

Architecture 635 Landscape Construction Assembly and Documentation

Spring 2023

Class Location: Harris 102

Instructor: Esther Margulies ASLA

3 units Fridays 9 am to 11:50 Other meeting times will be arranged for guest lectures or Field Trips

Office hours: Fridays at 12 pm or By Appt.

Contact Information:

Email: emarguli@usc.edu



This course builds an understanding of landscape materials and assemblies, construction documents and sequencing. Students will learn the professional conventions of translating conceptual design into drawings and specifications commonly utilized for the construction of site projects. Illustrated lectures will describe materials commonly used in landscape projects identifying historic material sources, indigenous materials and construction technologies, commercially available material qualities and properties. Each student will develop a resource of site construction details and work throughout the semester to assemble a site construction document package of drawings.

All projects are a product of the humans who design and build them. Diverse and unique perspectives will have an outcome on the construction based on the way we think, our sense of scale or how we draw and document our projects. Our projects should not be generic or identical copies. Using your personality, background and individual thinking will make our work more interesting and diverse. To provide the best construction outcomes in terms of budgets and built work we need to develop and provide clear drawings and specifications that clearly communicate the physical characteristics of our designs. This course will provide you with the fundamental knowledge and skills to document your design work. From those fundamentals you will create the best tools in the future to accomplish great work.

The semester will begin with instruction in AutoCAD including developing drawings, notation and file management for efficient work flows. Students will utilize observation and sketching to analyze assemblies and develop a process of exploring the development of details based on precedents.

We will examine the typical materials and systems utilized in landscape construction, learning about them from their historic sources and uses through current technologies and their environmental impacts.

We have two field trips scheduled to observe recently constructed projects with on grade and over structure conditions. My goal is to have the project designer on site to provide their experience working on the project, to describe the project opportunities and challenges.

The final project in this class will be a set of documents refining a previous studio design work. Each student will define a portion of their previous studio project for detailed documentation including materials plans, layout plans, site sections and elevations, construction details, site lighting, planting and grading plans. The construction details will be developed over the semester. The level of effort for the final project will be reasonable if the progress assignments are completed

All assignments will be turned in via Blackboard. The final project will be due on or before the final exam date for this class. All students are expected to observe the class attendance policy and attend all classes unless they provide an acceptable excuse for their absence.

Readings and class announcements will be distributed via blackboard. The syllabus may be updated periodically throughout the semester.

Learning Objectives:

Students in this course will attain the skills and knowledge to:

1. Navigate through construction document sets and understand their content and organization.
2. Draft plans, sections and details in AutoCad
3. Learn the process of design from conceptual phases to implementation
4. Develop a working knowledge of a wide range of site construction materials, their common uses and properties.

Course Grading

Assignments 1- 10 50 %

Final Construction Drawing Set 40 %

Class Participation 10%

Class Participation

Class participation is evaluated on the basis of a student's engagement in class discussions in class and on our class Slack Channel. Students are expected to complete assigned readings and

observation sketches. All students are expected to ask questions and describe their observations in conversation with the instructor and their classmates.

Class Attendance and Additional Work Requirements

Attendance at all class meetings is mandatory. Students must notify the instructor and request to be excused prior to the class meeting time. Students are expected to spend 6 hours of additional work time each week outside of class time to complete readings and assignments.

Specific content and presentation requirements for all assignments and reviews will be provided by the instructor.

Attendance Policies

The School of Architecture's general attendance policy is to allow a student to miss the equivalent of one week of class sessions – one full class for classes that meet once per week, before directly affecting the student's grade and ability to complete the course. If additional absences are required for a personal illness/family emergency, pre-approved academic reason/religious observance it is the student's responsibility to inform the instructor prior to the absence. Oversleeping or work on other classes are not excused absences.

For each absence over that allowed number, the student's letter grade may be lowered up to one-third of a full letter grade.

If a student needs to be absent due to illness or an emergency it is your responsibility to contact me as your instructor and notify me before class meets.

