

Construction Planning and Scheduling

CCE 5035/CGN 4905

Zoom Class Periods: M 5-6 (1:55-4:55 pm) **Academic Term:** Fall 2020

Instructor:

Name: Dr. Fazil T. Najafi, Professor Email
Address: fnaja@ce.ufl.edu
Phone Number: Cell: (352) 870-2477
Office Hours: Thursday, 3:00 – 5:00 pm,
Please call or e-mail. I will respond by phone,
email, or zoom within 24 hours.

Teaching Assistant:

Suyash Bakliwal, suyashbakliwal@ufl.edu, Office
Hours: Thursday, 03:00 – 5:00 pm,
Contact: (352) 871-3135,
Please call or e-mail. I will respond by phone,
email, or zoom within 24 hours.

Course Description

Construction Planning and scheduling is a three-credit hours course. The course covers networks using precedence diagrams, Computer-based scheduling Primavera P6, activity Network Cash flow, Logically Reducing Project Duration, Resource Allocation and Resource leveling, Project monitoring, and control, Estimating activity and project durations using deterministic and probabilistic concepts, Linear Scheduling and its impact on productivity, Project coordination and progress payments, Short interval schedules.

Course Pre-Requisites / Co-Requisites

No pre-requisites are required

Course Objectives

The objectives of this course are to learn:

1. Basic concepts of construction planning and scheduling.
2. Schedule projects using deterministic and probabilistic approaches.
3. Use computer-based software Primavera P6, for Resource Allocation and Resource leveling.
4. Use Primavera P6 for Project monitoring and control.
5. Linear Scheduling and its impact on productivity
6. Project coordination and progress payments
7. Short interval schedules

Course Outcomes

1. The course will achieve the objectives mentioned above.
2. The course meets the ABET Outcome Number 1: "An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics."

Required Textbooks and Software

Construction Planning and Scheduling (Fourth Edition). Jimmie W. Hinze, ISBN-13: 978-0-13-247398-9
Application of software: Primavera P6, Excel, and AutoCAD.

Materials and Supply Fees

Not applicable

Course Schedule

Please see the **weekly schedule** excel sheet located in the files folder in CANVAS.

The schedule is tentative; I reserve the right to make changes at any point in time with prior consent or notification. If there is any change in the weekly schedule, there will be an announcement made by any of the following means: email, canvas, or during zoom lectures.

Attendance Policy, Class Expectations

Refer to the Evaluation of Grades. A one-page typed summary of Lectures and guest speaker's presentations (15% of the final grades) as a means of scoring attendance. For further information, refer to the Assignments and Homework section.

Evaluation of Grades

Assignment	Total Points	Percentage of Final Grade (%)
Attendance policy; A one-page typed summary of Lectures and guest speaker's presentations	100	15
7 Assignments	100	40
Term Project	100	30
Final Exam	100	15

Grading Policy

Percent	Grade	Grade Points
90.0 - 100.0	A	4.00
87.0 - 89.9	A-	3.67
84.0 - 86.9	B+	3.33
81.0 - 83.9	B	3.00
78.0 - 80.9	B-	2.67
75.0 - 79.9	C+	2.33
72.0 - 74.9	C	2.00
69.0 - 71.9	C-	1.67
66.0 - 68.9	D+	1.33
63.0 - 65.9	D	1.00
60.0 - 62.9	D-	0.67
0 - 59.9	E	0.00

For more information on the UF grading policy, refer to the following link.

<http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#grades>.

Najafi's Lectures and Guest Speakers:

This course will involve Dr. Najafi's regular lectures and guest speakers. One-page typed lecture summaries of Najafi's and guest speaker's presentations are due via Canvas each Sunday at noon. The one-page summaries should include subject title, the goal, and objective of the lectures, high lights of your learning, and conclusions with your own opinions and thoughts concerning the lectures and guest speaker's presentations.

Keep the summaries in bullet format. Dr. Najafi grade the summary as the class attendance.

