

CONSTRUCTION METHODS LAB

BCN3281C

2 CREDITS

FALL/2021

CLASS LOCATIONS AND MEETING TIMES

| Class # | Section | Meeting Times | Location |
|---------|---------|---------------------------------------|----------|
| 11788 | 0436 | T Period 6 (12:50 PM - 1:40 PM) | RNK 0140 |
| | | R Period 2 - 3 (8:30 AM - 10:25 AM) | RNK 0140 |
| 11789 | 101H | T Period 6 (12:50 PM - 1:40 PM) | RNK 0140 |
| | | R Period 6 - 7 (12:50 PM - 2:45 PM) | RNK 0140 |

INSTRUCTOR Aaron Costin, Ph.D

RNK 323
aaron.costin@ufl.edu
904-497-0689

OFFICE HOURS: Office hours will be posted on Canvas.

COURSE TA: Peyman Rahgozar, TA, peymanrahgozar@ufl.edu, RNK 328

COURSE WEBSITE:

<https://ufl.instructure.com/courses/435694>

COURSE COMMUNICATIONS: All communication with the course instructor and TA will take place within Canvas. To contact the course instructor, use Inbox/Conversations tool and select the teacher's name from the address book. Please cc all TAs in all course related communications. ALL e-mails will be sent/received within Canvas. You should NOT be e-mailing the course instructors outside of the system. Any emails received outside of Canvas will not receive a response (only in an emergency or last resort should you contact the instructor's UF email).

REQUIRED TEXTBOOK: Crawford, Wesley. Construction Surveying and Layout (Current). ISBN 978-0-9641421-1-6.

MATERIALS AND SUPPLIES FEES: Lab fees are listed at <https://one.uf.edu/soc/>

ADDITIONAL RESOURCES: N/A

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.]

PREREQUISITE KNOWLEDGE AND SKILLS: Senior 2 /Grad Student in good standing

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

| 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 live and 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. Homework assignments should be done before the class in which they will be discussed. 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.

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.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

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.

Requirements for class attendance, make-up exams, assignments, and other work in this course are consistent with university policies that can be found at

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

ASSIGNMENT POLICY:

Homework is due prior to each Lecture class. Homework assignments are individual. Most will be an online Canvas quiz. These will close at the start of the Lecture and will not be reopened.

Pre-lab assignments are due 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. These will close at the start of the earliest lab section and will not be reopened.

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 assignments may not be accepted at the discretion of the instructor. Proper documentation must be provided for make-up assignments.

Only one submission per quiz/ discussion/ term paper/ exam/ extra credit is allowed. They must be submitted through their respective tools in Canvas to receive credit. Work submitted to the Course Instructor through Canvas email will not receive credit.

Grace Period: Due to the nature of being submitting assignments online, it is possible to have various technology-related issues with submitting the required work on time by the due date. To deal with this, a 12-hour grace period has been implemented after the due date. This means that the online submissions will accept anything 12 hours passed the deadline. Although it will display as "late", it will neither be counted against nor will points be deducted. This is to allow for any glitches that may happen when submitting. Do not see this as "extra time" to do the actual assignment, because once the submission has closed after the grace period, assignments will not be accepted. Assignments are still due by the posted due date.

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.

- <http://helpdesk.ufl.edu>
- (352) 392-HELP - select option 2

ONLINE COURSE EVALUATION (REQUIRED): Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semesters, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>.

UF POLICIES:

UNIVERSITY POLICY ON ACCOMMODATING STUDENTS WITH DISABILITIES: “Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.”

UNIVERSITY POLICY ON ACADEMIC CONDUCT: UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

CLASS DEMEANOR AND NETIQUETTE: All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats. Students are expected to log in to class 5 minutes prior to the start time. Students must behave in a manner that is respectful to the instructor and to fellow students. Please

mute yourself all times, unless asking a question, to avoid unnecessary interruptions. Opinions held by other students should be respected in discussion, and conversations that do not contribute to the discussion should be held at minimum, if at all. Rude and disrespectful behavior will not be tolerated, and the instructor holds the right to kick out someone from the virtual meeting if deemed acting inappropriate. Conduct that is deemed to be in violation with University rules and regulations or the Code of Student Conduct will result in a report to the Director of Student Conduct and Conflict Resolution for a conduct code infraction.

GETTING HELP:

For issues with technical difficulties for Canvas, please contact the UF Help Desk at:

- <http://helpdesk.ufl.edu>
- (352) 392-HELP (4357)
- Walk-in: HUB 132

Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from the Help Desk when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

Other resources are available at <http://www.distance.ufl.edu/getting-help> for:

- Counseling and Wellness resources
- Disability resources
- Resources for handling student concerns and complaints
- Library Help Desk support

(Required) Should you have any complaints with your experience in this course please visit <http://www.distance.ufl.edu/student-complaints> to submit a complaint.

GRADING POLICIES:

METHODS BY WHICH STUDENTS WILL BE EVALUATED AND THEIR GRADE DETERMINED

| Description | % Final Grade |
|-------------|---------------|
|-------------|---------------|

| | |
|-----------------------------|----|
| Homework (Individual) | 15 |
| Pre-Labs (Individual) | 15 |
| Labs (Group and Individual) | 30 |
| Exams (Individual) | 20 |
| 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. With regard to homework, pre-lab, and lab assignments that are turned in; the following grading system applies: – 10 points is for going above of what is asked, 8-9 points for meeting the minimum of what is expected, 5-7 points for quality work that may not be correct in scope. 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

INFORMATION ON CURRENT UF GRADING POLICIES FOR ASSIGNING GRADE POINTS:

- <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

GRADING SCALE:

Grades will be given according to the following scale. Divide the total points you earn by total possible points. **Decimal points 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: *There are no midterms or final exams. Class schedule will be posted on Canvas.*

A WEEKLY SCHEDULE OF TOPICS AND ASSIGNMENTS*:

| Week | Topic | Assignment |
|------|---|------------------------|
| 1 | Welcome and Introduction to surveying | Pre Lab, lab |
| 2 | Geometry and Angles | Homework, Pre lab, Lab |
| 3 | Chaining, Length Corrections, and Pacing | Homework, Pre lab, Lab |
| 4 | Performance Exam 1 | |
| 5 | Liability | Homework, Assignment |
| 6 | Elevations and Distances | Homework, Pre lab, Lab |
| 7 | Differential Leveling, Level Loop, and Traversing | Homework, Pre lab, Lab |
| 8 | Vertical Angles and Profile | Homework, Pre lab, Lab |
| 9 | As-Built and Technology | Homework, Pre lab, Lab |
| 10 | Performance Exam 2 | |
| 11 | Coordinate Geometry | Homework, Pre lab, Lab |
| 12 | Robotic Total Station | Homework |
| 13 | Layout Procedures and Project Overview | Homework, Pre lab, Lab |
| 14 | Break | |
| 15 | Final Project Overview | |
| 16 | Final Quiz - Laptops required; Make ups | |

*Disclaimer: This syllabus represents the current plans and objectives. 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.

Last update: 8/23/21