UCONN
UNIVERSITY OF CONNECTICUT

**CE 4410 (Section 001 & Section 001X)**
Computer Aided Site Design
Civil and Environmental Engineering Department

## Syllabus -- Spring 2021

Excluding materials for purchase, syllabus information may be subject to change. The most up-to-date syllabus is located within the course in HuskyCT.

## Program Information

Only open to students in the School of Engineering.

## Course and Instructor Information

**Course Title:** Computer Aided Site Design
**Credits:** 3 units
**Format:** Lecture: MoWe 4:40PM - 5:30PM
– Section 001: In-Person – Room OAK 101
– Section 001X: Distance Learning – https://s.uconn.edu/manishroywebex

Lab: Distance Learning – https://uconn-cmr.webex.com/meet/mjh17001
– Section 001L: Tu 8:00AM - 10:00AM
– Section 002L: Tu 10:00AM - 12:00PM
– Section 003L: Tu 12:00PM - 2:00PM
**Prerequisites:** CE 2410 or CE 2411 or ENVE 2411. Recommended preparation: CE 2710

**Professor:** Manish Roy, Ph.D
**Pronouns:** he/him/his

**Email:** manish.roy@uconn.edu
**Virtual Student Hours/Availability:** Tu 4:00PM - 5:00PM*[1] (https://s.uconn.edu/manishroywebex)
(Only one student will be allowed to enter the virtual room at a time on a first come first served basis, unless a group of students like to meet together.)

*[1] I welcome you to contact me through emails outside of aforesaid student hours. I will try my best to respond within 24 hours Monday through Friday.

**Graduate Teaching Assistant:** Md Julfiker Hossain
**Email:** mdjulfiker.hossain@uconn.edu
**Virtual Student Hours:** We 1:00PM - 2:00PM (https://uconn-cmr.webex.com/meet/mjh17001)

**Graduate Teaching Assistant:** Asadul Tanvir
**Email:** asadul.tanvir@uconn.edu
**Virtual Student Hours:** M 3:00PM - 4:00PM
Th 12:00PM - 1:00PM (https://uconn-cmr.webex.com/meet/aht17001)

**Undergraduate Academic Assistant:** Warren Strong III
**Email:** warren.strong_iii@uconn.edu
**Virtual Student Hours:** W 3:00PM - 4:00PM (https://uconn-cmr.webex.com/meet/was16102)

## Course Materials

**Required course materials should be obtained before the first day of class**.

Required textbooks are available for purchase through the UConn Bookstore (or use the Purchase Textbooks tool in HuskyCT). Textbooks can be shipped (fees apply).

**Required Materials:**

Item 1. Textbook: Site Engineering for Landscape Architects, 6th Edition, by S. Strom, K. Nathan, J. Woland, 2013. John Wiley & Sons. ISBN 978-1-118-09086-2.

Item 2. iClicker REEF (DL/in-person section) or Remote (in-person section). Please note that iClicker Remote will not work if you are attending the lecture sessions remotely. In that case, you must have the REEF subscription. Please register your iClicker account with the course site by February 1. (It is your responsibility to check whether your iClicker Remote/REEF Account is properly working without any technical issues such as wi-fi, phone battery, etc. If the iClicker site is down, then that session will not be included in the grade. Check the HuskyCT Grade center for the iClicker participation points.)

*Additional course readings and media are available within HuskyCT, through either an Internet link or Library Resources.*

Statement on Copyright: My lectures, notes, handouts, and displays are protected by state common law and federal copyright law. They are my own original expression and I've recorded them prior or during my lecture in order to ensure that I obtain copyright protection. Students are authorized to take notes in my class; however, this authorization extends only to making one set of notes for your own personal use and no other use. Students are prohibited from recording any session, or any portion of a session, by other means

## Course Description and Delivery

Course Description from Course Catalog: Roadway and street network design and site development using computer software, including grading and earthwork, runoff and drainage structures.

The lecture portion of the course will be taught in person during the class times posted on the Student Admin and will be livestreamed synchronously to the students who have signed up for the Distance Learning (DL) section.

The lab portion of the course will be taught in Distance Learning (DL) mode during the class times posted on the Student Admin.

All office hours including that of the TAs, will be held remotely. All assessments will be administered online.

## Course Objectives

By the end of the semester, you should be able to:

1. Perform a grading plan for site design.
2. Perform earthwork calculations such as cut-and-fill volumes for construction sites.
3. Estimate rate and volume of stormwater runoff using various methods.
4. Design stormwater management systems.
5. Identify different forms of zoning.
6. Apply CAD tools (MicroStation, OpenRoads, AutoCAD) to design sites, contour maps, and roadways, and estimate drainage.