Assignments:

All assignments are to be submitted to the proper tab on CANVAS before the deadline given. Late assignments will not be accepted. Include your name on all assignment documents. Save all files as Last Name(s)_Assignment Name. Grammar and formatting will be taken into account when grading.

Please allow one week for grading.

Homework:

Chapter questions will be assigned during the class periods and will be due, as indicated on the weekly schedule. Late homework submissions will not be accepted. Homework should be submitted as a pdf file on CANVAS and uploaded before the deadline given.

Group Work:

You will get to collaborate in groups to work **on the main project**. Each group should have a group leader. Group members are required to give member names, contact numbers, email addresses, and zoom links to each other so they may contact each other to work on the final project. Each group will be assigned a group number on CANVAS.

Communication expectations: Please be mindful that this class is preparing you for your future career. Students conduct professionally. Read the [Netiquette guide](#) for conduct expectations when communicating with your peers, Dr. Najafi, and your TA.

Textbook Chapters:

NOTE: Chapters are lectured based on the weekly schedule.

1. Introduction
2. Developing a network model
3. Precedence diagrams
4. Determining activity durations
5. Resource allocation and resource leveling
6. Money and network schedules
7. Project monitoring and control
8. Computer scheduling
9. Earned Value: A means for integrating costs and schedule
10. The impact of scheduling decisions on productivity
11. Short interval schedules
12. Linear Scheduling
13. PERT: Program evaluation and review technique
14. Arrow diagrams.

Technology Tip:

Make sure you are on the UF network. If not, make sure you have the Gator VPN.

Students Requiring Accommodations

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352- 392-8565, <https://www.dso.ufl.edu/drc>) by providing appropriate documentation. Once registered, students will receive an accommodation letter that must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Course Evaluation

Students expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback professionally and respectfully is available at <https://gatorevals.aa.ufl.edu/students/>. Students notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

University Honesty Policy

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 honor 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 the number of behaviors violations 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.

Commitment to a Safe and Inclusive Learning Environment

The Herbert Wertheim College of Engineering values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. Every person in this class expected that would treat one another with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:

Your academic advisor or Graduate Program Coordinator

- Robin Bielling, Director of Human Resources, 352-392-0903, rbielling@eng.ufl.edu
- Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, taylor@eng.ufl.edu
- Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, nishida@eng.ufl.edu

Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

For Technology help:

UF Computing Help Desk

- Available 24 hours a day, seven days a week
- Phone: (352) 392-HELP (4357)
- Email: helpdesk@ufl.edu
- Web: <https://helpdesk.ufl.edu/>

Student Privacy

Federal laws are protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see <http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html>.

Campus Resources:
Health and Wellness

U Matter, We Care:

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team, can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at (352) 392-1575. The U Matter, We Care Team can help connect students to the many other helping resources Wellness Center. Please remember that asking for help is a sign of strength. In case of an emergency, call 911.

Counseling and Wellness Center: <http://www.counseling.ufl.edu/cwc> and (352) 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies

Sexual Discrimination, Harassment, Assault, or Violence

If you or a friend subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the [Office of Title IX Compliance](#), located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, title-ix@ufl.edu

Sexual Assault Recovery Services (SARS)

Student Health Care Center, (352) 392-1161.

University Police Department at (352) 392-1111 (or 9-1-1 for emergencies), or <http://www.police.ufl.edu/>

Academic Resources

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu.

<https://lss.at.ufl.edu/help.shtml>.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling.

<https://www.crc.ufl.edu/>.

Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.

<https://teachingcenter.ufl.edu/>.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers.

<https://writing.ufl.edu/writing-studio/>.

Student Complaints Campus: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.

On-Line Students Complaints: <http://www.distance.ufl.edu/student-complaint-process>.

