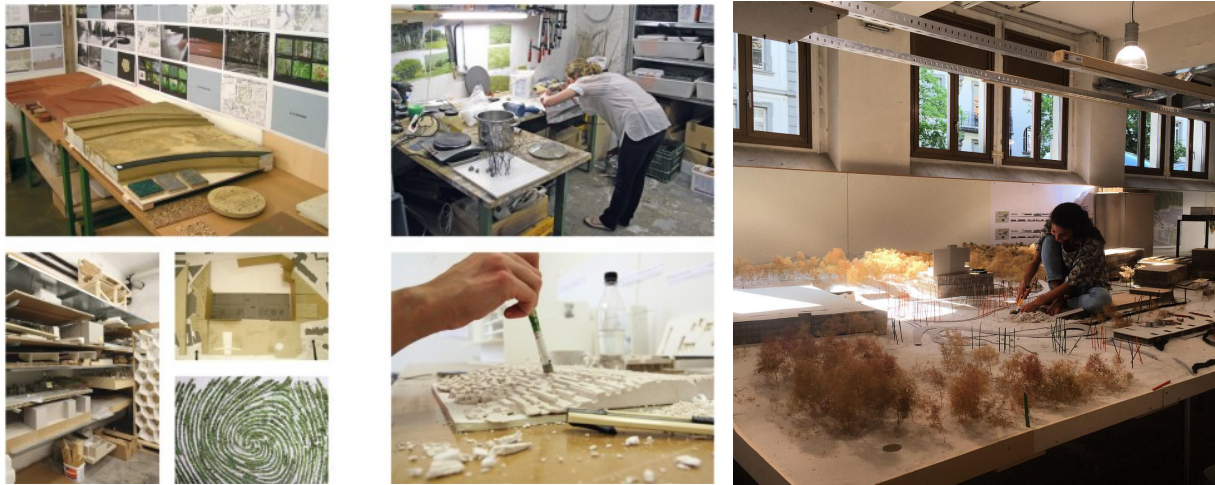


# MATERIAL TECTONICS [SPRING 2021]

Rutgers, The State University of New Jersey



Models and modelmaking as material and tectonic exploration in the design process. Credit: Vogt Landschaftsarchitekten.

COURSE CODE: LANDSCAPE ARCHITECTURE 11:550-438 [3 CREDITS]  
CLASSROOM LOCATION: ZOOM & CANVAS  
CLASS HOURS: MONDAY 2:15PM - 5:15PM  
INSTRUCTOR NAME: VINCENT JAVET  
[v.javet@rutgers.edu](mailto:v.javet@rutgers.edu)

OFFICE HOURS: By Appointment Only

## COURSE DESCRIPTION:

This course confronts the conventional concepts behind modern building science and material applications, applying the processes of fabrication and methods of construction to investigate materiality, particularly in relation to tectonics. Over the duration of this course, students will be provided the opportunity to develop both a fundamental understanding of material principles and to demonstrate their application to the analysis and design of material processes. Through the investigation of materials and form this course focuses on building a working knowledge of traditional and contemporary building materials, applications, and limitations.

This semester students will work with the New Jersey Department of Environmental Protection (NJDEP) to design site-specific park installations that reflect, capture or articulate climate related phenomena and challenges. Students will explore physical and sensorial effects of site-specific material composition through scaled study models that work to mediate environmental phenomena. Drawing, drafting and bricolage modelmaking methods will be used to test and arrive at both digital representations and physical model prototypes to serve as proof of concept.

**LEARNING OBJECTIVES:**

1. Learn digital and analogue fabrication methods for a site-specific design.
2. Build full-scale design prototypes that investigate innovative material research and assemblies.
3. Develop design strategies to create, reimagine and reclaim materials.

**COURSE FORMAT:**

This course presents principles and techniques of computer-aided drafting and design through a combination of:

- Lectures / Presentations
- In-Class Exercises & Reading Discussions
- Assignments & Pin-Up Critiques
- Project Construction

**STUDENT OBLIGATIONS AND EXPECTATIONS:**

This class is offered for three credits with a three-hour class meeting on Mondays [2:15PM – 5:15 PM]. This course satisfies the Architecture elective course requirement within the accredited Bachelor of Science Landscape Architecture (BSLA) degree in the School of Environmental and Biological Sciences (SEBS), at Rutgers University.

Students are expected to:

1. Complete and submit all assignments as directed on the designated due date. Late coursework will not be accepted.
2. Come to class on time. Late arrivals greater than ten (10) minutes will be marked as absence.
3. Take notes during class presentations to help retain knowledge and repeat procedures outside of class. The instructor will not review any content that has missed by a student's absence. Your attendance will be directly related to your success in this class.
4. Care. Put 100% into every one of your assignments and be proud of the work you produce in this class. Treat each assignment like it is your last.
5. Seek help, when needed, during office hours and in advance of an assignment's due date.