## ABET Criterion 3 Student Outcomes (addressed by the course)

| Criterion 3 Element | Level addressed (L, M, H) | Justification |
|---|---|---|
| 1 | H | Students use basic engineering knowledge in solving design project problems. Students develop the ability to design basic civil engineering systems and take into account best practices and the social and physical environment in which the design will be implemented. |
| 2 | H | Students develop the ability to design basic civil engineering systems taking into account design considerations, current codes, and environmental and land-use regulations according to best management practices. |
| 3 | H | Students work with given site data, such as topography and intended use and must decide how to integrate the design project with the site conditions. |
| 4 | M | Students develop the ability to communicate through engineering drawings. |

## Course Requirements and Grading

**Summary of Course Grading:**

| Course Components | Weight |
|---|---|
| Lecture Homework | 10% |
| Lab Homework | 10% |
| Lab Project | 25% |
| Mid-term I | 15% |
| Mid-term II | 15% |
| Final Exam | 20% |
| Lecture Participation | 5% |

**Lecture/Lab Homework**
All homework will be assigned and submitted electronically through HuskyCT. No paper submission will be accepted. The deadline for submission of each homework is 11:59 PM on the day it is due unless otherwise specified in the course schedule. **The lowest homework (lecture as well as lab) grade will be dropped from the overall grade calculation.** Please note that no homework will be accepted past the deadline. However, I understand that unavoidable circumstances happen in our life. So, if you cannot submit one homework by the deadline for some reason, you may use the drop for such a case.

**Lab Projects**
Projects submitted late will be penalized by a 10% deduction per day up to three days past the due date, unless you have contacted the instructor and made special arrangements. No projects will be accepted for credit after three days past the due date. Exceptions to this rule require instructor approval and must be made prior to the assignment's due date.

**Mid-term Exams**
Because of the ongoing pandemic, all exams will be administered electronically via HuskyCT. No exceptions. The exams will be **open book/open notes**. No makeup exams will be offered.

**Final Exam**
The cumulative final exam will be administered remotely via HuskyCT. Students are required to be available for the final exam as scheduled by the Registrar's office. If a student thinks they cannot take the final exam during the designated time slot, then they must contact the Dean of Students (DOS) Office well in advance. The DOS will give the student further instructions regarding their final exam. The final exam will be **open book/open notes**.

**Class Participation (Lecture)**
The class participation will be graded using iClicker (REEF application or Remote). The grades will be based on actual participation and not on correctness of the answers. If there are multiple activities in one class, only one activity will be counted toward participation for that day.

For additional information on undergraduate grading policies see here: https://registrar.uconn.edu/grades/

**Grading Scale:**

| Grade | Letter Grade | GPA |
|---|---|---|
| 93-100 | A | 4.0 |
| 90-92.9 | A- | 3.7 |
| 87-89.9 | B+ | 3.3 |
| 83-86.9 | B | 3.0 |
| 80-82.9 | B- | 2.7 |
| 77-79.9 | C+ | 2.3 |
| 73-76.9 | C | 2.0 |
| 70-72.9 | C- | 1.7 |
| 67-69.9 | D+ | 1.3 |
| 63-66.9 | D | 1.0 |
| 60-62.9 | D- | 0.7 |
| <60 | F | 0.0 |

**Class Policy**

The lectures in this course build on the previous class' lecture. Hence regular attendance is strongly recommended to understand the processes taught. The student is responsible for the material taught in a class not attended. Your grade will be influenced by your participation in the class.

Lab attendance is strongly recommended. The student is responsible for the material taught in a lab not attended.

**Due Dates and Late Policy**

All course due dates are identified in the lecture schedule as well as the lab schedule below. Deadlines are based on Eastern Time unless otherwise specified. *The instructor reserves the right to change dates accordingly as the semester progresses. All changes will be communicated in an appropriate manner.*

**Feedback and Grades**

I will make every effort to provide feedback and grades in 10 days from the submission date. To keep track of your performance in the course, please refer to My Grades in HuskyCT.

**Weekly Time Commitment**

You should expect to dedicate 9 hours a week to this course. This expectation is based on the various course activities, assignments, and assessments and the University of Connecticut's policy regarding credit hours. (More information related to hours per week per credit can be accessed at the Online Student website).