Construction Planning and Scheduling (CCE 5035)				
Weekly Class Schedule: Fall 2020				
Week #	Presenters	Content	Assigned Readings & Assignments	Assignments Due
1 08/31/20 20	Dr. Najafi, Suyash Bakliwa 1	<p>Course Goals and Objectives</p> <p>Chapter 1</p> <p>INTRODUCTION, p.1</p> <p>History of Scheduling, p.1</p> <p>Planning and Scheduling, p.2</p> <p>Bar Charts, p.3</p> <p>Shortcomings of Bar Charts, p.4</p> <p>The Sports Facility Project, p.5</p> <p>Value of Bar Charts, p.6</p> <p>Scheduling Networks, p.7</p> <p>Other Scheduling Approaches, p.8</p> <p>Work Breakdown Structure, p.8</p> <p>Reasons for Planning and Scheduling in Construction, p.13</p>	<p>1) Read Chapter 1 and 16 of Construction Planning and Scheduling (Fourth edition) by Jimmie W. Hinze (ISBN13: 978-0-13-247398-9), 2012</p> <p>2) Solve the review questions at the end of chapter 1</p> <p>3) Solve the review question 4 at the end of chapter 16.</p> <p>Assignment 1.a:</p> <p>Chapter 1 – (Review questions Pg. 14, 5 Questions) - 5Pts/Question = 25Pts Chapter 16 - (Pg. No. 243, Solve review problem 1) 50Pts/Question = 50Pts</p>	<p>Assignment 1.a is due on 09/10/2020 at 11:59am. Submit it on CANVAS.</p> <p>Additional Homework: One-page lecture summaries of Najafi's and guest speaker's presentations are due via Canvas each Sunday at 11:59am.</p>
		<p>Chapter 16</p> <p>ARROW DIAGRAMS, p.225</p> <p>Activity Relationships, p.225</p> <p>The i-j Notation of Activities, p.227</p> <p>Dummies, p.228</p>		

		Performing Time Calculations with Arrow Diagrams, p.232 Float Values, p.237 Understanding Free Float and Total Float, p.239 Computations for Different Activity Relationships, p.241 Term Project Topic: Planning, Scheduling and Construction of the Career Resource Center (At 3:00 PM)		
2 09/07/20 20	Labor Day Holiday	No Class		
3 09/14/20 20	Dr. Najafi, Suyash Bakliwa 1	Chapter 2 DEVELOPING A NETWORK MODEL, p.15 Steps in Building a Network Model, p.15 Defining Activities, p.15 Ordering Activities, p.16 Drawing the Network Diagram, p.19 Assigning Durations to Activities, p.20 Assigning Resources and Costs, p.21 Calculating Early and Late Start/Finish Times, p.21 Identify the Critical Path, p.21 Scheduling Activity Start/Finish Times, p.21	1) Read Chapter 2 of Construction Planning and Scheduling (Fourth edition) by Jimmie W. Hinze (ISBN13: 9780-13-247398-9), 2012 2) Solve the review question 13 at the end of chapter 16. 3) Solve the review questions at the end of chapter 2. Assignment 1.b: Chapter 16 - 1 Question from Pg. 246, Q 13 - 50Pts/Question = 50Pts Chapter 2 - 10 Questions - 2.5Pts/Question = 25Pts	Assignment 1.b is due on 09/20/2020 at 11:59am. Submit it on CANVAS. Additional Homework: One-page lecture summaries of Najafi's and guest speaker's presentations are due via Canvas each Sunday at 11:59am.

