

# **11:550:241 Landscape Architecture Construction I**

**Fall 2016**

Rutgers The State University of New Jersey  
School of Environmental and Biological Sciences  
Department of Landscape Architecture

**Course Credits:** Four (4)  
**Schedule:** Monday 10:55 AM - 1:55 PM  
Wednesday 10:55 AM - 1:55 PM  
**Class Room:** Blake Hall Room 246  
**Instructors:** Holly Grace Nelson, 116 Blake Hall  
Holly.nelson@rutgers.edu  
Office hours by appointment



Rich Bartolone, 223 Blake Hall  
Office hours by appointment  
rbartolo@rci.rutgers.edu  
**Teaching Assistant:** Breanna Robles  
E-mail: brerob@gmail.com

## **Quantitative & Formal Reasoning (QR)**

x. Apply effective and efficient mathematical and site engineering processes to reason and to solve problems related to site topography, stormwater runoff and roadway alignment.

## **Learning Objectives**

- Identify setting and site conditions that describe, quantify and represent area, volume, slope, material coverage and rates of water runoff.
- Structure and analyze proposed solutions using site engineering (geometric, trigonometric and algebraic) calculations, processes and procedures.
- The ability to draw conclusions, present and document proposed improvements and solutions in standard site engineering format(s).

## **Required Text**

Site Engineering for Landscape Architects, Strom, Nathan, and Woland

## **Recommended**

Site Engineering for Landscape Architects Workbook, Jake Woland, Second Edition

## **Course Description**

Site engineering is a functional and creative endeavor. This course will cover the fundamentals of land measurement and mapping techniques in addition to the principles and basic mechanics of site engineering and grading. Course work will assist student understanding of basic site design principles and assist them in developing innovative grading and stormwater solutions. Lectures and assignments will cover basic principles; field and studio exercises will take on problems involving contour measurement and mapping, earthwork and stormwater management design. Design solutions will include associated calculations, roadway design and layout dimensioning procedures. Exercises become increasingly complex as the course progresses. Students completing the course will be prepared to successfully complete the site engineering and grading portion of the national landscape architecture licensing exam and will have developed the ability take on the multifaceted design of landscapes by assessing and shaping sites from the ground up.

## Weekly Outline of Topics

- Sept. 7 Introduction; Land Form and Contours (Chapter 1)  
Differential Leveling; Due: Cross Section Preparation, Field Data, Misclosure
- Sept. 12 Contours, Grading and Land Forms (Chapters 2 & 3)  
Workbook: Chapter 3.7, 3.8, 3.11, 3.12, 3.13, 3.14 (Bring cardboard to class)
- Sept. 14 Topographic Measurement and Mapping; Due: Topographic Map, 8½" x 11"  
graph paper, Field Data Notes
- Sept. 19 Interpolation and Slope (Chapter 4) Workbook: 4.1, 4.2, 4.3, 4.4, 4.5 (Figure 4.4,  
Figure 4.5 & Figure 4.7), 4.8
- Sept. 21 Profile and Cross Section Measurement and Plotting; Due: 3 cross sections (10  
scale), 1 profile (50 scale), exaggerate vertical scale 10x, 8½" x 11" graph paper
- Sept. 26 Grading of Simple Design Elements (Chapters 5, pages 77-93)  
Workbook: 5.1, 5.2, 5.3, 5.4, 5.6, 5.7
- Sept. 28 Grading for Surface Drainage (Chapter 5, pages 93-99)  
Workbook: 5.9, 5.9 in cut, 5.10
- Oct. 3 Grading Process (Chapter 6) Workbook: 6.1, 6.3, 6.4
- Oct. 5 Grading Exercise Handouts
- Oct. 10 Soil in Construction (Chapter 7) Workbook: 7.7, 7.8,
- Oct. 12 Mid-Term Exam
- Oct. 17 Earthwork (Chapter 8) Workbook: 8.1, 8.2, 8.4
- Oct. 19 Measurement of Direction/Transit: Angle Measurement
- Oct. 24 Storm Water Management (Chapter 9)
- Oct. 26 Measurement of Direction/Simple Traverse Measurement
- Oct. 31 Storm Water Management System Components (Chapter 10)  
Soil Erosion and Sediment Control (Chapter 11) Campus tour
- Nov. 2 Storm Water Management Research - Student Presentations
- Nov. 7 U.S. Public Land Survey System, Solar Movement Charts
- Nov. 9 Determining Rates and Volumes of Storm Runoff (Chapter 12)  
Work Book: 12.6, 12.7, 12.8, 12.11
- Nov. 14 Designing/Sizing Storm Water Management Systems (Chapter 14)  
Work Book: 14.7, 14.8, 14.10, 14.11
- Nov. 16 *Chapter 14 Workbook: 14.12, 14.13, 14.14*
- Nov. 21 Site Layout and Dimensioning (Chapter 15) Work Book: 15.10, 15.11
- Nov. 23 Friday class schedule
- Nov. 28 Horizontal Road Alignment (Chapter 16) Work Book: 16.4, 16.9, 16.10 (partial),  
16.11
- Nov. 30 Vertical Road Alignment (Chapter 17) Work Book: 17.4, 17.9

Dec. 5	Stormwater Project Introduction
Dec. 7	Stormwater Project: In-class Critique
Dec. 12	Stormwater Project: Sections and Cut and Fill Calculations
Dec. 14	Finalize Stormwater Project
Dec. 19	Submission of Stormwater Plan, Sections and Cut/Fill Calculations by 3 PM

### **Course Format**

Class time will combine both lecture, field work and studio time and will vary through the semester due to the subject course topics. Lectures will present an overview of the site engineering and grading topic of the week and will be followed up with field work and/or lab assignments that will emphasize the lecture material. Students may on occasion work in groups during the lab session, however, each student will be required to complete all assignments and submit their own work. Students are expected to participate in class discussions and attend the labs and field trips scheduled throughout the semester.