**Student Authentication and Verification**

The University of Connecticut is required to verify the identity of students who participate in distance learning and online courses and to establish that students who register in an online course are the same students who participate in and complete the course activities and assessments and receive academic credit. Verification and authentication of student identity in this course will include the following:

1. The course will use HuskyCT as the primary repository and access point for course content, assessment, and activities, and students will use their NetID and password process to securely access course content/ assessments.

2. During the virtual student hours, the instructor may ask for identification and/or confirm student identity via the student's official UConn photo in StudentAdmin. You must therefore enable a camera when participating in any meeting for the course remotely. If this is an issue for you, please contact the instructor.

## Course Outline and Schedule

The course schedule is tentative. It is updated weekly based on the actual progress. Any item past today's date is only planned and may be subject to change. Actual assignment due dates will be posted on HuskyCT.

**Lecture Schedule**

| Week | Date | Day | Topic | Chapter | Assessment Open | Assessment Due |
|---|---|---|---|---|---|---|
| 1 | 1/20 | W | Introduction (all sections remote) | | | |
| 2 | 1/25 | M | Contours/ Interpolation and Slope (all sections remote) | 3 & 4 | | |
| | 1/27 | W | --do-- (all sections remote) | | | |
| 3 | 2/1 | M | Class canceled (due to snowstorm) | | | |
| | 2/3 | W | Interpolation and Slope | 4 | HW1 | |
| 4 | 2/8 | M | Grading Design and Process | 5 & 6 | | |
| | 2/10 | W | --do-- | | | HW1 |
| 5 | 2/15 | M | Soils in Construction | 7 | HW2 | |
| | 2/17 | W | Earthwork | 8 | | |
| 6 | 2/22 | M | --do-- | | | HW2 |
| | 2/24 | W | Mid-term I | | | |
| 7 | 3/1 | M | Earthwork | 8 | HW3 | |
| | 3/3 | W | Stormwater management | 9 & 10 | | |
| 8 | 3/8 | M | --do-- | | | |
| | 3/10 | W | Calculations of Rates and Volumes of Runoff | 12 | | HW3 |
| 9 | 3/15 | M | --do-- | | | |
| | 3/17 | W | --do-- | | HW4 | |
| 10 | 3/22 | M | --do-- | | | |
| | 3/24 | W | Designing and sizing stormwater management systems (swales and pipes) | 14 | HW5 | HW4 |
| 11 | 3/29 | M | --do-- | | | |
| | 3/31 | W | --do-- | | | |

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|---|---|---|---|---|---|---|
| 12 | 4/5 | M | --do-- | | | HW5 |
| | 4/7 | W | Mid-term II | | | |
| 13 | 4/12 | M | Spring Recess | | | |
| | 4/14 | W | Spring Recess | | | |
| 14 | 4/19 | M | Planning & Zoning (all sections remote) | | HW6 | |
| | 4/21 | W | --do-- (all sections remote) | | | |
| 15 | 4/26 | M | --do-- (all sections remote) | | | HW6 |
| | 4/28 | W | Review for final (all sections remote) | | | |
| | 4/29 - 5/2 | | Reading Days | | | |
| | 5/3 - 5/8 | | Final examinations week | | | |

**Lab Schedule**

| Week | Date | Topic | HW | Project |
|---|---|---|---|---|
| 1 | 1/19 | No lab session | | |
| 2 | 1/26 | No lab session | | |
| 3 | 2/2 | Introduction to MicroStation – Map Alignment<br>(001L/002L - 02/09/2021) | Lab HW1<br>(001L - due 2/15)<br>(002L - due 2/15)<br>(003L - due 2/8) | |
| 4 | 2/9 | Site Analysis with OpenRoads<br>(001L/002L - 02/16/2021) | Lab HW2<br>(001L - due 2/17)<br>(002L - due 2/17)<br>(003L - due 2/10) | |
| 5 | 2/16 | Make-up lab sessions for 001L and 002L<br>No lab session for 003L | | |
| 6 | 2/23 | OpenRoads: Importing elevation data from USGS | Lab HW3<br>(due 2/24) | |
| 7 | 3/2 | OpenRoads: Creating Proposed Surfaces | Lab HW4<br>(due 3/3) | |
| 8 | 3/9 | No lab session - Work on Project 1 | | Project part 1 DUE on Mar 15th |
| 9 | 3/16 | Modeling Roadways in OpenRoads | | |
| 10 | 3/23 | Introduction to AutoCAD | | |
| 11 | 3/30 | Site Design with AutoCAD | Lab HW5<br>(due 3/31) | |

| | | | | |
|---|---|---|---|---|
| 12 | 4/6 | Site Design with AutoCAD part II | Lab HW6 (due 4/7) | |
| 13 | 4/13 | Spring Recess | | |
| 14 | 4/20 | No lab session - Work on Project 2 | Lab HW7 (due 4/21) | Project part 2 DUE on April 25th |
| 15 | 4/27 | Make-up lab session | | |

