



LA 883 ENVIRONMENTAL DESIGN SEMINAR Spring 2026 (3 Credits)

M 9:10AM–12:00PM
DSL Classroom, 2nd floor of the Main Library

Instructor

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Course Description

Landscape performance is a crucial component of contemporary landscape architecture research, education, and professional practice, offering an evidence-based approach to evaluating how built landscapes achieve their environmental, social, and economic objectives. This course introduces students to landscape performance concepts, evaluation frameworks, and applied assessment methods used to quantify the outcomes of sustainable landscape projects.

Through a combination of lectures, precedent studies, guest speakers, and hands-on workshops, students will examine landscape performance in conjunction with design rating systems and explore ecosystem service modeling and human-centered evaluation methods. Students will gain practical experience applying performance assessment tools and simulation models to assess environmental, social, and economic outcomes. The course emphasizes learning from built projects through LAF Case Study Investigation (CSI) precedents and culminates in a real-world case study.

Students are expected to engage regularly with course materials, participate actively in class discussions and activities, and provide thoughtful responses that demonstrate a meaningful understanding of the course content.

Course Objectives

The primary goal of this course is to introduce students to landscape performance as a critical framework for evaluating the outcomes of design interventions. The course emphasizes applied performance evaluation methods and tools to assess environmental, social, and economic benefits. Upon successful completion of this course, students will be able to:



- Explain the role of landscape performance evaluation in demonstrating the environmental, social, and economic outcomes of sustainable landscape projects
- Critically assess design rating systems and performance approaches in relation to evidence-based landscape evaluation.
- Apply landscape performance assessment tools and simulation models to quantify performance outcomes.
- Analyze and synthesize findings from precedent landscape performance studies
- Design appropriate evaluation methods by translating existing project goals into performance questions, selecting defensible metrics, and identifying suitable tools, data sources, and assumptions.
- Communicate defensible landscape performance assessments through clear visual and written representations.
- Develop individual expertise in landscape performance that supports professional effectiveness and advocacy for sustainable planning and design strategies.

Topics

Environmental design
Landscape performance
Sensitivity analysis
SITES rating system
LEED rating system
Ecosystem service modeling
Flood mitigation
Urban cooling
Carbon storage and sequestration
Tourism and recreation
Human subject research

Books and References

- Landscape Architecture Foundation. Landscape Performance Series.
<https://www.landscapperformance.org/case-study-briefs>
- Landscape Architecture Foundation. Recorded Webinars.
<https://www.lafoundation.org/resources/category/recorded-webinars?page=0>
- Landscape Architecture Foundation. Evaluating Landscape Performance: A Guidebook for Metrics and Methods Selection. 2018.
<https://www.landscapperformance.org/sites/default/files/LAF-Evaluating-Performance-Guidebook.pdf>
- ASLA. Landscape Performance & Metrics Primer. 2018.
<https://www.scribd.com/document/813490517/Landscape-Performance-Metrics-Primer-ASLA-2018>



- Newman, G., Zhu, R., Li, D., & Barnes, M. (Eds.). (2024). Contemporary Landscape Performance Methods and Techniques: Lessons from the Houston Arboretum and Nature Center (1st ed.). Routledge.
<https://doi-org.proxy2.cl.msu.edu/10.4324/9781003495482>
- Landscape Architecture Foundation. Landscape Performance Series Reading & Resource List.
<https://www.landscapperformance.org/sites/default/files/Resources-for-Educators-Combined-Readings.pdf>

Note:

Weekly readings will be posted on D2L.

Course Evaluation

Assignments – 20%

Precedent Study -10%

Toolkit Review Presentation – 25%

Final Project – 35%

Class attendance and discussion – 10%

Grading

90+	4.0
86-89.9	3.5
80-85.9	3.0
75-79.9	2.5
70-74.9	2.0
65-69.9	1.5
60-64.9	1.0
Below 60	0.0

Course Requirement

The format for the course will be reading and assignment intensive and discussion based. Reading will be assigned in class and regularly uploaded on the University's Desire2Learn (D2L) learning management system: <https://D2L.msu.edu>.

