Rutgers, the State University of New Jersey
School of Environmental and Biological Sciences

Sustainable Landscape Technology - 11:550:442

Instructor:
Frank Gallagher, Ph.D.
Director, Environmental Planning and Design
Department of Landscape Architecture

93 Lipman Drive – Blake Hall 112
New Brunswick, N.J. 08901-8524
O - 848 932 5167, C - 973 919 4123
Gallaghergreen.com

Office Place/Hours – 115 Blake Hall Lipman Dr., Tues. 10-11:30; Fri. 9-11
Location/Time: Blake 244 / Wednesday, 10:55 – 1:55

Course Overview:

A fundamental premise of sustainable landscape planning and design is the integration of the anthropocentric and biocentric environments. Dependent upon the functioning of natural systems sustainable landscape technologies can take the form of mimicry, modeling, restoration, regeneration and mitigation. In all cases however, such systems included cyclical processes such as the carbon, hydrologic or nutrient cycling and move away from the traditional "build-use-discard" process associated with traditional development.

The overarching goal of this course is to create an understanding of how technological development and natural systems can be synergistic. Students will visit sites within the New York -New Jersey metropolitan area to develop an understanding of several new technologies that target issues surrounding land, water and energy conservation.

Learning Goals:

1. Students will analyze the relationship that science and technology have to a issues of sustainability using science, technology, and cultural context to critique innovative solutions in sustainability technologies and land stewardship.
2. Students will be able to effectively communicate, in standard written English, to a general audience, and respond effectively to editorial feedback from peers, instructors, &/or supervisors through successive drafts & revision.

Learning Objectives and Assessment:

Current sustainability issues are reviewed and objectively analyzed and evaluated using a case study approach.

Learning Objective I: Students gain an understanding of the concept of sustainability, which is or should be driven by the Land Ethic. The nexus between ecological function and sustainability is defined.

Assessment: Elements of sustainability reflective of a land ethic, based upon the definition developed by The Brundtland Commission of 1987 are discussed in the first Field Trip Summary. An assessment of the existing and projected demographic trends at the regional and global scale will be demonstrated within the Reading Questions.

Learning Objective II: Students will gain a working knowledge of the policy and regulatory framework driving the implementation of sustainable technologies.
Assessment: The laws and regulatory statues guiding societies movement towards the sustainable consumption of products and services from forest, wildlife, and soil will be identified in the Second Field Trip Summary. An awareness and knowledge of the land use trends will be articulated in the reading reviews,.

Learning Objective III: Students will gain a working knowledge of the international initiatives and controversy surrounding climate change, and energy consumption.
Assessment: The characteristics of and the international agreements made concerning climate change and energy consumption will be identified in the reading and field trip reviews. A functional understanding of the history and current trends in climate change will be exhibited in the fifth field trip summary.

Learning Objective IV: Students will synthesize various course elements through an examination of the concepts of sustainability and convey them both orally and in written form.
Assessment: An ability to clearly articulate both in an oral presentation and written form the state of the human/environment relationship progress towards sustainability will be examined in the term project.

Required Readings:
Reading assignments and questions are listed in the Assignment Folder on SAKAI

General Course Schedule:
January - class begins (Wen. 22nd)
February - project proposal (Wen.5th)
March – 11th No Class Spring Recess
April - Term Paper Written Draft (Wen. 8th)
May – Final Paper Due (Wen. 13th)

Course Requirements

Reading Questions: Each reading assignment has several questions which must be answered within one week of the assignment date.

Field Trip Summaries:
Each field trip requires a written summery due one week after the trip. The summary is a short technical report. It covers the issue being addressed, the methods used at the site, the advantages and disadvantages observer and the future potential of the practice and/or technology future potential.

Term Paper Outline and Bibliography:
Even if your term project is physical in nature, it must have a written report component. The draft is expected to include an index, an outline and the literature research done for the project. This draft must also include a bibliography of source material you have examined to date. (50 pts). While not complete

the draft should be written in a technical style, appropriately formatted, using correct grammar, using appropriate conventions for attribution and citation.

Term Paper:
A term paper or project is also required. A project/paper must be based on one of the issues covered in class. It should cover the issue in depth. Documentation of the project will depend upon the type of work that is undertaken. Papers or projects must be approved before you start as per the above schedule. If a paper is chosen it should be between 3,000 and 5,000 words. The final project or paper should be written in a Scientific technical style, appropriately formatted, using correct grammar, and most importantly the appropriate conventions for attribution and citation (see style guide in the resources folder on SAKAI). In addition, the presentation of the term paper will count as 15%% of the paper's grade. Presentations should be approximately 15 minutes in duration.

