

LAA 3420

Landscape Construction I

UF Department of Landscape Architecture
Summer 2023

SYLLABUS

I. General Information

CLASS MEETINGS: 100% In-Person, Mondays, Wednesday Periods 2-6 (9:30 AM – 4:45 PM)
LOCATION: Architecture 320
CREDITS: 5 Credits

INSTRUCTOR: Daniel P. Manley, PLA, ASLA
ARC 431E
Tuesdays, Period 2 or by appointment
dpmanley@ufl.edu

COURSE DESCRIPTION

The first course in Landscape Construction is designed to integrate the theories and principles of landscape architectural design with the important technical skills necessary to document and construct the work. These skills include grading, drainage, stormwater management, and road/pathway geometry. These skills will be applied through hand drawings, study models, and CAD drawing production in the form of construction documents.

PREREQUISITE KNOWLEDGE AND SKILLS

Students are required to have completed LAA2376 and 2379: Design Communication 1 & 2. Students are expected to have a foundational knowledge of the design process, a basic understanding of AutoCAD, and the skills developed in the prerequisite courses to produce digital and hand-drawings.

REQUIRED READINGS AND WORKS

Strom, Nathan, and Woland; *Site Engineering for Landscape Architects*, Sixth Edition is the primary text for this course. All required readings and works can be found online, course reserves, or in the UF Library (see annotated schedule).

Materials and Supplies Fees: see schedule of courses.

In addition to drafting supplies required of all studio courses, you will need the following materials:

- 2 lbs of kinetic sand, approximately
- 11"x11" tray to contain sand
- Fab Lab Membership: The course will utilize UF's Fab Lab for portions of the course. You will be required to purchase a Fab Lab membership. In addition, you will be required to provide the necessary materials to use the Fab Lab (e.g., chipboard) as well as any material/setup costs required by the Fab Lab (e.g., 3D Printer Costs).

The following software is required:

- Civil3D (latest version)
- MS Office (Word, Excel and Powerpoint)
- Adobe Suite Products (Photoshop, Illustrator, and In-Design)
- Rhino
- Adobe Acrobat Reader or other PDF reading software

II. Student Learning Outcomes (SLOs)

At the end of this course, students will be expected to have achieved the course learning objectives (CLOs) under the program SLO headings as follows:

CONTENT
SLO 1 – Integrate concepts from the general body of knowledge of the profession of landscape architecture in design decision-making.
CLO 1 - Understand and integrate principles and practices of engineering, including grading drainage, water quality and management, and other landform processes to design landscapes that are accessible, safe, and ecologically sustainable. (Assessments: Project 1, Project 2, Exercises, Final Exam)
CLO 2 - Understand the impacts associated with landscape engineering and development (Assessments: Project 2, Exercises, Final Exam)
CLO 3 - Understand soil science and geology and their impact on the landscape. (Assessments: Project 2, Exercises, Final Exam)
SLO 2 – Apply core professional landscape architecture skills in design decision-making.
CLO 4 - Develop design proposals and plans that integrate engineering and construction techniques. (Assessments: Project 1, Project 2, Exercises)
CLO 5 - Apply mathematical calculations to inform and substantiate design and construction performance. (Assessments: Project 1, Project 2, Exercises, Final Exam)
CLO 6 - Apply a range of approaches to develop landscape compositions. (Assessments: Project 1, Exercises)
SLO 3 – Apply ethical understanding to design decision-making.
CLO 7 - Apply ethical and professional principles and considerations to their obligations to clients, communities, the public, and landscape environment. (Assessments: Project 2, Exercises, Final Exam)
CLO 8 - Explain the legal responsibilities, and the role of landscape architects in preserving and safeguarding human health, safety, and the public welfare through their professional practice. (Assessments: Project 1, Project 2, Exercises, Final Exam)

CRITICAL THINKING
SLO 4 – Combine and analyze information from multiple sources to support design decision-making.
CLO 9 - Critically analyze and evaluate ideas that are grounded in the evaluation of data and the natural, physical, and social sciences to make informed design decisions that address and balance aesthetic, environmental, and social issues and goals (Assessments: Project 1, Project 2, Exercises, Final Exam)
CLO 10 - Analyze issues to understand the interrelationship between ecosystems and climate and evaluate the effectiveness of design solutions to mitigate climate and ecosystem harm. (Assessments: Project 2, Exercises, Final Exam)
CLO 11 - Define and measure the impact of a design on its environmental goals based on measurable outcome. (Assessments: Project 2, Exercises, Final Exam)

COMMUNICATION
SLO 5 – Produce professional visual, oral, and written communications.
CLO 12 – Prepare technical drawings and construction documents. (Assessments: Project 1, Project 2, Exercises)
CLO 13 – Express ideas concretely through oral, visual, and written communication and thoughtfully provide, receive, and respond to feedback and critique as part of iterative design decision making. (Assessments: Project 1, Project 2)

III. Graded Work

DESCRIPTION OF GRADED WORK

Project 1- Land Art Overlook (35% of total grade)

Students will create an interpretive landform that acts as an overlook to Paynes Prairie at the site of the current La Chua Trail Overlook. In addition to conceptual designing the overlook, students will develop a final grading plan and a 3D model.

