PLSC 493/593 Green Infrastructure Theory and Application
Spring 2021

TR: 1:10-2:25
South Green House (SGH) - Room 124

Course Credit Hours: 3

Faculty Contact Information
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Office Hours: TR Afternoons upon request

Course Description:

An overview of green infrastructure history, contemporary theory and application through study of design precedents. Detailed investigation into construction of sustainable landscape assemblies and management practices as a context for a focused design/ prototype/ build project.

Course Information:

PLSC 493/593 advances the centrality of landscape to the organization, function, and equity of urban and post-industrial/post-production landscapes and calls for radically different approaches to infrastructure and landscape construction. Embracing natural systems as models of functionality, form, and process; design and construction explorations employ, softness, porosity, and change over time as means of achieving high performance sustainable, equitable, and resilient landscapes.

The course emphasizes experiential learning through research, design and prototype development, collaborative problem solving, and supplemental service projects.

Sustainable landscape construction requires more than a vocational knowledge of technical specifications. Thoughtful consideration of environmental history, community health, social equity and justice, and ecosystem resilience will enhance our understanding of construction, the built environment, and its impact on landscape performance, natural resource management, and the experiential qualities of design.

Course Structure Includes:
- Ecological systems, bioremediation, ecosystem services and the consequence of green infrastructure
- Design of vegetative systems and specification of plant material

- Construction detail visualization, drawing, and exploration in relation to green infrastructural systems and their applications such as:
    - Topographic Systems
    - Vegetative Systems
    - Hardscape Systems
    - Stormwater Management Systems
    - Constructed and Floating Treatment Wetlands
    - Green Roofs and Walls
    - Pollution Mitigation
    - Biodiversity Enhancement
- Contemporary theory and context
- Application strategies
- Ethics, Social and Environmental Justice, Professional Responsibility
- Creation, implementation, interpretation, and analysis

Student Learning Outcomes/Objectives:

- To develop an understanding of contemporary theory and application related to green infrastructure and ecologically driven design.
- To familiarize with the breadth of green infrastructural materials and methods strategically employed in landscape construction and their associative properties that define how they are used and applied.
- To critically evaluate current building methods utilized within landscape systems.
- To define and recognize sustainable landscape construction best practices.
- To learn professional practices including the sharing of ideas, working alone and in teams, and time management.
- To recognize and identify opportunities for modification and improvement in construction implementation in the built environment.
- To build upon knowledge acquired from previous coursework and experience.
- To prepare students for the rigors of subsequent design courses.
- To advance dialogs related to professional ethics, environmental and social justice, and the responsibilities of contemporary built landscapes

Graduate Students taking the PLSC 593:
In accordance with university policy, graduate students taking PLSC 593 are required to undertake additional assignments, additional readings, faculty-led graduate student discussions, activities, individual and collaborative research and where constructive, additional assessments. The additional rigor is designed to enhance the graduate learning experience and advance the graduate student's scholarship.
https://catalog.utk.edu/content.php?catoid=17&navoid=1763&hl=assistantship&returnto=search

Course Communications:
Interactions between the students and instructor, including submitting assignments, sharing course readings, and media content, will be facilitated through CANVAS. For technical issues, contact the OIT HelpDesk via phone (865) 974-9900 or online at http://help.utk.edu/.

How to Be Successful in This Course:

Student's Responsibility

- Be prepared for all classes
- Be respectful to the professor
- Be respectful to classmates
- Actively contribute to the learning activities in class
- Abide by the UT Honor Code

Instructor's Responsibility

- Be prepared for all classes
- Evaluate all fairly and equally
- Be respectful of all students
- Create and facilitate meaningful learning activities
- Behave according to University codes of conduct

Texts/Resources/Materials:

- Scale Bars (Engineering and Architecture)
- 12" roll trace paper
- Pens, pencils, paper for notes
- Dependable access to digital technology

Required:

PHYTO Principles and Resources for Site Remediation and Landscape Design, by Kennen and Kirkwood ISBN: 978-0-415-81415-7

Sustainable SITES Initiative *SITES v2 Rating System and Scorecard* available free: https://www.usgbc.org/resources/sites-rating-system-and-scorecard

Highly Recommended:

Principles of Ecological Landscape Design, by Travis Beck ISBN: 978-1597267021

Living Systems Innovative Materials and Technologies for Landscape Architecture, by Margolis and Robinson ISBN: 9783764377007

Recommended:

Sustainable Landscape Construction: A Guide to Green Building Outdoors, by Sorvig and Thompson ISBN: 9781610918107

Landscape Architecture Graphic Standards (Student Edition), by Leonard J. Hopper, ISBN-13: 978-0470067970

Construction for Landscape Architecture, by Holden and Liversedge ISBN: 9781856697088

https://libguides.utk.edu/sustainablelandscapearchitecture

Readings from selected texts will be made available to students enrolled in the course. Graduate students taking 593 will have additional reading and writing assignments beyond those required for undergraduates.