Required Skills:

This course will require hand drawing, Auto CAD drafting and illustrations.

Software

MS Office or equal, Adobe Creative Suite, Auto CAD PC version is strongly preferred. Students must have the program installed on their laptops. All mac users must have bootcamp and use the PC version of Auto Cad <https://www.autodesk.com/education/free-software/featured>

Required Materials

Hand sketching materials – pencils, eraser, measuring tape

Laptops will be required in class for all Cad lessons Students are expected to be working in CAD during the class time.

USC Technology Support Links

[Zoom information for students](#)

[Blackboard help for students](#)

[Software available to USC Campus](#)

Classroom Norms and On Line Etiquette

Please respect your fellow students and instructor, listen actively and allow your classmates the opportunity to speak. Ask clarifying questions if you don't understand something that was said.

There are no dumb questions in this class. I may not have every answer but I will do my best to find one.

Class Schedule

Date	Lecture Topics and Field Trips	Readings and Assignments
Friday Jan 13	<ol style="list-style-type: none"> 1. Class Introduction <ol style="list-style-type: none"> A. Syllabus review B. Class Expectations C. Assignments D. Academic Integrity 2. Concept to Detail Process 3. Project Phases and level of documentation from Schematic Design to Construction 4. Construction Document Structure Plans, Details, Specifications 5. Materials – how do we define landscape construction materials? What information is valuable, necessary and available ? 	In Class <ul style="list-style-type: none"> • Term Project Identification
Jan 20	<p>Construction Document Sets + CAD #1 Bring Laptops with CAD ready to use to class</p> <ol style="list-style-type: none"> 1. CAD Class #1 –File set up, Layer management, Line weights, Base Plans and importing images and files. 2. Scale – Plan, Section and Details for construction documents 3. Instruction on Drawing annotation, Hatching, sheet set up and plotting including .ctb files n pen weights 4. Selection of Studio project sites for Final Project 	<p>In Class – Materials Observations posted on Miro</p> <p>Assignment 1 – Preliminary Materials Plan Due Date : Thursday January 26rd 8 pm Pin up drawings before class on Jan 27th</p> <p>All students must have Auto CAD installed and be ready for use in class. Cad files will be required for submittal as the assignment deliverables.</p>
Jan 27	<p>Review of Student Project Sites Construction Assemblies Integration of Walls, Stairs, Ramps Handrails</p> <ol style="list-style-type: none"> 1. Site Sections, Elevations, Details 2. Resources for construction information on materials, details and assemblies. 3. Workshop time to review preliminary materials plans 4. Layout and Dimensioning 	<p>Readings : Hopper Paving materials, ramps and railings P. 259 – 284 Strom Chapter 14 Site Layout and Dimensioning P. 291 - 302</p> <p>Pin Up Materials Plans in Class Be ready to share cad drawings in class on your laptop</p> <p>Assignment 2 – Project Dimension and Layout Plan Due January 26th 8pm</p>