Project 2 - Stormwater (40% of total grade)

Making the connection between stormwater management and resource protection, students will develop a technical grading plan and perform stormwater management calculations for a park site. Students will use the Modified Rational Method and Manning’s Equation to size the stormwater system and pipes.

Exercises (10% of total grade)

Throughout the semester, students will apply knowledge through exercises. These exercises are intended to reinforce concepts learned in class. They will primarily be performed and submitted during studio hours; however, some exercises may require time outside of class.

Final Exam (15% of total grade)

Students will demonstrate content knowledge through a final exam.

GRADING SCALE

For information on how UF assigns grade points, visit: <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

A	93 – 100%		C	73 – 76%
A-	90 – 92%		C-	70 – 72%
B+	87 – 89%		D+	67 – 69%
B	83 – 86%		D	63 – 66%
B-	80 – 82%		D-	60 – 62%
C+	77 – 79%		E	<60

As per department policy, Landscape Architecture Majors must receive a C or better to move forward. Any grade lower than a C will require that the course be taken over again.

All student work may be retained and used by the Department of Landscape Architecture. Digital copies of student work for this course must be turned in at the completion of each assignment. Please follow the directions given by the instructor as to how they will be submitted (e.g., Canvas, CD, PDF, word file, etc.). If an assignment is required to be scanned, it must be scanned; photographs of assignments are not acceptable. If a multipage PDF is requested, do NOT submit each page as a separate PDF. It must be submitted as one file. Point deductions on the assignment may result from not following submittal directions or providing incorrect submittal or file formats.

Studio projects are expected to be submitted by the specified due date. If no prior arrangement is made with the instructor for a late submittal, the maximum points that the student can earn for the project will be reduced by 2% for every day it is late. Projects are out of 100 points. Therefore, if a 100-point project is five days late, the maximum points that the student can receive for the project is 90 points (i.e., 90% of the total grade). If the student receives the equivalent grade of an 85% on the project, the student would receive 76.5 points (85% of 90 points). Projects that are ten days late or more will be graded out of 80% of the total points of the assignment. Late projects will be accepted on or before the last day of class. A grade of zero will be given until the project has been turned in.

Timely submission of exercises is included as part of the activity rubric.

A due date and time will be provided for every assignment, and an assignment is considered a day late if it is submitted after the specified date and time. The deadline is a hard deadline; no exceptions will be made for scanning, computer related issues, uploading, et cetera. Assignments are considered an additional day late every 24 hours from the due date.

Assignment submissions may be updated and re-uploaded to the Canvas site as needed prior to a submittal deadline. Once the deadline has passed for an assignment and a submission has been made, additional submittals are not guaranteed to be accepted. If the updated, late submittal is accepted, the entire submittal will be considered late and points will be deducted based on the date of the late submission. In addition, it is the student's responsibility to ensure that a submission is complete; missing items will not be given credit.