**ATTENDANCE:**

The Department of Landscape Architecture requires attendance in all of its classes. All studio meetings including both Lecture and Lab are required. The individual student's development as a landscape architect is largely dependent upon two aspects of education. First, is the exposure to an 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 during each project. The Rutgers Landscape Architecture curriculum is designed to develop both areas. Attendance and participation in all lectures and studios are essential if the student is to achieve their maximum potential.

It is the Policy of the department that more than three (3) unexcused absences will result in a reduction of the final course grade. Each additional three absences will result in another step reduction. If circumstance arises beyond your control, please notify the Instructor prior to the class meeting, and other arrangements will be made. Please note that attendance is taken at the start of class and late arrivals greater than 10 minutes will be documented as a full absence. In addition, students may not leave the class prior to the official end time of class unless the Instructor has officially dismissed the students, or the early departure has been pre-arranged with the instructor in advance. In-class exercises will be handed out during class periods; there will not be a chance to make up missed exercises.

**EQUIPMENT AND USE OF FACILITIES:**

The Department of Landscape Architecture requires that each student purchase a laptop [[http://landarch.rutgers.edu/current\\_students/laptoprequire.html](http://landarch.rutgers.edu/current_students/laptoprequire.html)]. In addition to the laptop, you will need a roller-ball style mouse. NOTE: The computer lab is not accessible when a class is in session. A schedule of courses using the Lab is posted on at the entry of the lab. The Lab is a shared resource for the entire school body. Project deadlines will NOT be extended because resources were not available in the computer lab. Please plan your time accordingly. Please be aware that the Department's computer guidelines require a PC-based platform. There are differences between PC and MAC based platforms and programs. The computer lab is PC based and the Department supports PC based software. If you choose to utilize a MAC, you must adhere to the guidelines provided. Rhino 3D-V6, and Flamingo are installed on all desktop computers in the lab.

Courses cannot be taught without reliable facilities. The student is expected to use facilities and equipment [printers, projectors, cameras, drafting, and computer equipment] responsibility with particular regard to the clearly established rules about their use as specified in the student handbook:

*Facilities & Equipment* rules cover access to the lab, vandalism, seat assignments, personalization of working spaces, smoking and drinking, use of lockers, access to the reference collection, and basic rules governing the use of computer lab. Please note the department has determined that there is no eating or drinking allowed in the computer lab. Failure to observe these rules may result in loss of access to the lab. Access to the fabrication lab is granted after successfully passing the safety instructions. Access is monitored and can be revoked if students use tools they are not qualified to use or if students do not clean up after themselves.

#### **INDEMNIFICATION AGREEMENT:**

This course will involve extensive use of the Fabrication Laboratory [FAB-LAB] and the full-scale construction of student work, as well as, travel off-campus for field trips. As in all design-build work, safety is the paramount concern. Students in this course will be required to attend instructional sessions on shop safety and machine basics, as well as, demonstrate to a faculty member, safe and efficient use of each piece of equipment in the FAB-LAB which the student intends to use in accordance with Departmental procedures.

By registering for the course, the student understands the dangers involved in build research and construction and agrees to not use any piece of equipment upon which they have not been trained or do not feel comfortable. Further, the student agrees to follow all of the rules and regulations of Rutgers, The State University of New Jersey safety standards, the FAB-LAB, and specific rules of the Material Tectonics course. The student understands that the Lab is an integral part of the course and will not use the Lab for any work outside of the parameters of this specific course and understands that they are responsible for the proper use and maintenance of the lab and the equipment herein. The student fully understands and agrees that failure to abide by any of the rules and regulations set forth by the University, in the FAB-LAB, or in the course, will be cause for immediate revocation of access to the FAB-LAB. Exceptions will not be made for completion of course work. The student understands that these rules and regulations can be updated at any time and it is their responsibility to remain aware of changes posted in the FAB-LAB or online in the course Sakai Worksite. The student will sign hold harmless/indemnification agreements with the Department of Landscape Architecture and Rutgers, The State University of New Jersey for all course related field trips and all FAB-LAB use.

**ASSESSMENT:**

All course grades are related to the following numerical scoring system. Your final course grade is computed by cumulating each score received throughout the semester and weighted by the percentages given above.

LETTER GRADE	PERCENTAGE (%)
A	89.5-100
B+	84.5-89.49
B	79.5-84.49
C+	74.5-79.49
C	69.5-74.49
D	59.5-69.49
F	0-59.49

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 and assigned elements of the project. The student has demonstrated a superior grasp of the subject matter coupled with a high degree of creative or logical expression, individual initiative, 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 techniques, issues and related theories, with some additional work completed.

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 performance in class 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 Two [2] D's in required 550 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.

## **POLICIES:**

If you encounter any personal circumstances that inhibit your ability to fulfil the requirements of this course, you should immediately contact the instructor. In addition, any student with a special need, circumstance, or disability, should make an appointment to see the instructor during the first week of classes. All information in this syllabus and course schedule is subject to change.

## **ASSIGNMENTS:**

Assignments are to be worked on outside of class time and 'work in progress' is to be discussed during class meetings as articulated in the class schedule. Assignments must be uploaded to Canvas by on the due date. Specific assignment instructions will be articulated on handouts, found in the Assignments section of Canvas.