Major Assignments and Exams
Student Presentations – A comprehensive report on the characteristics, life cycle cost, benefits, limitations, and application of contemporary green infrastructural construction materials and strategies.

Landscape Performance Case Study Project – An interactive case study report of a sustainable local landscape documenting its performance benefits and operational characteristics.

Midterm – A comprehensive examination covering all course units to date.

Semester Project – Design and implementation of green infrastructure.

Formal Presentation of Semester Project – A comprehensive oral and visual presentation, in addition to, a written report.

Course Requirements, Assessments and Evaluations:
Grades will be assigned according to a point accumulation format (see assignment grading rubrics for additional information). The grade scale will be based on the number of points accumulated as a percentage of the total possible. The following breakdown and grade scale will be used as a guide; however, circumstances may dictate slight revisions.

Point Breakdown:

Midterm	100 pts
Student Presentations	100 pts
Graduate Students Literature Synopsis	100 pts
Landscape Performance Case Study Project	100 pts
Graduate Students 2nd Landscape Performance Case Study Project	100 pts
Research/Design/Build Project	200 pts
Final Formal Presentation of Project	200 pts
Attendance, Participation and Respect	100 pts

Undergraduate TOTAL 800 pts
Graduate TOTAL 1000 pts

PLEASE NOTE: I do not accept late work. Projects turned in after the deadline will not be graded and will receive a 0 as a score.

All assignments will be submitted as PDFs with the following naming:
PLSC####_Project/Assignment#_MMDDYYYY_FirstNameLastName.pdf
e.g. PLSC493_Project01_08292021_HideoSasaki.pdf
Students that do not use this naming convention will have 5 points deducted from their submission grade

Final Grade Scale:

94% or greater	……A
90 – 93%	……A-
87 – 89%	……B+
84 – 86%	…… B
80 – 83%	……B-
77 – 79%	……C+
74 – 76%	……C
70 – 73%	……C-
67 – 69%	……D+
64 – 66%	……D
60 – 63%	……D-
60% or lower	……F

*'***A' - Outstanding:** This student displays a mastery of the subject matter. All required work is complete and demonstrates a superior understanding of the issues and skills involved in the project and applies them appropriately. The individual consistently demonstrates initiative and inquiry and goes above and beyond instructor expectations. Assignment materials are superior in content and craftsmanship and communicates information clearly. The individual consistently participates and is actively engaged in the class.

'B' - Good*:* The quality of the student's work and participation is above average, but lacks the thorough rigor of excellent work.

'C' - Average: The quality of the study's work and participation work does not exceed expectations. The work is satisfactory, but does not display a mastery of the subject matter.

'D' - Poor: The basic expectations of each student have not been met. The work has obvious shortcomings. There is little effort put forth in the class, and no mastery of subject matter. Course may not be used to satisfy degree requirements.

'F' - Failing: Almost no effort has been put forth by the student demonstrated by both process and product. Course may not be used to satisfy degree requirements.

Attendance Policy:

Punctuality, attendance, active participation, and overall effort during the course is basic professional behavior, expected of all students, and is reflected in your final grade. All students begin the semester with an "A," 100/100 points, for attendance, participation and respect. Students will lose 10 points from this score for every absence, which will be recorded through participation in-class exercises and/or snap quizzes, or for each gross tardy: more than 15 minutes late. Students who are absent will be accountable for the day's lecture content. They may contact the instructor or their classmates in order to acquire the necessary information.

Students who are observed to be disengaged from class, are not participating or otherwise disrespectful to the professor or their classmates will also have points deducted from their attendance grades.

Course Feedback:
Students are encouraged to provide the instructor with feedback over the course of the term using CANVAS, email, and other interactive means such as real-time, in-class polling.

Academic Integrity:
"An essential feature of the University of Tennessee, Knoxville is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the university, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity."

University Civility Statement:
Civility is genuine respect and regard for others: politeness, consideration, tact, good manners, graciousness, cordiality, affability, amiability and courteousness. Civility enhances academic freedom and integrity, and is a prerequisite to the free exchange of ideas and knowledge in the learning community. Our community consists of students, faculty, staff, alumni, and campus visitors. Community members affect each other's well-being and have a shared interest in creating and sustaining an environment where all community members and their points of view are valued and respected. Affirming the value of each member of the university community, the campus asks that all its members adhere to the principles of civility and community adopted by the campus: http://civility.utk.edu/.

Disability Services:
"Any student who feels s/he may need an accommodation based on the impact of a disability should contact Student Disability Services in Dunford Hall, at 865-974-6087, or by video relay at, 865-622-6566, to coordinate reasonable academic accommodations.