IV. Annotated Weekly Schedule

Week	Topics, Homework, and Assignments
Week 1	<ul style="list-style-type: none"> • Topic: Contours, Slope, and Interpolation • Summary: This week we will define what a contour is and the basic rules for contours and contour maps. We will review and apply the slope formula, and we will learn the process for translating spot grades (elevations) to a contour/topography map. (CLO# 1, 5). • Required Readings/Works: <ul style="list-style-type: none"> ○ <i>Site Engineering for Landscape Architects</i> <ul style="list-style-type: none"> ▪ Chapter 1 “Site Engineering IS Design” ▪ Chapter 3 “Contours and Form” (pp. 33-38) ▪ Chapter 4 “Interpolation and Slope” (pp.63-71) ○ PBS Art Assignment Video: <i>The Case for Land Art</i> • Assignment: Land Art Overlook Assigned [see project description for interim submittals. Final Project Submittal Due 6.21 at 9:30 am.] (CLO# 1, 4, 5, 6, 8, 9, 12, 13) Exercises [see Canvas for exercise requirements and deadlines] (CLO# 1, 5)
Week 2	<ul style="list-style-type: none"> • Topic: Grading Elements: Swales and Berms/Terraces and Planes • Summary: This week we will introduce typical grading elements that landscape architects regularly implement on a site. Students will learn the techniques for creating these land formations. We will also visit the La Chua Trail site in Gainesville. (CLO# 1, 5) • Required Readings/Works: <ul style="list-style-type: none"> ○ <i>Site Engineering for Landscape Architects</i> <ul style="list-style-type: none"> ▪ Chapter 3 “Contours and Form” (pp. 38-62) ▪ Chapter 5 “Grading of Simple Design Elements” • Assignment: Exercises [see Canvas for exercise requirements and deadlines] (CLO# 1, 5)
Week 3 (No Class 5/29 – Memorial Day)	<ul style="list-style-type: none"> • Topic: Grading Elements: Vertical Transitions • Summary: We will learn the techniques for grading vertical transition elements like walls and stairs (CLO# 1, 5). • Required Readings/Works: No Readings • Assignment: Exercises [see Canvas for exercise requirements and deadlines](CLO# 1, 5)
Week 4	<ul style="list-style-type: none"> • Topic: Site Grading Process • Summary: Students will learn the process for grading a developed site. (CLO# 1, 2, 4, 5, 6, 9, 12) • Required Readings/Works: <ul style="list-style-type: none"> ○ <i>Site Engineering for Landscape Architects</i> - Chapter 6 “Grading Process” • Assignment: Exercises [see Canvas for exercise requirements and deadlines] (CLO# 1, 2, 4, 5, 6, 9, 12)

Week	Topics, Homework, and Assignments
Week 5	<ul style="list-style-type: none"> • Topic: Introduction to Fluid Mechanics, Hydrology and Stormwater • Summary: Students will be introduced to basic concepts of fluid mechanics and hydrology. From there, we will build on that knowledge and introduce basic concepts of stormwater. (CLO# 1, 2, 3, 4, 5, 7, 8, 9, 12) • Required Readings/Works: <ul style="list-style-type: none"> ○ <i>Site Engineering for Landscape Architects</i> <ul style="list-style-type: none"> ▪ Chapter 9 – “Stormwater Management” (pp. 147-153) ▪ Chapter 10 – Stormwater Management System Components (pp. 157-160) ○ SJRWMD Permit Information Manual – Vol 2 (pp. to be determined) (https://www.sjrwmd.com/static/permitting/PIM-20180601.pdf) • Assignment: Exercises [see Canvas for exercise requirements and deadlines] (CLO# 1, 2, 3, 4, 5, 7, 8, 9, 10 12)
Week 6 (No Class 6.19 - Juneteenth)	<ul style="list-style-type: none"> • Topic: Stormwater: Rational Method • Summary: The Rational Method is a basic stormwater model that can be used to determine peak stormwater flows. Students will be introduced to and apply this basic model to understand the stormwater impacts of site development. (CLO# 1, 2, 3, 4, 5, 8, 9, 10, 11) • Required Readings/Works: <ul style="list-style-type: none"> ○ <i>Site Engineering for Landscape Architects</i> <ul style="list-style-type: none"> ▪ Chapter 12 – “Determining Rates and Volumes of Storm Runoff: The Rational and Modified Rational Methods” (pp. 207-218) ○ <i>Water’s Journey: Hidden Rivers of Florida</i> (Video – 60 min) • Assignment: Land Art Project due 6.21 at 9:30 am. Begin Stormwater Project [see project description for interim submittals. Final Project Submittal Due 8.7 at 9:30 am.] (1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13) Exercises [see Canvas for exercise requirements and deadlines] (CLO# 1, 2, 3, 4, 5, 8, 9, 10, 11)
Week 7	Summer Break (No Class)
Week 8	<ul style="list-style-type: none"> • Topic: Stormwater: Modified Rational Method • Summary: Building on the knowledge of the Rational Method, students will be introduced to the Modified Rational Method which incorporates pre and post hydrographs to appropriately size retention and detention basins. (CLO# 1, 2, 3, 4, 5, 8, 9, 10, 11) • Required Readings/Works: <ul style="list-style-type: none"> ○ <i>Site Engineering for Landscape Architects</i> <ul style="list-style-type: none"> ▪ Chapter 12 – “Determining Rates and Volumes of Storm Runoff: The Rational and Modified Rational Methods” (pp. 218-226) • Assignment: Exercises [see Canvas for exercise requirements and deadlines] (CLO# 1, 2, 3, 4, 5, 8, 9, 10, 11)