If a student misses a class, whether excused or unexcused, it is the responsibility of the student to acquire the missed lecture information, new assignment and submit the previous assignment on time. Except for documented circumstances truly beyond the student's control, all projects that are incomplete on the due date should still be submitted on the due date in their incomplete state, to receive a partial credit and fully completed, thereafter for a reduced grade. If a student elects to not submit work, they will receive a zero. Any project work submitted late will lose a letter grade for each day past due. Students must conform to the following naming conventions:

550-438\_LastName\_FirstName\_Assignment# (drawing file [DWG or 3DM format])

550-438\_LastName\_FirstName\_Assignment# (flat images [JPG format])

550-438\_LastName\_FirstName\_Assignment# (compiled vector file [PDF format])

## **ASSIGNMENT & GRADING SCHEDULE:**

Assignments - 80%

Assignment 1: SITE SELECTION & ANALYSIS // [2 weeks] // 15%

Assignment 2: PHYSICAL SITE MODEL // [4 weeks] // 15%

Assignment 3: DIGITAL & PHYSICAL: MID-TERM PROPOSAL // [4 weeks] // 25%

Assignment 4: PHYSICAL & DIGITAL: FINAL PROPOSAL // [4 weeks] // 25%

Project Presentations – 10%

Class Participation – 10%

**CLASS SCHEDULE:**

<b>WEEK 01: JANUARY 18 – JANUARY 22</b>
Monday, 1/18
[NO CLASS]
<b>WEEK 02: JANUARY 25 – JANUARY 29</b>
Monday, 1/25
Lecture: COURSE INTRODUCTION Assignment 1: SITE SELECTION & ANALYSIS Classwork: Assignment 1 work session & discussion
<b>WEEK 03: FEBRUARY 01 – FEBRUARY 05</b>
Monday, 2/1
Lecture: ON CLIMATE & INTERPRETATION Check-In: Assignment 1 progress presentations Classwork: Assignment 1 work session
<b>WEEK 04: FEBRUARY 08 – FEBRUARY 12</b>
Monday, 2/8
Lecture: ON MODELS Assignment 2: PHYSICAL SITE MODEL Classwork: Assignment 2 work session
<b>Deadline:</b> Assignment 1: SITE SELECTION & ANALYSIS
<b>WEEK 05: FEBRUARY 15 – FEBRUARY 19</b>
Monday, 2/15
Check-In: Assignment 2 progress presentations Classwork: Assignment 2 work session
<b>WEEK 06: FEBRUARY 22 – FEBRUARY 26</b>
Monday, 2/22
Lecture: ON ART & DESIGN Assignment 3: DIGITAL & PHYSICAL: MID-TERM PROPOSAL Check-In: Assignment 2/ 3 progress presentations Classwork: Assignment 2/ 3 work session
<b>WEEK 07: MARCH 01 – MARCH 05</b>
Monday, 3/1
Check-In: Assignment 2/ 3 progress presentations Classwork: Assignment 2/ 3 work session
<b>WEEK 08: MARCH 08 – MARCH 12</b>
Monday, 3/8
Check-In: Assignment 3 progress presentations Classwork: Assignment 3 work session
<b>Deadline:</b> Assignment 2: PHYSICAL SITE MODEL

<b>MARCH 15 – MARCH 19</b>
Monday, 3/15
[SPRING BREAK]
<b>WEEK 09: MARCH 22 – MARCH 26</b>
Monday, 3/22
[MID-TERM REVIEW]
<b>Deadline:</b> Assignment 3: DIGITAL & PHYSICAL: MID-TERM PROPOSAL (Digital Submit & Virtual Pin-Up)
<b>WEEK 10: MARCH 29 – APRIL 02</b>
Monday, 3/29
Lecture: ARTICULATING PHENOMENON Assignment 4: PHYSICAL & DIGITAL: FINAL PROPOSAL Classwork: Assignment 4 work session & discussion
<b>WEEK 11: APRIL 05 – APRIL 09</b>
Monday, 4/5
Check-In: Assignment 4 progress presentations Classwork: Assignment 4 work session
<b>WEEK 12: APRIL 12 – APRIL 16</b>
Monday, 4/12
Check-In: Assignment 4 progress presentations Classwork: Assignment 4 work session
<b>WEEK 13: APRIL 19 – APRIL 23</b>
Monday, 4/19
Check-In: Assignment 4 progress presentations Classwork: Assignment 4 work session
<b>WEEK 14: APRIL 26 – APRIL 30</b>
Monday, 4/26
[FINAL REVIEW]
<b>Deadline:</b> Assignment 4: PHYSICAL & DIGITAL: FINAL PROPOSAL (Digital Submit & Virtual Pin-Up)

#### READINGS/ COURSE BIBLIOGRAPHY:

Students are not required to purchase a textbook for the course. Select readings are paired with weekly lectures and inform course assignments. Readings are assigned as part of Assignment handouts.