

CONE 410: Project Scheduling Fall 2020 3 Credit Hours

Instructor: Mostafa Batouli, PhD, MPA, PMP

Office: 311 LeTellier Hall

Office Hours: MWF 9:30 – 11:00, TR 11:00-12:00

Virtual Office Hours: MW 13:00 – 15:00 by appointment via Zoom

Class Time(s): MWF 11:00 – 11:50, LH 204

Phone: (843) 953-1390

Email: sbatouli@citadel.edu

Open Door Policy: My students are my priority. You are welcome to knock on my door at any time. Also, you can email me any time and I will respond to your questions/concerns as soon as I can. You are strongly encouraged to seek additional assistance outside of class.

COURSE OVERVIEW

Prerequisites: CONE 311 – Resource Estimating

Course Description: An introduction to construction project scheduling covering concepts of project selection and scheduling, utilizing the estimate to predict the schedule, scheduling subcontracting, cost controls, project documentation, construction bonds, insurance, payments and the elements of close out.

Course Learning Outcomes: Upon completion of this course, students should be able to:

Course Learning Outcome (CLO)
1. Prioritize tasks based on their importance and urgency using Time Management Matrix.
2. Compare the advantages and disadvantages of different scheduling techniques.
3. Create a bar chart schedule for a construction activity.
4. Discover critical path for completion of a construction project.
5. Manage time and space buffer in horizontal projects using linear scheduling.
6. Compress schedule via fast tracking or crashing.
7. Identify other scheduling methods including Activity on Arrow and PERT.

Required Textbook/Materials: The following textbooks are REQUIRED for this course:

Newitt, Jay S. Construction scheduling: principles and practices. Second Edition, Pearson Higher Ed, 2011.

Hinze, Jimmie W. Construction planning and scheduling. Fourth Edition, Pearson Higher Ed, 2011.

These textbooks are available at the Citadel book store. They are also available from the online book stores such as Barnes & Noble and Amazon.com.



Important note: not all the chapters in the required textbooks will be covered in the course. Selected topics will be covered and presented in the class notes. In addition, materials from other references will be covered in the lectures. The Required reading in tentative course schedule is based on Newitt 2011.

Course Format: This is a three lecture hours per week class that requires active student participation. Students are expected to read the relevant chapters from the textbook *before* coming to class. During class time, students will be assigned in-class activities and drills to have hands-on practice of the material covered.

COURSE RESOURCES

Canvas /Citadel's Approved Learning Management System: Over the course of the semester, I may post reading notes, lesson plans, discussion prompts, self-guided lectures, grades, and other administrative information on the course Canvas site. Students must check Canvas each lesson for pertinent updates and other critical information.

COURSE POLICIES, EXPECTATIONS, AND REQUIREMENTS

COVID-19 Mandatory Mask Policy: While a mask order is in place, you are required to wear a mask while in the classroom and other academic buildings on campus. If you do not wear a mask, you will be asked to leave immediately and/or a disciplinary action will be taken..

Updated Contact Information: Students must update contact information at the start of each semester to ensure instructor-student communication outside of Canvas, if required.

Course Material: Course material is for the sole use of students currently enrolled in the course and not for redistribution to electronic file sharing sites (share drives, Chegg, Course Hero, etc.).

Disability Policy: The Citadel complies with Section 504 of the Rehabilitation Act and the Americans with Disabilities Act. Students with disabilities who seek accommodations must make their request through Services for Students with Disabilities in the Student Success Center (117 Thompson Hall, 843-953-6877) to verify their eligibility and to identify appropriate accommodations. Students should speak to his/her professor and also make requests for academic accommodations to services for students with disabilities so we can ensure these accommodations and facilitate student success. If you have an immediate access need, please reach out to your faculty immediately in person, via email, or during office hours. Students with short-term disabilities, such as a broken arm, can often work with instructors to minimize classroom barriers. In situations where additional assistance is needed, students should contact the Services for Students with Disabilities as noted above. Please know that accommodations are not retroactive, so avoid any delays.