## How to Succeed in this Course

All students can succeed in this course and we are here to help you along the way. Please do not hesitate to ask questions or attend office hours. All questions are important here. Success in this course depends heavily on your personal health and well-being. Recognize that stress is an expected part of the college experience, and it often can be compounded by unexpected setbacks or life changes outside the classroom. Your teaching assistants and I strongly encourage you to reframe challenges as an unavoidable pathway to success. Reflect on your role in taking care of yourself throughout the semester, before the demands of exams and projects reach their peak. Please feel free to reach out to me about any difficulty you may be having that may impact your performance in your courses or campus life as soon as it occurs and before it becomes too overwhelming. In addition to your academic advisor, I strongly encourage you to contact the many other support services on campus that stand ready to assist you. Some of the services are listed below:

Dean of Students Office,
Academic Achievement Center,
Writing Center,
Quantitative Learning Center,
Center for Students with Disabilities,
Title IX Office,
Student Health and Wellness -- Mental Health.

## Husky Study Groups

Are you interested in forming a study group with other students in the class? There is a study group application in Nexus that can help you get started. Please watch this video and click here for more information.

## Resources for Students Experiencing Distress

The University of Connecticut is committed to supporting students in their mental health, their psychological and social well-being, and their connection to their academic experience and overall wellness. The university believes that academic, personal, and professional development can flourish only when each member of our community is assured equitable access to mental health services. The university aims to make access to mental health attainable while fostering a community reflecting equity and diversity and understands that good mental health may lead to personal and professional growth, greater self-awareness, increased social engagement, enhanced academic success, and campus and community involvement.

Students who feel they may benefit from speaking with a mental health professional can find support and resources through the **Student Health and Wellness-Mental Health** (SHaW-MH) office. Through SHaW-MH, students can make an appointment with a mental health professional and engage in confidential conversations or seek recommendations or referrals for any mental health or psychological concern.

Mental health services are included as part of the university's student health insurance plan and also partially funded through university fees. If you do not have UConn's student health insurance plan, most major insurance plans are also accepted. Students can visit the **Student Health and Wellness-Mental Health located in Storrs on the main**

**campus in the Arjona Building, 4th Floor,** or contact the office at **(860) 486-4705, or** https://studenthealth.uconn.edu/ for services or questions**.**

## Accommodations for Illness or Extended Absences

Please stay home if you are feeling ill and please go home if you are in class and start to feel ill. If illness prevents you from attending class, it is your responsibility to notify me as soon as possible. You do not need to disclose the nature of your illness, however, you will need to work with me to determine how you will complete coursework during your absence.

If life circumstances are affecting your ability to focus on courses and your UConn experience, students can email the Dean of Students at dos@uconn.edu to request support.

COVID-19 Specific Information: People with COVID-19 have had a wide range of symptoms reported – ranging from mild symptoms to severe illness. These symptoms may appear 2-14 days after exposure to the virus and can include:

- Fever,
- Cough,
- Shortness of breath or difficulty breathing
- Chills
- Repeated shaking with chills
- Muscle pain
- Headache
- Sore throat
- New loss of taste or smell

Additional information including what to do if you test positive or you are informed through contract tracing that you were in contact with someone who tested positive, and answers to other important questions can be found here: https://studenthealth.uconn.edu/updates-events/coronavirus/

## Mask and Social Distancing Expectations

To ensure a safe learning environment for everyone, masks/face coverings must be worn at all times when in the classroom. If a student is not wearing a mask/face covering, they will be asked by the instructor to put one on immediately or leave the classroom. Repeatedly failing to follow this expectation will result in a referral to Community Standards. If an instructor is not wearing a mask/face covering, students should feel comfortable asking the instructor to put one on immediately. More information about proper usage of masks is available from UConn Environmental Health and Safety at this link.

Additionally, we will observe 6 feet of physical distancing in the classroom at all times. Please make sure to sit only in chairs or desks that are marked with a green circle and checkmark, and do not rearrange furniture or stickers. The University has arranged classrooms and seating to maintain physical distancing. Using these visual cues will help keep us all safe. Activities that involve temporarily removing the mask, such as eating or drinking are not allowed. Please leave the classroom for such activities.