February 3	<p>Materials Lecture : 1 Plastic Materials</p> <ol style="list-style-type: none"> 1. Cast in Place Concrete Paving, Curbs and Stairs – Properties, Qualities, Considerations, specifying and detailing 2. Asphalt - Properties, Qualities, Considerations, specifying and detailing <p>Guest Lecture - Evelyn Tickle</p>	<p>Reading : Zimmerman p. 95 – 102</p> <p>Hopper p. 482-505</p> <p>Assignment 3 – Plastic Paving Details Due Date Thursday February 9th 10 pm</p>
Feb 10	<p>Materials Lecture : Paving 2 Unit Masonry</p> <ol style="list-style-type: none"> 1. Precast Concrete Unit Paving – Properties, Qualities, Considerations, specifying and detailing 2. Natural Stone Paving - Properties, Qualities, Considerations, specifying and detailing 3. Lo – Tek Adobe 	<p>Reading: Zimmermann p. 67-75</p> <p>Assignment 4 – Precast Unit and Stone Paving Details Due Date Thursday February 16th 8 pm</p>
February 17	<p>Materials Lecture: Walls –</p> <ol style="list-style-type: none"> 1. Wall Design Structural loads, materials, finish treatments, soil mechanics, sub drainage design considerations 2. Walls Documentation Methods: Plan, detail and specification conventions and standards. 3. Lo- Tek Subak Construction 	<p>Assignment 5 - Wall Details Due Date Thursday February 23rd 8 pm</p> <p>Reading Hopper pages 285 - 303</p>
Feb 24	<p>Materials Lecture Wood Lumber and Living Materials</p> <ol style="list-style-type: none"> 1. Lumber – Commercial sizes, materials, sources, certifications. 2. Wood Decks and Fencing – Framing, foundations, connections 3. Lo – Tek – Living bridges and walls 	<p>Reading Hopper pages 304 – 309, 323-337, 524-531</p> <p>Assignment 6 - Wood Details Due Thursday March 2nd 8 pm</p>
March 3	<p>Materials Lecture – Metals</p> <ol style="list-style-type: none"> 1. Metals – Sources, materials, standard sizes, special conditions, standards, assemblies in screens, fencing, railings, structures and framing. 2. Fence and Gate Details 3. Handrail and Guardrail details 4. Metal edging 5. Metal planters 	<p>Assignment 7 - Metal Details Due Thursday March 9th pm</p> <p>Reading: Hopper pages 309-322, 512– 523</p>

March 10	Materials Lecture - Planting Design and Details 1. Planting Soils – standard testing and amendments, special conditions, sources and documentation 2. Plant Materials – Sources, standard sizes, special conditions, standards 3. Planting Detailing – standard notes, details and modifications based on specific conditions	Assignment 8 - Planting Plan and Details Due Thursday March 24 th 8pm Reading: Hopper 348-363, 471-481
Thurs March 25	Site Lighting Systems: 1. Site lighting – code requirements, safety and the shaping of space thorough light. 2. A landscape designer’s guide to understanding landscape lighting systems, water conservation, calculations, code requirements and documentation. 3. Mid Term Check on final project Progress	Assignment 9 - Lighting fixture cuts Due Thursday March 30 th 8 pm Reading Hopper 338-347
March 31	Field Trip Location TBD	
April 7	Systems: Irrigation Systems – Materials and Systems Lecture 1. A landscape designer’s guide to understanding irrigation systems, water conservation, calculations, code requirements and documentation. 2. Guest Lecture –Nick Staabe Hunter Irrigation- Irrigation Equipment and systems	Reading: Hopper Pages 249- 253
April 14	Field Trip – Site Observation Location TBD	Final Project – Progress Print Due Wednesday April 28 th 10 PM Required in progress set:
April 21	Last Class Spec Workshop Lecture – Master spec section organization, standard section format and framework, typical areas of editing.	Assignment 10 – Specifications Due with Final Project.
April 28 th	Final Project Development Workshop	
Final Assignment Due May 5 th at 10 am	Final Projects Due on Blackboard	Post on Blackboard

Estimated Course Costs

Text Book Costs from \$47.20 and up on Amazon for rental or purchase.

Bibliography

Required Text Books

Hopper, Leonard Landscape Architectural Graphic Standards Student Edition, Wiley and Sons, 2007, Hoboken, NJ [Landscape Architectural Graphic Standards: Hopper, Leonard J.: 9780470067970: Amazon.com: Books](https://www.amazon.com/dp/9780470067970)

I recommend that you rent this book for the semester. It is available at a very affordable rental price from [Amazon](https://www.amazon.com). You will need it by January 27th.

Additional Sources:

Calkins, Meg Materials for Sustainable Sites : a Complete Guide to the Evaluation, Selection, and Use of Sustainable Construction Materials . Wiley; 2009.