1. **Assignments:** A1 will require students to finish the CITI training for Human Subject Study required by IRB. A2 will require students to select individual topics within their area of interest and quantify the impacts of design scenarios using selected LAF toolkits. A3 focuses on the prediction of local ecosystem services using GIS and InVEST models.
2. **Precedent Study:** Each student will complete a precedent study based on existing Landscape Architecture Foundation (LAF) Case Study Investigations (CSI) or comparable landscape performance projects. Students will select one topic from the scheduled precedent study themes. For the selected topic, each student shall give a 15-minute presentation in class that identifies and analyzes three relevant case studies. For each case study, students are expected to document:



- The project name and context
 - The performance goal(s) addressed
 - The performance metric(s) used
 - The method(s) or tool(s) applied
 - Key limitation or consideration related to the performance evaluation
3. **Toolkit Review Presentation:** Each student will be asked to present a PowerPoint tutorial that demonstrates a detailed, step-by-step process for conducting analytic simulations or calculations of landscape benefits using a chosen Landscape Architecture Foundation (LAF) toolkit.
4. **Final Project:** The Final Project is a group-based landscape performance assessment of Glass City Metropark, Toledo, OH. Students will be assigned to one of three focus areas:
- Social Performance
 - Environmental Performance
 - Economic Performance
- Groups will interpret existing project goals, identify appropriate performance questions, select/develop metrics and methods, analyze secondary data, and produce a final report and presentation consistent with LAF CSI-style reporting.
5. **Class Attendance and Discussion:** Students will be expected to attend class regularly and contribute to class discussions. Students will be expected to bring to discussions knowledge and expertise gained throughout their graduate program or work experience.

Software Utilized:

- ArcGIS Pro:
https://techstore.msu.edu/shop_product_detail.asp?catalog_group_id=Nw&catalog_group_name=U29mdHdhcmU&catalog_id=45&catalog_name=U3R1ZGVudCBTb2Z0d2FyZQ&pf_id=980&product_name=QXJjR0lTIDewLjYsIDegWWVhciBTdHVkZW50IEpY2Vuc2U&type=1&target=shop_product_list.asp
 - Instructions for installation:
<https://libguides.lib.msu.edu/c.php?g=1233490&p=9027010>
 - GIS Librarian: Amanda Tickner, atickner@msu.edu
- InVEST: <https://naturalcapitalproject.stanford.edu/software/invest>



Class Schedule (subject to change)

Date	Part 1 – Lecture	Precedent Studies (3 CSI Methods)	Part 2 – Workshop / In-Class Activity	Assignments Issued	Assignments Due
Jan. 12	Course Introduction Landscape Performance Assessment		CSI Report Deconstruction	Presentation 1: LAF Toolkit Review Presentation	
Jan. 19	MLK Day – No Class				
Jan. 26	SITES and LEED Rating Systems, Sensitivity Analysis		Workshop: Mapping SITES / LEED Credits to CSI Metrics		
Feb. 2	Human Subject Research I		Student LAF Toolkit Presentations	A1 Issued: IRB Training	P1 Due Before Class
Feb. 9	Human Subject Research II	Public Life, Engagement, Social Value	Workshop: Survey and Interview Design	A2 Issued: Sensitivity Analysis	
Feb. 16	Guest Lecture (Mr. Mel Vargas): Ecosystem Restoration Programs	Habitat and Biodiversity	InVEST Demo 1	A3 Issued: InVEST Project	A1 Due
Feb. 23	Guest Lecture (Mr. Scott Whitcomb): Carbon Storage, Michigan Healthy Climate Plan	Carbon Sequestration, Waste Reduction, Cost Saving	InVEST Demo 2		
Mar. 2	Spring Break				
Mar. 9	Guest Lecture (Dr. Dingding Ren): Urban Heat Island	Heat Mitigation, Urban Cooling, Thermal Comfort	InVEST Demo 3		A2 Due
Mar. 16	Special Topic: Sustainable Stormwater Management Assessment	Stormwater Performance, Flood Protection	Toledo Park Kickoff with SmithGroup: Project Goals and Available Data (Start at 9:10, switch time with lecture)	Presentation 2: Final Project	
Mar. 23	Guest Lecture (Dr. Zhihan Tao): Economic Performance	Economic Development, Property Value, Tax Revenue	Work Session: Metrics and Methods Development		A3 Due
Mar. 30	Special Topic: Health and Well-Being	Health and Well- Being Outcomes, Safety	Peer Review: Metrics and Methods Development		
Apr. 6	Special Topic: Waste Reduction and Cost Savings		Work Session: Tool Selection and Data Collection	Site Visit Apr 10	
Apr. 13	Project Review and Work Session				
Apr. 20	Project Review and Work Session				
Apr. 27	Final Presentations				P2 Due Before Class



Policy and Statements

Make-Up or Extension Policy

Under extenuating circumstances and with proper written documentation, faculty reserves the right to approve a make-up or extension. Please make every effort to notify the faculty prior to the due date. Only with approval by faculty may a student submit late work with no penalty. The following are considered extenuating circumstances:

- Illness of student (appropriate documentation = physicians report)
- Death in the family (appropriate documentation = obituary notice)
- Class field trip or MSU sponsored event (appropriate documentation = memo from instructing faculty or administrator)

Technical Assistance

Faculty will be available during office hours and via email. Faculty will make every effort to respond to emails Monday-Friday within 24 hours.