## Classroom/Virtual Classroom Guidelines

### Recording Lectures

Classes for this semester's course will be conducted in-person and livestreamed synchronously to the DL section students over WebEx. As the host, I may record these sessions using WebEx's recording feature. I will let the class know at the beginning of a session if I plan to record the session. The recording feature for others in attendance will be disabled so that no one else will be able to record a session. In order to protect student privacy and intellectual property rights, students are prohibited from recording any session, or any portion of a session, by other means. At my discretion and in accordance with University policies and guidelines, I may share one or more of the recorded sessions with the class to provide students with an additional opportunity to review course content. The sharing of any recorded content without my written permission is prohibited. If you would like to ensure your likeness is not captured during an

online class, please turn your camera off. For recordings conducted in person, please alert me to any concerns so that I may take steps to help ensure you are not recorded.
Please remember that the unauthorized recording or sharing of course content may be considered a violation of the law, University policy, and/or The Student Code.

The web-based video delivery of each class in this course is for sole use of the students enrolled in this course. Any other use of these class videos or any pictures or derivatives of the class videos without the written consent of the course's professor is prohibited.

## Student Responsibilities and Resources

As a member of the University of Connecticut student community, you are held to certain standards and academic policies. In addition, there are numerous resources available to help you succeed in your academic work. Review these important standards, policies and resources, which include:

- The Student Code
    - Academic Integrity
    - Resources on Avoiding Cheating and Plagiarism
- Copyrighted Materials
- Credit Hours and Workload
- Netiquette and Communication
- Adding or Dropping a Course
- Academic Calendar
- Policy Against Discrimination, Harassment and Inappropriate Romantic Relationships
- Sexual Assault Reporting Policy

## Students with Disabilities

The University of Connecticut is committed to protecting the rights of individuals with disabilities and assuring that the learning environment is accessible. Students who require accommodations should contact the Center for Students with Disabilities, Wilbur Cross Building Room 204, (860) 486-2020 or http://csd.uconn.edu/.

Blackboard measures and evaluates accessibility using two sets of standards: the WCAG 2.0 standards issued by the World Wide Web Consortium (W3C) and Section 508 of the Rehabilitation Act issued in the United States federal government." (Retrieved March 24, 2013 from Blackboard's website)

## Software/Technical Requirements (with Accessibility and Privacy Information)

The software/technical requirements for this course include:

- Equipment Recommendations (https://remotework.uconn.edu/equipment-recommendations/)
- HuskyCT/Blackboard (HuskyCT/ Blackboard Accessibility Statement, HuskyCT/ Blackboard Privacy Policy)
- Adobe Acrobat Reader (Adobe Reader Accessibility Statement, Adobe Reader Privacy Policy)
- Google Apps (Google Apps Accessibility, Google for Education Privacy Policy)
- Microsoft Office (free to UConn students through uconn.onthehub.com) (Microsoft Accessibility Statement, Microsoft Privacy Statement)
- Dedicated access to high-speed internet with a minimum speed of 1.5 Mbps (4 Mbps or higher is recommended).
- WebCam

**Privacy Statement**: For information on managing your privacy at the University of Connecticut, visit the University's Privacy page. NOTE: This course has NOT been designed for use with mobile devices.

## Help

Technical and Academic Help provides a guide to technical and academic assistance.

This course uses the learning management platform, HuskyCT. If you have difficulty accessing HuskyCT, you have access to the in person/live person support options available during regular business hours through the Help Center. You also have 24x7 Course Support including access to live chat, phone, and support documents.

## Student Technology Training

Student technology training is now available in a new HuskyCT short course created by students for students. It will prepare you to use the IT systems and services that you will use throughout your time at UConn, whether learning online or on-campus. It is available at https://lms.uconn.edu/ultra/courses/_80016_1/cl/outline .

## Minimum Technical Skills

To be successful in this course, you will need the following technical skills:

- Use electronic mail with attachments.
- Save files in commonly used word processing program formats.
- Copy and paste text, graphics or hyperlinks.
- Work within two or more browser windows simultaneously.
- Open and access PDF files.

## Evaluation of Course Experience

Students will be given an opportunity to provide feedback on their course experience and instruction using the University's standard procedures, which are administered by the Office of Institutional Research and Effectiveness (OIRE).

The University of Connecticut is dedicated to supporting and enhancing teaching effectiveness and student learning using a variety of methods. The Student Evaluation of Teaching (SET) is just one tool used to help faculty enhance their teaching. The SET is used for both formative (self-improvement) and summative (evaluation) purposes.

Additional informal formative surveys and other feedback instruments may be administered within the course.