Dines, Nicholas, Time Saver Standards Concise Site Construction Details Manual, McGraw Hill, NY NY, 1999

Hopper, Leonard Landscape Architectural Graphic Standards Student Edition, Wiley and Sons, 2007, Hoboken, NJ

Sauter, David, Landscape Construction, Thompson Delmar Learning, Clifton NJ, 2005

Thallon, Rob and Jones, Stan, Graphic Guide to Site Construction, The Tauton Press, Newtown, Conn. 2003

Walker, Theodore D., Site Design and Construction Detailing, Van Nostrand, NY, NY. 1992

Watson, Julia *Lo-TEK : Design by Radical Indigenism* . Taschen; 2020

Yglesias, Caren, The Innovative Use of Materials in Architecture and Landscape Architecture: History, Theory and Performance, McFarland, Jefferson, North Carolina 2014 – Available on line via USC Electronic Library

Zimmermann Astrid, *Constructing Landscape: Materials, Techniques, Structural Components*. 3rd, rev. and expand ed. Basel: Birkhäuser; 2015.

Required Software: AutoCad current version Download the free student version here

<https://www.autodesk.com/education/free-software/autocad>

Assignments

- 1. Materials Plan** – Each student will develop a materials plan labelling all materials for paving, walls, curbs, stairs, ramps, handrails, lighting, water features, site furnishings

and site drainage fixtures for a selected studio site project. The Site must be appropriate for a 1" = 8'-0" scale plan. It could be a portion of a larger site.

- a. All Sites must include the following elements:
 - i. Concrete paving
 - ii. Precast concrete unit pavers or natural stone paving
 - iii. Min one ADA accessible ramp with handrails
 - iv. Min one set of stairs with required handrails
 - v. One retaining wall
 - vi. One seat wall or other built in seating
 - vii. Area lighting
 - viii. Site drainage fixtures connected to storm drain system or other collection feature

Sites must be approved by the instructor.

2. Layout Plan

3. Site Section

4. Materials and Systems Details - 6 assignments

5. **Term Project – Site Construction Document Package for Studio Project Site** – Each student will assemble a complete construction document drawing set for a selected studio project site. The set will be developed over the entire semester culminating with the completion of the set as the final project. All intermediate assignments will be components of the final term project. The final term project will include the following:

- a. **Cover Sheet and General Notes Materials Plan**
- b. **Layout and Dimension Plan**
- c. **Overall Site Sections**
- d. **Grading and drainage Plan**
- e. **Planting Notes, Plan and details**
- f. **Lighting Plan and fixture cuts**
- g. **Construction Details**
- h. **Specification sections for site demolition, cast in place concrete, unit pavers or stone paving, planting, irrigation, site electrical, ornamental metal, site furnishings.**

Guest Lecturers

Evelyn Tickle USC Architecture

Luning Li - Relm Studio

Additional Guest sTBD

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 This is a failing course grade for graduate students
D+	67-69
D	63-66
D-	60-62
F	59 and below

The expectation for group assignments is that students participate equally. Students who do not do their fair share of the work will receive a lower grade.

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. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on [Research and Scholarship Misconduct](#).

Students and Disability Accommodations:

USC welcomes students with disabilities into all of the University’s educational programs. The Office of Student Accessibility Services (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Support Systems:

Counseling and Mental Health - (213) 740-9355 – 24/7 on call
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

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

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

Office for Equity, Equal Opportunity, and Title IX (EEO-TIX) - (213) 740-5086

eeotix.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.symplicity.com/care_report

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

The Office of Student Accessibility Services (OSAS) - (213) 740-0776

osas.usc.edu

OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

USC Campus Support and Intervention - (213) 821-4710

campussupport.usc.edu

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

Diversity, Equity and Inclusion - (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.

Office of the Ombuds - (213) 821-9556 (UPC) / (323-442-0382 (HSC)

ombuds.usc.edu

A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

Occupational Therapy Faculty Practice - (323) 442-3340 or otfp@med.usc.edu

chan.usc.edu/otfp

Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.