Detailed Schedule:

Wk	Date	Activity	Readings and Assignments:
1	1/22	Lecture: Issues we care about Land Functions and Protection Discussion: What is Sustainability	Reading 1: Report of the World Commission on Environment and Development: Our Common Future Chapter 1-4
2	1/29	**Field Trip 1** Duke Farms Overview / Structure	Reading 2: Report of the World Commission on Environment and Development: Our Common Future Chapter 5=7
3	2/5	Discussion - Field Trip Debrief. Lecture - Ecological Design	Field Trip 1 Summary Due Reading 3: An Introduction to Ecological Design
4	2/12	**Field Trip 2** Duke Farms Meadow/Forest	Reading 4: FIA 2 15
5	2/19	Discussion - Field Trip debrief Lecture – Living Breakwater	Field Trip 2 Summary Due Reading 5: Resilience Matters
6	2/26	**Field Trip 3** - Aeroponics Newark	Reading 6: Sustainable place-making
7	3/4	Discussion - Field Trip Debrief Lecture Sustainable Ag. – Brooklyn Yards	Field Trip 3 Summary Due Term Paper Proposal Due
8	3/11	Spring Recess	
9	3/25	Alternative Land Based Waste Water Treatment	Term Paper Outline and Bibliography Due
10	4/1	**Field Trip 4** Duke Farms – Waste Water System	Reading 7: Ecosystem Service Stormwater
11	4/8	Field Trip Debrief Lecture: Energy	Reading 8: AEO 2019

12	4/15	**Field Trip 5 on 4/18** Battery Park City	Field Trip 4: Summary Due
13	4/22	**Presentation Group 1** Lecture – GCC/Sustainability	
14	4/29	**Presentation Group 2** Lecture – Sustainable Future	Field Trip 5 Summary Due
15	5/6	**Reading Day**	
16	5/13	**Final Paper Due**	**Final Paper Due**

Grade Calculation:	**Learning Objectives**		**Points**	**% Final Grade**
Reading Questions	1	2	15	15
Field Trip Summaries	1	4	40	40
Term Paper Outline	1	4	5	5
Final Paper	3	4	40	40

Totals: 100-90 A, 89-80 B, 79-70 C, D's and F's are not acceptable.

Departmental Grading Guidelines:
While the assignment of grades is ultimately the purview of the instructor, the department uses the following guideline for understanding appropriate grading in its courses:

A- Outstanding -This not only means fulfilling the requirements, but impressing and going beyond the initial expectations of the project. The student has demonstrated a superior grasp of the subject matter coupled with a high degree of creative or logical expression, and strong ability to present these ideas in an organized and analytical manner,
B- Very Good - The student has demonstrated a solid grasp of the material with an ability to organize and examine the material in an organized, critical, and constructive manner, The projects and in-class performance reveal a solid understanding of the issues and related theories or literature.
C- Acceptable -The student has shown a moderate ability to grasp concepts and theories for the class, producing work that, while basically adequate, is not in any way exceptional. This performance in class display a basic familiarity with the relevant literature and techniques.
D- Unacceptable - The work demonstrates a minimal understanding of the fundamental nature of the material or the assignment with a performance that does not adequately examine the course material critically or constructively. Students cannot graduate from the Landscape Architecture program with 2 D's in required classes.
F- Failure - The student has demonstrated a lack of understanding or familiarity with course concepts and materials. Their performance has been inadequate. Failure is often the result of limited effort and poor attendance which may indicate that the student is not in the proper field of study.

Attendance:
Class attendance is mandatory. A minimum level of participation is defined as being in attendance for the entire duration of a class session. It is the student's responsibility to be in attendance at all required classes and trips. All personal plans should be made in accordance with the class schedule.

Attendance and active participation in class is a fundamental part of design learning. The interaction, discussion, and design activity that takes place during class will be critical to both the development of your design for this class, but also your development as a designer. Unexcused absences are not permitted. If you miss class for illness or an emergency, please provide a written explanation of this absence to the instructor, preferably before the class missed, but no more than a week after the absence.

Field trip attendance may create some schedule conflicts. Please let the instructor know of any conflicts well before hand, we will try to work out alternatives.

Personal Circumstances:
If you encounter any personal circumstances that inhibit your ability to fulfill the requirements of this course, you should contact the instructor immediately. Likewise, any student with a special need, circumstance or disability should make an appointment with the Instructor during the first week of class.

Accommodations for Students with Disabilities:
Please follow the procedures outlined at https://ods.rutgers.edu/students/registration-form. Full policies and procedures are at https://ods.rutgers.edu/

Academic Integrity
The intentional copying of another student's file [work] or a portion of a file [work] and representation of the work as your own work is in direct violation of the University Integrity Policy: Plagiarism: the representation of the words or ideas of another as one's own in any academic work. It is a violation of academic integrity for a student to aid others in violating academic integrity. A student who knowingly or negligently facilitates a violation of academic integrity is as culpable as the student who receives the impermissible aid, even if the former student does not benefit from the violation.
As a result, any copying and/or "sharing" of exercises, homework assignments, and projects will be treated as Level 2 violations and subject to the sanctions as outline in the Integrity Policy:
1. A failing grade on the assignment.
2. A failing grade for the course.
3. Disciplinary warning or probation.

Work Becomes Department Property:
Submitted drawings, models, photographs, or written papers for any project assigned in Landscape Architecture courses are considered the property of the Department and may be retained in its archives for exhibition and accreditation purposes. All projects will be graded and returned to the student at a location designated by the instructor. Should your drawings be retained by the Department, you will be given the opportunity to obtain a print or photographic record of your work. Department files are OFF LIMITS to students.