Weather & Campus Emergencies: In case of adverse weather, or other campus emergency, critical information will be posted on the Bulldog Alert homepage, as well as pushed to email addresses and phone numbers of those people who have updated their contact information within the Bulldog Alerts section of the Lesesne Gateway (or Canvas).

If you have not yet updated your contact information, or set up course notifications within Canvas, you should do so immediately.

Continuity of Instruction (COI): During a pandemic or catastrophic event, and after all face-to-face instruction has been suspended, communication for our class will continue to take place through Citadel email and Canvas. In the event of such an emergency, check your Citadel email account and Canvas course announcements for instructions. The following areas will also adjust during COI:

1. Online Course Requirements

- Computer
- Reliable Internet connection and software (DSL, LAN, or cable connection desirable)
- Access to Canvas
- Webcam
- Scanning (possibly with smartphone)

2. Course Structure

This course will be delivered entirely online through the Citadel's Learning Management System, Canvas. You will need your Citadel CWID and password to login to the course from the Canvas home page (<https://lesesnegateway.citadel.edu/cp/home/displaylogin>).

3. Technical Assistance

If you need technical assistance at any time during the course or to report a problem you can:

- Email the Center for Excellence and Innovation in Teaching, Learning, and Distance Education (CEITL &DE) at ceitlde@citadel.edu
- Visit the Canvas tutorials found in your Citadel Online Student Resource course, or visit the HELP MENU in your course navigation bar.

4. Email

In this course we will use Canvas to send emails to your Canvas email account. Please check your messages regularly.

- Assignments will not be accepted via email.
- Check your Citadel email frequently and at least once daily.

5. Discussion Forums

Discussion Forums are a way for you to engage with each other about the course content. Each lesson module will have a question that links to a forum. You can also access each forum by clicking on the Discussion Board link in the course navigation menu. In order to get full credit for each discussion, you will need to post a thoughtful, well-written response to the prompt and follow the criteria outlined on the forum rubric.

6. Virtual Office Hours

All of my office hours will be held virtually during COI.

7. Attendance Policy:

Distance education (online) students are subject to The Citadel's attendance policy. Attendance in a distance education (online) course is defined by active participation. Logging into Canvas does not qualify as sufficient evidence of attending as per federal financial aid guidelines, and nonattendance may affect financial aid and/or veterans' benefits. Completion of tests, submission/completion of assignments, and participation in discussion forums are activities used to document enrollment.

(Note: logging into the course does not qualify as participation and will not be counted as meeting the attendance requirement). Students who have not documented enrollment and participation by the end of the official drop/add period will be administratively dropped from the roll as "never attended."

Students who fail to maintain active participation throughout a distance education (online) course also may be administratively dropped after the official add-drop date without the possibility of

reimbursement. For this purpose, an unexplained absence from the course for more than two weeks is considered “non-participation.”

8. Complete Assignments

All assignments and discussions for this course will be submitted electronically through Canvas unless otherwise instructed. Assignments and discussions must be submitted by the given deadline or special permission must be requested from instructor before the due date. Extensions will not be given beyond the next assignment except under extreme circumstances. Late or missing assignments and discussions will affect the student’s grade.

Code of Conduct: Responsibility for professional conduct rests with students as adult individuals and as members of The Citadel community. CGC students and cadets are expected to conduct themselves as responsible adults. All members of the campus community are expected to use reasonable judgement in all aspects of campus life and activity and to show due concern for the welfare and rights of others. Students are expected to adhere to all federal, state, and local laws. The Citadel protects freedom of action and speech, so long as the exercise of this freedom is not of an inflammatory or demeaning nature and does not interfere with the operation of the College. The Citadel’s Conduct Policy prohibits the possession of drugs, destruction of property, making false statements of emergency situations, physical or verbal abuse, or harassment of any sort. Students who violate the rules and regulations of The Citadel are subject to expulsion or lesser sanctions. These rules and regulations are published in “Regulations for Non-Cadet Students for Fall and Spring Semester And All Students, Including Cadets, for Maymester or Summer School,” which can be found online at: http://www.citadel.edu/root/images/cgc/cgc_catalog/cgc-academic-catalog.pdf

