body, with the intent to use that knowledge to improve the function and appearance of the built environment. Students will demonstrate this knowledge through a series of projects.

– Demonstrate understanding of wellness through ergonomics in the workplace and domestic settings beyond requirements stipulated by the Occupational Safety and Health Administration (OSHA) which they will demonstrate in a series of projects.

– Analyze the context of furniture elements to interiors as well as public outdoor settings, and apply this to their projects.

– Test their ideas of materiality, structures and assembly systems with consideration to cost, manufacturing and affordability through a series of projects.

– Consider and implement sustainable practices within the context of their assignments and examine the potential effect of their projects on the climate in an effort to reduce greenhouse gasses.

– Hone analytic and critical thinking skills through the study and application of existing architectural theories to the student’s own design projects.

– Continue to develop design skills, applying knowledge of the fundamentals of design from 2D to 2.5D to 3D designs.

– Continue to develop reasoning and presentation skills while presenting projects graphically and verbally in a series of reviews at the culmination of each project.

Prerequisite(s): ARCH 109: Design Foundation Workshop

Co-Requisite(s): None

Concurrent Enrollment: None
Recommended Preparation:
None

Course Notes
[Course Notes include important information on the course that will not appear elsewhere in the syllabus. This may include the style of the course/teaching, such as flipped, case-based, project-based, etc.]

Communication
[Communication and Technology Policies differ from university policies in that they are course-specific and set by each instructor. Common course-specific policies the instructor will need to create cover communication, in-class work, late work, and technology.]

Technological Proficiency and Hardware/Software Required
Blackboard: Blackboard will be the main platform for turning in assignments and accessing resources.

USC Technology Rental Program
If you need resources to successfully participate in your classes, such as a laptop or internet hotspot, you may be eligible for the university’s equipment rental program. To apply, please submit an USC Technology Rental Program Application.

USC Technology Support Links
Blackboard help for students
Software available to USC Campus

Required Materials
[Required Materials should be listed separately from optional materials. Clearly indicate which materials must be purchased by students and how/where they can obtain them.]

Optional Materials
[Optional Materials are not required but recommended. This section is optional and may be omitted.]

Description and Assessment of Assignments

1. **Attendance and Participation: 10%**
   Students are responsible for either attending all lectures. Students will also be expected to attend at least one discussion section every other week, where they actively engage in the discussion. CA led discussion sections will be held on a twice weekly basis, as a forum to discuss the topics from the lectures and readings in smaller groups and to ask any questions about the readings or lectures.

2. **Project 1: Scaled Conceptual Models and Drawings 20%**
   Analysis of how building elements, furniture, goods, and/or fixtures are scaled to the human body, taking into consideration the dimensions of the building element/furniture/fixture/etc in relation to the dimensions of the human body. Particular attention should be paid to how these elements make interaction between human and element more comfortable or a better fit. Basic concepts of ergonomics might be introduced during this project. Students will present scaled models and drawings of a
single furniture piece they plan to develop in this course.

3. Project 2: Full-scale Prototype 40%
Using the analysis of the human body and building element/furniture/fixture/etc and designs from Project 1, students will work to build full-scale renditions of their project. Using accurate materials is encouraged but not required. The projects need to be sturdy and worthy of testing by actual subjects. Construction drawings, assembly diagrams and manufacturing strategies will also be required.

1. Project 3: Urban Implementation Strategy 30%
Students will be asked to adjust their project in drawings and scaled models to work contextually when the number of units are multiplied in public areas, albeit an interior or exterior condition. Congregation, inclusivity, safety will be covered as part of this urban-thinking exercise. Ideas of storage, maintenance and durability will be part of the criteria.

Participation
Students will be required to participate in group discussions, critiques, and presentations. Continual failure to participate will result in a deduction to participation grade.

Grading Breakdown

<table>
<thead>
<tr>
<th>Assignment</th>
<th>% of Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance/Participation</td>
<td>10%</td>
</tr>
<tr>
<td>Projects</td>
<td>90%</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

Grading Scale
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
Lectures;
A series of lectures that review technical aspects of human-scaled elements will be covered from ergonomics to materiality to assembly methods to dimensions. Theoretical implications will also be covered in these lectures. Attendance is required.

Guest Lectures;
Several outside experts in the field will be invited to present their work, their processes, their anecdotes, their advice and their pitfalls. These lectures are invaluable to the education. Attendance is required.

Field Trips;
This course will travel to one, two or three sites to see first-hand how inhabitable elements such as furniture are designed, implemented or manufactured. Studio or factory tours will be scheduled to occur during class time whenever possible. If the visit is outside of class time, the instructor will provide a permission document that the students must share with other class instructors, if there is a time conflict.

Desk Crits;
Students will get one-on-one critiques with the workshop instructor. Students should have images, precedents, diagrams, drawings and models prepared for discussion and feedback. These private conversations will typically take place at the student’s desk or at a designated location.

Pin-Ups;
Informal pin-ups will be scheduled periodically and as necessary. These pin-ups will be in small groups or with the complete class. Students will be asked to pin-up all work-in-progress for group discussion and critique. Students are encouraged to participate in the review process as both reviewer and presenter.

Assignment Submission and Reviews;
Assignments will be presented in-person and digital images will be submitted through Blackboard. Students are expected to have all work pinned-up and ready for review by the beginning of class time. Late excuses due to digital difficulties will not be acceptable.

Grading Timeline

Late work
Late submission of assignments will result in a deduction of at least one letter grade. Unexcused absences on exam days can lead to a student receiving a “0” for that assignment.

Technology in the classroom

Academic integrity
Attendance
Participation in the discussions are critical in this course. Attendance will be taken in class.

