# BCN3281C Construction Methods Lab FALL 2025

**M.E. Rinker Sr., School of Construction Management**

**University of Florida**

#### **2 cREDITS**

#### Class locations and meeting times

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| Class # | Section | Meeting Times | Location |
| 11171 | 0436 | M | Period 4 (10:40 AM - 11:30 AM) | RNK 0206 |
| R | Period 2 - 3 (8:30 AM - 10:25 AM) | Perry Yard |
| 11172 | 101H | M | Period 4 (10:40 AM - 11:30 AM) | RNK 0206 |
| W| Period 5 - 6 (11:45 AM - 1:40 PM) | Perry Yard |

Instructor: Aaron Costin, Ph.D., P.E.

[aaron.costin@ufl.edu](mailto:aaron.costin@ufl.edu)

Office Hours: RNK 324, Office hours will be posted on Canvas.

Course Communications: This course utilizes Canvas as a repository for all course material including lecture notes, quizzes, forms, tutorials, and grades. It is the student’s responsibility to take advantage of the university resources to learn how to utilize Canvas.

Periodically the instructor will communicate with the class via e-mails and announcements from Canvas. Please note: Do not communicate via canvas, and to ensure efficient communication, use the instructor’s e-mail: aaron.costin@ufl.edu.

Required Textbook: N/A

Reccommended Textbook: Crawford, Wesley. Construction Surveying and Layout. ISBN 978-0-9641421-1-6.

Materials and Supplies Fees: Lab fees are listed at https://one.uf.edu/soc/

Course Description*:* Develop student’s ability to operate up-to-date instruments such as total station, theodolite, automatic and laser levels along with traditional accessory equipment in the performance of routine building construction tasks requiring applications of plane surveying theories and technologies for vertical and horizontal control. Differential and laser leveling, traversing, slope staking, topographic mapping and building layout are examples of the tasks to be taught.

Course Objectives:

* Set-up and use of tapes/lines, auto-levels, and transit and level to establish and control horizontal and vertical placement of structures.
* Calculate field data/stadia for making topographic maps.
* Set-up the use of modern surveying equipment in construction industry (Total Station, GPS, etc.)
* Calculate basic geometry and trigonometry as they relate to field layout and measurement.

How This Course Relates to the Student Learning Outcomes

*SACS = Southern Association of Colleges and Schools*

*ACCE = American Council for Construction Education*

*SLO= Student Learning Outcome*

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| --- | --- | --- | --- | --- |
| SACS SLO | ACCE SLO | Course Learning Outcome (CLO) | Assignment(s) | Percent Students Passing with a minimum 70% |
| 1 | SLO 11 (DA) | Set-up basic equipment | Performance exams | 90% |
| 1 | SLO 11 (DA) | Calculate topographic maps | Semester final project | 90% |
| 1 | SLO 10/11  (I/DA) | Set-up total stations | Performance exams | 90% |
| 1 | SLO 11 | Calculate basic trigonometry | Homework and in-class assignments | 90% |

Upon graduation from an accredited ACCE 4-year program a graduate shall be able to:

1. Create written communications appropriate to the construction discipline.
2. Create oral presentations appropriate to the construction discipline.
3. Create a construction project safety plan.
4. Create construction project cost estimates.
5. Create construction project schedules.
6. Analyze professional decisions based on ethical principles.
7. Analyze construction documents for planning and management of construction processes.
8. Analyze methods, materials, and equipment used to construct projects.
9. Apply construction management skills as an effective member of a multi-disciplinary team.
10. Apply electronic-based technology to manage the construction process.
11. Apply basic surveying techniques for construction layout and control.
12. Understand different methods of project delivery and the roles and responsibilities of all constituencies involved in the design and construction process.
13. Understand construction risk management.
14. Understand construction accounting and cost control.
15. Understand construction quality assurance and control.
16. Understand construction project control processes.
17. Understand the legal implications of contract, common, and regulatory law to manage a construction project.
18. Understand the basic principles of sustainable construction.
19. Understand the basic principles of structural behavior.
20. Understand the basic principles of mechanical, electrical and plumbing systems

Instructional Methods: The course will be delivered in person. We will meet for the one-hour lecture period and for two-hour lab period to perform the take home lab synchronously with the class and instructors. All content will be delivered on Canvas. Students are responsible for the content of all reading materials whether or not the material is covered in class. STUDENTS are responsible for class preparation and performance.

## UF Policies:

**Accessing University Academic Policies and Campus Resources**

To support consistent and accessible communication of university-wide student resources, please use this link to academic policies and campus resources: <https://go.ufl.edu/syllabuspolicies>.

## Course Policies:

Attendance Policy: Attendance for lecture and labs is required and will be counted in the final grade. Attendance will be taken within the first 5 minutes of class and lab. Late attendance for labs can result in a reduction of the lab grade. Being late for class may count as an absence at the discretion of the instructor.

Quiz/Exam DAtes/Policies: All quizzes and exams are individual, and any assistance from others is a violation of the UF Honor Code. Dates will be posted on Canvas. Please refer to the attendance and make-up policy.

Make-up Policy: Anticipated absence due to Rinker events, competition teams, job interviews, career fair, or any other UF related events, must receive written approval by the instructor to be considered as excused. The student must notify the instructor at least one week prior to the anticipated excused absence to allow ample time for accommodations. In the event of an emergency or other issue that causes you to miss class, please follow the attendance policy. Failure to do so, or any absences without prior approval, will not be considered excused, and the make-up will not be allowed.

