

**University of Connecticut**  
**Department of Civil & Environmental Engineering**  
**CE 2410 Geomatics and Spatial Measurements**

**Fall Semester 2019**

**Laboratory Sections:**

Room: Castleman 136 or Castleman 117 (see Course Schedule in main course syllabus)

Lab 1: Tuesday 11am-2pm

Lab 3: Thursday 11am-2pm

Lab 5: Wednesday 11am-2pm

Lab 2: Tuesday 2pm-5pm

Lab 4: Thursday 2pm-5pm

**Teaching Assistants:**

Graduate

Robert Smith ([robert.3.smith@uconn.edu](mailto:robert.3.smith@uconn.edu))

Lab Sections 2, 4 and 5

Office Hour: M 3-4pm CAST136

Brendan Sodergren ([brendan.sodergren@uconn.edu](mailto:brendan.sodergren@uconn.edu))

Lab Sections 1, 2 and 3

Office Hour: F 11am-12pm CAST136

Asadul Tanvir ([asadul.tanvir@uconn.edu](mailto:asadul.tanvir@uconn.edu))

Lab Section 2

Office Hour: W 3-4pm CAST136

Undergraduate

Delaney Meyer ([delaney.meyer@uconn.edu](mailto:delaney.meyer@uconn.edu))

Lab Sections 3 and 5

Peter Purcell ([peter.purcell@uconn.edu](mailto:peter.purcell@uconn.edu))

Lab Sections 1 and 4

**Lab Overview:**

Active participation in lab is essential to the understanding of geomatics theory and practice. Laboratory sessions are designed to provide all students with first-hand experience: 1) using data collecting technologies (e.g., Total Station, data collector, GPS, automatic levels); 2) applying basic geomatics principles to determine the positions of geospatial features; and 3) implementing CAD and GIS software to visualize geospatial data.

Upon successful completion of the laboratory portion of the course, students will be able to:

- Use surveying and GPS equipment to collect geospatial data (e.g., measure angles and distances & position)
- Conduct differential leveling, traverse, topographic, and GPS positioning surveys
- Apply geomatics theory to solve for the positions of geospatial features
- Compute and minimize error in data collection events
- Plot and visualize data using CAD (MicroStation) and GIS (ArcGIS) software

**Lab Policies:**

- Your participation in the lab sessions is **MANDATORY** and will be assessed in your weekly lab score.
- **ALL STUDENTS ARE EXPECTED TO FOLLOW ALL SAFETY RULES AND REGULATIONS WHEN WORKING IN THE FIELD.**
  - Dress appropriately as labs will be held regardless of the weather.
    - Sturdy shoes or boots are preferred; however, sneakers are acceptable. Open toed shoes, high heels, sandals, and flip-flops are **prohibited** for safety reasons.
    - Rain jackets, umbrellas, hats, gloves, boots, and warm clothes may be necessary dependent on the weather.
  - Exercise caution at all times to avoid potentially dangerous situations for yourself and/or your fellow students.
  - When working in the field, students are expected to conduct themselves in a professional manner. Refrain from yelling or other disturbing behavior.
- Data collection requires teamwork. Know and respect your teammates.

- All members of the geomatics team must **equitably** share in the performance of tasks needed to complete each lab exercise.
- Lab sessions will begin each week with important announcements (e.g., lab objectives, field notebook guidelines, equipment overview). **Arrive to lab on time.**
- Each survey team will complete an equipment sign-out form at the start of each lab. This form will be checked when the equipment is returned to at the end of lab. You must finish all work and return all equipment 10 minutes prior to the end of your lab session.
- **Surveying equipment in this class costs thousands of dollars.** Follow handling/use instructions given before or during the labs.
  - o Any lost or damaged equipment will be noted and appropriate action will be taken (e.g., student responsible for the damage may be charged a replacement/repair fee).

### Evaluation:

#### Lab Exercise

Your weekly lab exercise grade will be based on attendance, participation, pre-lab quiz, and field notebook submission.

#### Attendance & Participation

- **Attendance is checked weekly.** Students who fail to attend a lab session will receive a **0** for the missed session.
  - o Students must attend their registered lab session.
  - o Arriving to lab more than 10 minutes late or leaving lab before the lab period is over will be considered an unexcused absence.
- Lab participation will be assessed weekly by your teaching assistants and teammates. **Students must fully participate in lab to earn full credit.**
  - o Students who attend lab and fail to participate will have points deducted from their lab score.

#### Pre-lab Assessment Quiz

- Students are expected to arrive to each lab fully prepared for the week's activities. Lab exercises, and associated materials (e.g., instructional videos), must be read/viewed prior to the start of lab.
- Students must complete a pre-lab assessment quiz prior to each lab session. The quiz will be based on the lab exercise document and required videos. Videos must be watched prior to taking the quiz.
- You will have **two** attempts to pass your pre-lab quiz. You must earn a score of 75% or higher to pass the quiz.
- Students must complete the pre-lab quiz **by the end of the day (11:59pm) on the day preceding their lab session** (e.g., by 11:59pm Monday for students attending lab on Tuesday).
- Students who fail to successfully complete their pre-lab quiz will **NOT** be allowed to participate in lab and will receive a 0 for the lab session.
- Lab exercises (and related videos) and pre-lab assessment quizzes will be available one week prior to the start of lab.

#### Field Notebook

- Lab exercises require the submission of your field notebook. Field notebook specifications will be provided at the start of each lab session. **Arrive to lab on time.**
- Field notebooks must be scanned and saved as a **single** pdf document.
- Scanned field notebooks must be uploaded to HuskyCT by the due date listed in the lab exercise, typically 48 hours after the completion of lab.
- Field notebook submissions **will NOT be accepted after the submission deadline.**

#### Lab Practical

- All students are expected to understand the proper use and operation of the data collection equipment used in this class.
- Students will be assessed on their ability to successfully set up and operate data collection equipment, namely a Total Station.
  - o The lab practical will take place in two parts. Students will complete part 1 during week 7 and part 2 during week 10 (or 11; see Course Schedule in main course syllabus).