More than one absence will adversely affect the student’s final grade by 1/3 letter. If additional absences are required for a personal illness/family emergency, preapproved academic reason/religious observance, the situation should be discussed and evaluated with the Instructor on a case-by-case basis. It is the student’s responsibility to seek means (if possible) to make up work missed due to absence.

Any student not in class within 10 minutes at the completion of the lecture is considered tardy, and any student absent for more than 1/3 of the class time can be considered fully absent. If arriving late, a student must be respectful of a class in session and do everything possible to minimize the disruption caused by a late arrival.

Classroom norms

Establishing a safe space and a space of respect:
- This course, and its lectures and meetings, is a space of empathy and safety.
- This course, and its lectures and meetings, is also a space where diverse thoughts and feelings are valid and should be respected.
- This course, and its lectures and meetings, is a space to explore diverse texts, places, events, and ideas that might sometimes feel uncomfortable for us to discuss. We want this to be a supportive environment where we can explore difficult problems together.
- There is a limit to all of our knowledge (students, faculty, and CAs included). We’re all going to make mistakes, especially regarding cultures and ideas that are less familiar to us, and that’s okay; we’re all here to learn from each other.
- We should be willing to acknowledge that there are limits to our knowledge that may express unintended biases. We should endeavor to learn from others in an effort to widen our knowledge and empathy.
- We should be respectful and patient with one another (and with ourselves) through this learning process.

Sharing of course materials outside of the learning environment
SCampus Section 11.12(B)
Distribution or use of notes or recordings based on university classes or lectures without the express permission of the instructor for purposes other than individual or group study is a violation of the USC Student Conduct Code. This includes, but is not limited to, providing materials for distribution by services publishing class notes. This restriction on unauthorized use
also applies to all information, which had been distributed to students or in any way had been displayed for use in relationship to the class, whether obtained in class, via email, on the Internet or via any other media. (See Section C.1 Class Notes Policy).

Course evaluation
Course evaluations occur at the midterm point in the course and at the end of the course. It is important to fill out these course evaluations to give a review of the students’ experience in the class.

Course Schedule: A Weekly Breakdown

**Required Texts:** Weekly Readings Posted on Blackboard (See Schedule)

**Course Schedule (with sample lecture topics):**

<table>
<thead>
<tr>
<th>Week 1: August 22-26</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity:</td>
</tr>
<tr>
<td>Lecture: Introduction to Furniture Design</td>
</tr>
<tr>
<td>DUE:</td>
</tr>
<tr>
<td>NA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 2: August 29 - September 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity:</td>
</tr>
<tr>
<td>Guest Lecture: TBD</td>
</tr>
<tr>
<td>DUE:</td>
</tr>
<tr>
<td>Body Measurement Exercise</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 3: September 5-9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity:</td>
</tr>
<tr>
<td>Lecture (Ergonomics) and Pin-Up</td>
</tr>
<tr>
<td>DUE:</td>
</tr>
<tr>
<td>Conceptual/Schematic Design Models and Drawings</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 4: September 12-16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity:</td>
</tr>
<tr>
<td>Lecture (Materiality) and Desk Crits</td>
</tr>
<tr>
<td>DUE:</td>
</tr>
<tr>
<td>Design Development</td>
</tr>
<tr>
<td>Week 5: September 19-23</td>
</tr>
<tr>
<td>------------------------</td>
</tr>
<tr>
<td><strong>Activity:</strong></td>
</tr>
<tr>
<td><strong>DUE:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 6: September 26 - 30</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activity:</strong></td>
</tr>
<tr>
<td><strong>DUE:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 7: October 3-7</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activity:</strong></td>
</tr>
<tr>
<td><strong>DUE:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 8: October 10-14</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activity:</strong></td>
</tr>
<tr>
<td><strong>DUE:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 9: October 17-21</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activity:</strong></td>
</tr>
<tr>
<td><strong>DUE:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 10: October 24-28</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activity:</strong></td>
</tr>
<tr>
<td><strong>DUE:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 11: October 31 - November 4</th>
</tr>
</thead>
</table>

### Activity: Desk Crits
**DUE:** TBD

### Week 12: November 7-11

**Activity:** Review and Follow Up

**DUE:** Project 2

### Week 13: November 14-18

**Activity:** Lecture (Urban Strategies) and Desk Crits

**DUE:** TBD

### Week 14: November 21-25

**Activity:** Desk Crits

**DUE:** TBD

### Week 15: November 28 - December 2

**Activity:** Desk Crits

**DUE:** TBD

**FINAL EXAM:** Final REVIEW: December 7-14
Sample Bibliography:


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:**

*Counseling and Mental Health* - (213) 740-9355 – 24/7 on call
[studenthealth.usc.edu/counseling](http://studenthealth.usc.edu/counseling)
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

*National Suicide Prevention Lifeline* - 1 (800) 273-8255 – 24/7 on call
[suicidepreventionlifeline.org](http://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) 740-9355(WELL), press “0” after hours – 24/7 on call
[studenthealth.usc.edu/sexual-assault](http://studenthealth.usc.edu/sexual-assault)
Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

*Office of Equity and Diversity (OED)* - (213) 740-5086 | Title IX – (213) 821-8298
[equity.usc.edu](http://equity.usc.edu), [titleix.usc.edu](http://titleix.usc.edu)
Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

*Reporting Incidents of Bias or Harassment* - (213) 740-5086 or (213) 821-8298
[usc-advocate.smplicity.com/care_report](http://usc-advocate.smplicity.com/care_report)
Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity |Title IX for appropriate investigation, supportive measures, and response.

*The Office of Disability Services and Programs* - (213) 740-0776
[dsp.usc.edu](http://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 Campus Support and Intervention* - (213) 821-4710
[campussupport.usc.edu](http://campussupport.usc.edu)
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
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, 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
Non-emergency assistance or information.