Your Role in Improving Teaching and Learning Through Course Assessment:
At UT, it is our collective responsibility to improve the state of teaching and learning. During the semester, you may be requested to assess aspects of this course either during class or at the completion of the class. You are encouraged to respond to these various forms of assessment as a means of continuing to improve the quality of the UT learning experience.

Key Campus Resources for Students:
- Center for Career Development (Career counseling and resources; HIRE-A-VOL job search system)
- Course Catalogs (Listing of academic programs, courses, and policies)
- Hilltopics (Campus and academic policies, procedures and standards of conduct)
- OIT HelpDesk (865) 974-9900
- Schedule of Classes/Timetable
- Student Health Center (Visit the site for a list of services)
- Student Success Center (Academic support resources)
- Undergraduate Academic Advising (Advising resources, course requirements, and major guides)
- University Libraries (Access to library resources, databases, course reserves, and services)

This syllabus is subject to change. The most current course syllabus will be available within the Course Canvas site.

Unusual circumstances may result in a change of teaching modality.

SOCIAL DISTANCING & COVID-19 PROCEDURES

Students are required to wear face masks at all times and maintain social distancing (6 feet between individuals in traditional classrooms, or, in instructional laboratories and similar settings, only a few minutes in closer proximity when absolutely necessary to achieve learning objectives). Students who are feeling ill or experiencing symptoms such as sneezing, coughing, or a higher than normal temperature will be excused from class and should stay at home.

Instructors have the right to ask those who are not complying with these requirements to leave class in the interest of everyone's health and safety. In the event that a student refuses to comply with these requirements, the instructor has the right to cancel class.

Additionally, following other simple practices will promote good health in and out of the classroom, such as frequent and thorough hand washing, wiping down desks and seats with disinfectant wipes whenever possible, not sharing personal items such as pens and cell phones, and avoiding crowded hallways and other enclosed spaces.

The Volunteer Creed reminds us that we bear the torch in order to give light to others. As Volunteers, we commit to caring for one another and for the members of the communities in which we live, work, and learn. This semester, the University asks that we all demonstrate the Volunteer spirit by following these and other health guidelines and requirements.

The instructor reserves the right to revise, alter or amend this syllabus as necessary.

PLSC 493/593 Class Schedule

This is a proposed schedule. The instructor may make changes to this calendar to enhance student progress and learning (e.g. assign additional readings). In such event, changes will be announced and/or new calendars distributed.

Date		Item
Tues, January 26		Lecture 1: Infrastructure
		Assignment: Reading 1 L.A. River
Thurs, January 28		**Due**: Reading 1
		Lecture 2: Materials
		Assignment: Student Presentations (Oral + Visual)
		Assignment: Reading 2 SITES v2 I, II, Section 5
Mon, February 1		**Due**: Student Presentation Topic (due at noon)
Tues, February 2		**Due**: Reading 2
		Lecture 3: Landscape Performance
		Assignment: Landscape Performance Case Study (Oral + Visual Presentation; 1 case study per UG, 2 per Grad)
		Assignment (Grads only): Literature Synopsis
		Assignment: Reading 3 SITES v2 Sections 9 + 10, Excerpt from Evaluating Landscape Performance: A Guidebook for Metrics and Methods Selection
Thurs, February 4		**Due**: Student Presentations (Visual presentation due at noon)
		Class: Student Presentations (Qty. 4)
Tues, February 9		**Due**: Reading 3
		Student Presentations (Qty. 4)
Thurs, February 11		Lecture 4: LID
		Assignment: Reading 4 SITES v2 Section 3 Water, PHYTO Ch. 1
Tues, February 16		**Due**: Reading 4
		Lecture 5: PHYTO
Thurs, February 18		**Due**: Case Study Visuals (due at noon, 1 per student UG + Grads)
		Lecture 6: Microclimate & Ecotypes
		Student Case Study Presentations (1 + as time allows)
		Assignment: Reading 5 Principles of Eco Landscape - Ch1
Tues, February 23		**Due**: Reading 5
		Student Case Study Presentations (Qty. 4)
Thurs, February 25		**Due** (Grads only): Case Study Visuals (due at noon, Grad's 2nd case study)
		Student Case Study Presentations (Qty. 4)
Tues, March 2		Midterm Review
		Student Case Study Presentations (2 as time allows)
Thurs, March 4		**Midterm**
Tues, March 9	Semester Project	Assignment: Semester Project (w/periodic check-ins and due dates throughout March and April)
		Assignment: Reading 6 PHYTO pages 242-244
		Student Case Study Presentations (if any remain)
		Teams formed and start working on semester project
Thurs, March 11		**Due** (Grads only): Literature Synopsis
		Literature Synopsis Informal Discussion
		Teams work on semester project
March - April		Additional Readings and project due dates (TBD)
Tues, April 27		Last Day of Class
Apr 30, May 3, 4, 5,6		**Due**: Final Project (Oral + Visual Presentations & Written Report)