Pre-lab assignments are due the night prior to the start of the earliest lab section, or unless otherwise stated. Pre-lab assignments are individual. Most will be an online Canvas quiz.

Labs are group assignments. Lab reports are due Friday at 11:59 pm (earlier submissions are accepted).  **A group may not be permitted to perform the lab unless all members are present.**

Late Work Allowing some persons extra time to complete assignments while others are on time is inherently unfair. Therefore: Late work may be penalized.

* -10% for each class period late. For example, if an assignment is due on Wednesday, and you do not turn it in, you have until the beginning of the next class (Monday) to turn it in for a -10% reduction. However, it is always better to turn in work late than not at all.
* Extenuating circumstances will be evaluated by the instructor on a case by case basis. Please contact the course professor as soon as you realize you have a concern.

Only one submission per assignment is allowed. They must be submitted through their respective tools in Canvas to receive credit, unless otherwise noted. Work submitted to the Course Instructor email, both personal and Canvas, will not receive credit.

### PLAGIARISM:

This course has been taught for many years and as a result there may be a temptation to “rely on the work of others.” Should the instructor determine that a student’s work is substantially similar to that of another (either past or present) the student may be subject to a rejection of that assignment and will be cited with an honor court violation. Similarly, the use of materials, worksheets, or data from previous semesters is considered cheating. The student understands that their work is subject to electronic verification by Turnitin® or other technologies.

### AI USAGE POLICY:

AI tools are encouraged to enhance efficiency, clarity, and creativity in your work. However, all tools must be used **responsibly**, **ethically**, and **transparently**.

* **Originality & Authenticity:** All submitted work must be your own. Any assistance from AI tools must be properly acknowledged.
* **Responsible Use**: Use AI tools to support—not replace—your critical thinking and personal contribution.
* **Attribution**: Clearly indicate which AI tools were used and how they contributed to your work.
* **Academic Integrity**: Unauthorized use of AI tools or submission of AI-generated content without disclosure will be considered plagiarism and may result in disciplinary action.

By using AI tools, you agree to uphold these standards and contribute to a culture of integrity and innovation.

Class Demeanor or Netiquette: All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats. Appropriate actions described by UF is any improper behavior occurs.

Course Technology: Students are responsible to report any issues regarding the content and material in this course. Since there are live links and web pages, it is possible that certain links may have been deleted or modified, causing the information to not be loaded properly. Just because a link is broken, doesn't mean you can bypass the information, as it will still be on the quizzes and exams*.*

You must have a computer with Internet access and a supported web browser.

Canvas supports the last two versions of every browser release. We highly recommend updating to the newest version of whichever browser you are using, as well as the most up-to-date Flash plug-in. For best performance, Canvas should be used on the current or first previous major release of Chrome, Firefox, Edge, or Safari. Because it's built using web standards, Canvas runs on Windows, Mac, Linux, iOS, Android, or any other device with a modern web browser.

Canvas only requires an operating system that can run the latest compatible web browsers. Your computer operating system should be kept up to date with the latest recommended security updates and upgrades. For technical support, please contact UF Computing Help Desk.

Online course evaluation (Required): Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations.

## Grading Policies:

### Methods by which students will be evaluated and their grade determined

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| Description | % Final Grade |
| Pre-Labs (Individual) | 25 |
| Labs (Group and Individual) | 30 |
| Exams (Individual) | 25 |
| Attendance (Individual) | 5 |
| Final Project (Group) | 15 |

Rubrics will be posted on Canvas. It is expected that everything submitted for a grade will be professional with correct spelling and grammar. When available use software to produce your work. The goal is for all work to represent what you would fax/submit to your immediate boss in a job scenario. All work will be accepted via e-learning as an upload file/scanned. You are responsible for addressing grades/omissions within one week of the grade being posted on e-learning. After one week the grade/input stands for the class regardless of cause or circumstance

Grading Scale: Grades will be given according to the following scale. **Decimal points in the final grade will not be rounded.**

A         93.0-100  
A-        90.0-92.99  
B+       87.0-89.99  
B         83.0-86.99  
B-        80.0-82.99  
C+       77.0-79.99  
C         73.0-76.99  
C-        70.0-72.99  
D+       67.0-69.99  
D         63.0-66.99  
D-        60.0-62.99  
E         Less than 60

## Course Schedule:

Critical Dates: **Final Exam:** 12/10/2025 @ 3:00 PM - 5:00 PM

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| --- | --- |
| Week | Topic |
| 1 | Introduction to Surveying |
| 2 | Elevations and Distances |
| 3 | Differential Leveling, Level Loop, and Traversing |
| 4 | Profile |
| 5 | Total Station Set Up |
| 6 | Performance Exam 1 |
| 7 | Survey Technology |
| 8 | As-Builts |
| 9 | Coordinate Geometry |
| 10 | Layout Procedures |
| 11 | Liability |
| 12 | Final Project Layout |
| 13 | Performance Exam 2 |
| 14 | Thanksgiving Break |
| 15 | Makeups |
| 16 | Makeups |

\*Disclaimer: As we go through the semester, those plans may need to change to enhance the class learning opportunity.  Such changes, communicated clearly, are not unusual and should be expected. The instructor reserves the right to modify the course schedule and modules as deemed fit. If any questions, issues, or concerns about the course (assessment, policies, schedule, etc.), please contact the instructor to remedy any issue.