Academic Integrity Statement: Students will submit only their own work for evaluation in this course, except as appropriately documented. All rules and stipulations of The Citadel’s Honor Manual and Honor Code apply to this course, including its definitions and policies related to cheating, lying, stealing, and non-tolerance. Cheating or evidence of academic dishonesty on any work submitted for evaluation will result in an "F" for both the assignment and the course. To ensure academic integrity, you must abide by both the letter and spirit of all honor, documentation, and citation requirements. Plagiarism in any form is unacceptable, as it fails to meet any standard of academic work. It is your responsibility to read and understand what constitutes intentional and negligent plagiarism. Plagiarism, intentional or negligent, may be referred as an honor violation. The complete Honor Manual may be found at: <http://krausecenter.citadel.edu/wp-content/uploads/2019/08/2019-2020-Honor-Manual-WEB.pdf> and the Honor Code can be found in the CGC Course Catalog: <http://www.citadel.edu/root/images/cgc/cgc-academic-catalog.pdf>

Student Use of Electronic Devices: Students may use laptop computers or tablets for taking notes so long as they do so in a manner that does not interfere with the learning of others. Students may not play games, work on other assignments, or use their electronic devices during class except for taking notes and/or completing instructor-assigned work.

Missed or Late Work Policy: Late assignments will not be accepted. However, on Amnesty Day (typically the last day of class) previously un-submitted, complete, and self-assessed assignments may be submitted for 50% credit. Furthermore, students who have not submitted all regular homework by Amnesty Day may not be permitted to take the final exam.

Attendance and Participation Requirements: I will record and report attendance for every class meeting. It is the student’s responsibility to arrive to class on time, and to maintain class attendance throughout the duration of the semester. With this in mind:

- Class attendance is mandatory.
- Students may miss class only for authorized reasons (athletic events, academic travel, special ceremonies, guard duties, etc.)
- Illness and personal emergencies may also cause students to be absent for legitimate reasons.
- Should a student miss class for any reason, he/she will make every reasonable effort to notify the professor in advance of the absence.
- The student will be responsible for any material covered in class.
- If a student knows he/she will be absent for an examination or on the due date of a major graded requirement, that student will coordinate with his/her instructor for completion/submission requirements.
- Active participation in class discussions and activities is an expectation of this course.

Assignments: Students are urged to actively participate in class discussions/activities. For this purpose, in-class activities and drills are held to help students better comprehend the discussed course materials and are included in the course final grade. In addition, homework will be assigned as the term progresses and is normally due in one week at the beginning of the class period, unless otherwise directed by the instructor. Late homework submissions are not accepted. There will be two pop quizzes, one midterm exam and one comprehensive final exam in this course. Make-up examinations will not be given unless an excused absence is approved ahead of time or in the event of a verifiable illness or emergency. Satisfactory performance in all these elements is required for successful completion of the course.

Course Grades:

The final grade for the course will be based on the student's understanding of the course material as evidenced by his/her performance on term project, examinations, assignments, and class participation in consonance with the following:

Course Requirement	# of Items	Total Points Available	Weight
Homework	10	300	30%
Midterm Exams	3	300	30%
Final Exam	1	300	30%
Plickers Quizzes	As needed	50	5%
Participation	-	50	5%
Total		1000	100%

These weights may be changed at the discretion of the professor to reflect the emphasis placed on the material presented during the course. All examinations, homework, and other student work are the intellectual property of the student, but may be retained by the professor. Examination dates are indicated in the Course Schedule, but are subject to change at the professor's discretion. It is the responsibility of the student to keep abreast of the class schedule. Absence from class will not be acceptable as a valid reason for missing a scheduled assignment such as a HW or an exam.

Grading Scale:

Final Grading is based on the following scale:

(A \geq 90%, B \geq 80%, C \geq 70%, D \geq 60%, F < 60%)

COURSE SCHEDULE

Note: Schedule subject to change. Additional reading/activities will be assigned as needed.