Week	Topics, Homework, and Assignments
Week 9	<ul style="list-style-type: none"> • Topic: Stormwater: Manning’s Equation and Pipe Sizing • Summary: Students will learn and apply Manning’s Equation to determine velocity and flowrates through conveyances. Specifically, students will learn the process of sizing pipes for stormwater conveyance. (CLO# 1, 2, 5, 8, 9, 10, 11) • Required Readings/Works: No Readings • Assignment: Exercises [see Canvas for exercise requirements and deadlines] (CLO # 1, 2, 5, 8, 9, 10, 11)
Week 10	<ul style="list-style-type: none"> • Topic: Earthwork and Soils • Summary: Site development, and the resulting site grading, require significant amount of earthwork during construction. This week, we will review concepts related to earthwork with an introduction to soils. (CLO# 1, 2, 3) • Required Readings/Works: <ul style="list-style-type: none"> ○ <i>Site Engineering for Landscape Architects</i> <ul style="list-style-type: none"> ▪ Chapter 8 – “Earthwork” (pp. 129-141) • Assignment: Exercises [see Canvas for exercise requirements and deadlines] (CLO #1, 2, 3)
Week 11 (No Class – 7.26 ASLA Florida Conference)	<ul style="list-style-type: none"> • Topic: Earthwork Quantification • Summary: Building on our understanding earthwork, we will learn the process for performing cut and fill calculations necessary to quantify the amount of earthwork in construction. (CLO # 1, 2, 3, 5) • Required Readings/Works: No Readings • Assignment: Exercises [see Canvas for exercise requirements and deadlines] (CLO # 1, 2, 3, 5)
Week 12	<ul style="list-style-type: none"> • Topic: Horizontal and Vertical Roadway Alignment • Summary: This week, students will be introduced to concepts in horizontal and vertical roadway alignment. We will review concepts of stationing as a site layout method for construction. Students will be introduced to key terminology common in geometric design. (CLO# 1, 2, 4, 7, 8, 9) • Required Readings/Works: <ul style="list-style-type: none"> ○ <i>Site Engineering for Landscape Architects</i> <ul style="list-style-type: none"> ▪ Chapter 16 – “Horizontal Road Alignment” ▪ Chapter 17 – “Vertical Road Alignment” • Assignment: Exercises [see Canvas for exercise requirements and deadlines] (CLO# 1, 2, 4, 7, 8, 9)
Week 13	<ul style="list-style-type: none"> • Topic: Course wrap-up and review and Final Exam • Summary: This week we will conclude the studio project as well as prepare for and take the final exam. (CLO# 1, 2 3, 5, 7, 8, 9, 10, 11) • Required Readings/Works: No Readings • Assignment: Stormwater Project due 8.7 at 9:30 am. Final Exam [to be administered on Wednesday (8/9) starting at 9:30am] (CLO# 1, 2 3, 5, 7, 8, 9, 10, 11)

VI. Required Policies

ATTENDANCE POLICY

Attendance is mandatory. Students are expected to arrive on time. Acceptable reasons for excused absences are as follows:

- o Illness
- o Serious family emergency
- o Special curricular requirements (e.g., judging trips, field trips, professional conferences)
- o Military obligation
- o Severe weather conditions
- o Religious holidays
- o Participation in official university activities such as music performances, athletic competition or debate.
- o Court-imposed legal obligations (e.g., jury duty or subpoena)

If necessary, students shall be permitted a reasonable amount of time to make up material or activities covered in their excused absence; however, absences do not affect project deadline dates unless prior arrangements have been made.

Studio work time and desk critiques are essential to the learning experience; therefore, attendance is expected for the entire class time. During the studio (critique) portion of the course, it is expected that all students will be in attendance for the entire class and working on LAA3420 assignments. Arriving late to class, leaving during class for extended durations, or leaving early from class may be considered being absent from class.

The instructor will not provide the student notifications regarding absences and tardiness. You may email the instructor should you have any questions regarding your attendance. Please schedule an office meeting for any discussions regarding attendance, tardiness, and late assignments. Do not discuss these issues with the instructor during studio time.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

STUDENTS REQUIRING ACCOMMODATION

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

UF EVALUATIONS PROCESS

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or

via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

UNIVERSITY HONESTY POLICY

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

COUNSELING AND WELLNESS CENTER

Contact information for the Counseling and Wellness Center: <http://www.counseling.ufl.edu/> , 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

COURSE MATERIALS AND IN-CLASS RECORDINGS

The digital course materials provided on Canvas (e.g., lectures, assignments, quizzes, et cetera) are provided for personal study and are not intended for distribution by electronic or other means. Further distribution or posting on other websites is not permitted.

Our class sessions may be audio visually recorded. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who participate orally are agreeing to have their voices recorded.

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section.

Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.