MSU Distance Learning Services Resources

If you need technical assistance at any time during the course or to report a problem, you can:

- Visit the Distance Learning Services Support Site <https://www.lib.msu.edu/dls>
 - Visit the Desire2Learn Help Site <http://help.d2l.msu.edu>
- Or call Distance Learning Services: (800) 500-1554 or (517) 355-2345

Disruptive Behavior

Article 2.III.B.4 of the [Academic Freedom Report \(AFR\)](#) for students at Michigan State University states: "The student's behavior in the classroom shall be conducive to the teaching and learning process for all concerned." Article 2.III.B.10 of the [AFR](#) states that "The student has a right to scholarly relationships with faculty based on mutual trust and civility." [General Student Regulation 5.02](#) states: "No student shall . . . interfere with the functions and services of the University (for example, but not limited to, classes . . .) such that the function or service is obstructed or disrupted. Students whose conduct adversely affects the learning environment in this classroom may be subject to disciplinary action through the Student Judicial Affairs office.

Understand When You May Drop This Course

It is the student's responsibility to understand when they need to consider un-enrolling from a course. Refer to the Michigan State University Office of the Registrar for important dates and deadlines.

Diversity Equity and Inclusiveness

Diversity, Equity and Inclusion are important, interdependent components of everyday life in the College of Agriculture and Natural Resources (CANR) and are critical to our pursuit of academic excellence. Our aim is to foster a culture where every member of CANR feels valued, supported and inspired to achieve individual and common goals with an uncommon will. This includes providing opportunity and access for all people across differences of race, age, color, ethnicity, gender, sexual orientation, gender identity, gender expression, religion,



national origin, migratory status, disability / abilities, political affiliation, veteran status and socioeconomic background. (See the full CANR statement: <https://www.canr.msu.edu/news/canr-statement-on-diversity-equity-and-inclusion>)

Inform Your Instructor of Any Accommodations Needed

From the Resource Center for Persons with Disabilities (RCPD): Michigan State University is committed to providing equal opportunity for participation in all programs, services and activities. Requests for accommodations by persons with disabilities may be made by contacting the Resource Center for Persons with Disabilities at 517-884-RCPD or on the web at rcpd.msu.edu. Once your eligibility for an accommodation has been determined, you will be issued a Verified Individual Services Accommodation ("VISA") form. Please present this form to the instructor at the start of the term and/or two weeks prior to the accommodation date (test, project, etc.). Requests received after this date may not be honored.

Commit to Integrity - Academic Honesty

As Spartans, we remain committed to honesty and integrity in our work – inside, and outside of the classroom, and permit no tolerance for academic dishonesty. The Associated Students of Michigan State University (ASMSU), launched the [Spartan Code of Honor academic pledge](#), focused on valuing academic integrity and honest work ethics at MSU. The pledge reads as follows:

*"As a Spartan, I will strive to uphold values of the **highest ethical standard**. I will practice honesty in my work, foster honesty in my peers, and take pride in knowing that **honor is worth more than grades**. I will carry these values beyond my time as a student at Michigan State University, continuing the endeavor to build personal integrity in all that I do."*

Article 2.3.3 of the [Academic Freedom Report](#) states that "The student shares with the faculty the responsibility for maintaining the integrity of scholarship, grades, and professional standards." In addition, the School of Planning, Design and Construction adheres to the policies on academic honesty as specified in General Student Regulations 1.0, Protection of Scholarship and Grades; the all-University Policy on Integrity of Scholarship and Grades; and Ordinance 17.00, Examinations. (See [Spartan Life: Student Handbook and Resource Guide](#) and/or the MSU Web site: www.msu.edu.)

Therefore, unless authorized by your instructor, you are expected to complete all course assignments, including homework, studio work, quizzes, tests and exams, without assistance from any source. You are expected to develop original work for this course; therefore, you may not submit any content that is not your original work or any course work you completed for another course to satisfy the requirements for this course. Also, you are not authorized to use the www.allmsu.com website to complete any course work in this course. Students who violate MSU academic integrity rules may receive a penalty grade, including a failing grade on the assignment or in the course. Contact your instructor if you are unsure about the appropriateness of your course work. (See also the [Academic Integrity](#) webpage.)

Religious Holidays, Academic Events & Athletics

If observing a religious holiday or representing MSU in a university sponsored academic or athletic event will affect a student's performance in this course, he/she should make



arrangements to submit assignments in advance as much as possible and contact faculty with any concerns.