Class	Day	Date	Class Topic	HW Due	Corrections Due	Textbook
1	W	25-Aug	Class Introduction			Ch 1
2	F	27-Aug	Why Scheduling?			Ch 2
3	M	30-Aug	Time Management	Syllabus Quiz		
4	W	1-Sep	Time Management Matrix			
5	F	3-Sep	Basic Scheduling and Planning Techniques			Ch 3
6	M	6-Sep	Student Presentations: Scheduling and Planning Tools 1	HW 1		
7	W	8-Sep	Student Presentations: Scheduling and Planning Tools 2			
8	F	10-Sep	Student Presentations: Scheduling and Planning Tools 3			
9	M	13-Sep	Bar Chart Schedules 1- Creating a Bar Chart Schedule	HW 2		Ch 4
10	W	15-Sep	Bar Chart Schedules 2- Variations in Bar Chart Schedules			
11	F	17-Sep	CPM 1- Introduction to Critical Path Method			Ch 5
12	M	20-Sep	CPM 2- Creating Network Logic Diagram	HW 3		Ch 6
13	W	22-Sep	CPM 3- Determining Durations		HW 3 Corrections	Ch 7
14	F	24-Sep	CPM 4- Calculating Start and Finish Dates			Ch 8
15	M	27-Sep	CPM 5- Calculating Total Float and Identifying Critical Path	HW 4		Ch 9
16	W	29-Sep	CPM 6- Calculating Shared, Free, and Independent Float		HW 4 Corrections	
17	F	1-Oct	CPM 7- Calculating Negative Float			
18	M	4-Oct	CPM 8- Using Float to Help Manage Projects	HW 5		

19	W	6-Oct	Working Session		HW 5 Corrections	
20	F	8-Oct	Review for Exam 1			
21	M	11-Oct	Exam 1			
22	W	13-Oct	Using Lags in Network Logic Diagrams Finish to Finish, and Start-to-Finish Relationships			Ch 10
23	F	15-Oct	Calculating Start and Finish Dates With Lags			
24	M	18-Oct	Reviewing and Analyzing the Schedule	HW 6		Ch 11
	W	20-Oct			HW 6 Corrections	
25	F	22-Oct	Creating Bar Charts and Tabular Reports from Network Logic Diagrams			Ch 12
26	M	25-Oct	Linear or Line-of-Balance Schedule	HW 7		Ch 13
27	W	27-Oct	Buffer, Time, and Space			
28	F	29-Oct	Working Session			
29	M	1-Nov	Updating the Schedule	HW 8		Ch 14
30	W	3-Nov	Review for Exam 2		HW 8 Corrections	
31	F	5-Nov	Exam 2			
32	M	8-Nov	Schedule Compression Techniques: Crashing			Hinz
33	W	10-Nov	Schedule Compression Techniques: Fast Tracking			
34	F	12-Nov	Working Session			
35	M	15-Nov	PERT: Uncertainty in Activity Duration	HW 9		Hinz
36	W	17-Nov	PERT 2: Program Evaluation and Review Technique		HW 9 Corrections	
37	F	19-Nov	Activity on Arrow Diagrams			Ch 18

	M	22-Nov				
	W	24-Nov				
	F	26-Nov				
38	M	29-Nov	Other Scheduling Techniques: Short Interval Schedul, Hammock Activities, Constraints, Fenced Bar Charts, Graphic Schedules	HW 10		Ch 18
39	W	1-Dec	Review for Exam 3		HW 10 Corrections	
40	F	3-Dec	Exam 3			
41	M	6-Dec	Course Reflection			
42	W	8-Dec	Review for Final Exam			
Tuesday, December 14, 2021- 13:00-17:00				Final Exam		

DISCLAIMER

The course schedule is a plan. The professor reserves the right to make changes in the schedule. Students will be notified accordingly.

RIGHT TO REVISE

The instructor reserves the right to modify, solely at his discretion, the course content, and the number, format, and due dates of exams, assignments, quizzes, or projects as well as their weights that will be used to determine the final grade.