### **Supplies**

Cardboard will be needed for physical models.

Standard drafting equipment, engineering scale, graph paper and trace paper.

### **Grading Practices**

Homework assignments and lab exercises will be due at the beginning of the following class/lab period unless otherwise noted. Work will be accepted up to a maximum of one week after due date. Half credit will be given after one week of being due and zero credit afterward. The grades for course will be distributed according to the following percentages.

- Weekly Assignments 50%
- Mid Term Exam 20%
- Final Project 30%

Note: as per Department policy, only one course grade of D is accepted in the major. If a student receives a second D in a 550 course, they cannot progress in the program until one of the D grades is improved.

The final course grades are given as letters A, B+, B, C+, C, D, and F. See explanation of letter grades below.

**A-** Outstanding- This not only means fulfilling 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 a 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. The student displays 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 550 classes.

**F- Failure-** The student has demonstrated a lack of understanding or familiarity with course concepts and materials. The student's 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.

Semester grades will be calculated based on accumulation potential of 100 points per assignment or test. The following corresponds to these letter grades.

A ≥ 90

B+ ≥ 85

B ≥ 80

C+ ≥ 75

C ≥ 70

D ≥ 60

F < 60

### **Attendance**

The Department of Landscape Architecture requires attendance in all of its classes. The individual student's development as a landscape architect is largely dependent upon two aspects of education. First is the exposure to and assimilation of a body of information which relates to the field. Second is the application of this knowledge through studio projects and problem-solving skills developed through critiques, reviews and interactions.

The Rutgers Landscape Architecture curriculum is designed to develop both areas. Attendance and participation in all lectures and studios is essential if the student is to achieve his/her maximum potential. **Four absences will result in a step reduction in your semester grade (A to B, B to C, etc.). Each additional three absences will result in another step reduction.** 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 all personal plans should be made in accordance with the schedule.

Students on academic probation have **NO ALLOWABLE UNEXCUSED ABSENCES.**

### **Absence and Lateness Policy (specific to this course)**

- Students are expected to be in class at the time the class is scheduled to begin. Three instances of lateness of more than five minutes at the beginning of class, will count as one unexcused absence.
- An absence is excused only if it has received prior permission from the instructor or if a note from a doctor is submitted upon return to class.
- In the event of an absence, the student is responsible for making up any missed work, getting assignments, and submitting assigned work on time.

### **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.

## **Use of Facilities**

Landscape Architecture courses cannot be taught without reliable facilities. Your use of the facilities is dependent upon responsible use with particular regard to the clearly established rules about their use as specified in the student handbook:

[http://landarch.rutgers.edu/documents/StudentHandbook\\_web.pdf](http://landarch.rutgers.edu/documents/StudentHandbook_web.pdf)

These rules cover access to the computer lab and vandalism, personalization of work space, smoking and drinking, use of lockers, access to the reference collection, and basic rules governing the use of computer lab. Failure to observe rules may result in loss of access.

## **Equipment**

The student handbook also includes a section governing the use of equipment:

[http://landarch.rutgers.edu/current students/students%20handbook/StudentHandbook web SectII.pdf](http://landarch.rutgers.edu/current%20students/students%20handbook/StudentHandbook%20web%20SectII.pdf)

This section includes rules specifying use of department equipment including projection equipment, department cameras, computers, scanners, printers, and plotters.

## **Academic Integrity Policy**

The intentional copying of another student's work and presenting it as your own is in direct violation of the University Integrity Policy:

As a result, any copying and/or "sharing" of exercise assignments work and projects will be treated as Level 2 violations and subject to the sanctions as outlined in the Integrity Policy:

1. A failing grade on the assignment.
2. A failing grade for the course.
3. Disciplinary warning or probation.

Repeat violations will be treated as separable Level Three violations and referred to the AIF of the school for adjudication. Please refer to the complete Integrity Policy at:

<http://academicintegrity.rutgers.edu/academic-integrity-policy/>

## **STUDENT WELLNESS SERVICES**

Just In Case Web App <http://codu.co/cee05e>

Access helpful mental health information and resources for yourself or a friend in a mental health crisis on your smartphone or tablet and easily contact CAPS or RUPD.

Counseling, ADAP & Psychiatric Services (CAPS)

(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901/ [www.rhscaps.rutgers.edu/](http://www.rhscaps.rutgers.edu/)

CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional within Rutgers Health services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that include: individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

Violence Prevention & Victim Assistance (VPVA)

(848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 / [www.vpva.rutgers.edu/](http://www.vpva.rutgers.edu/)

The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932- 1181.

### Disability Services

(848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 / <https://ods.rutgers.edu/>

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation:

<https://ods.rutgers.edu/students/documentation-guidelines>. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site at:

<https://ods.rutgers.edu/students/registration-form>.

### Scarlet Listeners

(732) 247-5555 / <http://www.scarletlisteners.com/>

Free and confidential peer counseling and referral hotline, providing a comforting and supportive safe space.