4 09/21/20 20	Dr. Najafi, Suyash Bakliwal	<p>Chapter 3 PRECEDENCE DIAGRAMS, p.23 Precedence (Activity-on-Node) Networks, p.23 Activity Relationships, p.23 Basics about Precedence Diagrams, p.29 Calculations on a Precedence Network, p.31 Independent Float and Interfering Float, p.35 Computations for Different- Activity Relationships, p.36</p>	<p>1) Read Chapter 3 of Construction Planning and Scheduling (Fourth edition) by Jimmie W. Hinze (ISBN13: 978-0-13-247398-9), 2012 2) Review questions from chapter 3 and do the following problems: 1 and 3 3) Dr. Najafi will explain how to draw Network (Precedence Diagram) using AutoCAD. 4) Basics of Primavera P6 (Handout)</p> <p>Assignment 2: Problem 1 (Pg. 38) = 25 Pts Problem 3 (Pg. 40) = 25 Pts</p> <p>Basic of Primavera P6 (Handout 1 PowerPoint with audio): 50Pts</p>	<p>Assignment 2 is due on 09/27/2020 at 11:59am. Submit it on CANVAS.</p> <p>Additional Homework: One-page lecture summaries of Najafi's and guest speaker's presentations are due via Canvas each Sunday at 11:59am.</p>
5 09/28/20 20	Dr. Najafi, Suyash Bakliwal	<p>Chapter 9 COMPUTER SCHEDULING, p.147 Computer Scheduling Terms, p.148 Scheduling Software, p.149 Oracle's Primavera P6 Professional Project Management, p.150 Oracle's Primavera SureTrak, p.150 Microsoft Office Project, p.150 Web-Based Programs, p.151 Creating a Schedule, p.151 Updating a Schedule, p.153 Presenting a Schedule, p.153 Useful Software Features, p.154 Sorting and Filtering, p.154 Global Editing, p.155 Cash Flow Analysis, p.155 Resource Leveling, p.155 Summary Tasks, p.155 Task Tracing, p.156 Linking to Other Project Management Software, p.156</p> <p>Guest speaker: Ms. Cydney McGlothlin and Justin Berry - UF Will present on the Application of P6 to the term project</p>	<p>1) Read Chapter 9 of Construction Planning and Scheduling (Fourth edition) by Jimmie W. Hinze (ISBN13: 978-0-13-247398-9), 2012 3) Solve the questions 1, 3, 6 and 12 from chapter 9.</p> <p>Assignment 3: Problem 1: 10Pts Problem 3: 10Pts Problem 6: 10Pts Problem 12: 10Pts</p>	<p>Assignment 3 is due on 10/04/2020 at 11:59am. Submit it on CANVAS.</p> <p>Additional Homework: One-page lecture summaries of Najafi's and guest speaker's presentations are due via Canvas each Sunday at 11:59am</p>
6 10/05/20 20	Dr. Najafi, Suyash Bakliwal	<p>Chapter 7 MONEY AND NETWORK SCHEDULES, p.109 Cash Flow, p.109 The Time Value of Money, p.109 Interest Rates, p.110 Contractor Cash Disbursements, p.110 Contract Provisions That Impact Cash Flow, p.111 Owner Policies and Practices That Impact Cash Flow, p.112 The Cash Flow Analysis, p.112 The Sports Facility Project, p.113 The Present Worth of Cash Flow, p.114 The Value of Cash Flow Analysis, p.115 Time-Cost Trade-Offs, p.117 Direct Costs, p.117 Indirect Job Costs (Job Overhead), p.117 Overhead (Company Overhead), p.117 Four Different Solutions for Each Network, p.119 Logically Reducing Project Duration, p.120</p>	<p>1) Read Chapter 7 of Construction Planning and Scheduling (Fourth edition) by Jimmie W. Hinze (ISBN13: 978-0-13-247398-9), 2012 2) Solve the questions 1 and 5 from chapter 7. 3) Logically Reducing Project Duration using P6 (Handout) 4) Logically Reducing Project Duration using Microsoft Excel.</p> <p>Assignment 4: Problem 1: 25Pts Problem 5: 25Pts</p> <p>Logically Reducing Project Duration (Handout 2 - PowerPoint with audio): 50Pts</p>	<p>Assignment 4 is due on 10/11/2020 at 11:59am. Submit it on CANVAS.</p> <p>Additional Homework: One-page lecture summaries of Najafi's and guest speaker's presentations are due via Canvas each Sunday at 11:59am.</p>

7 10/12/20 20	Dr. Najafi, Suyash Bakliwal	<p>Chapter 6 RESOURCE ALLOCATION AND RESOURCE LEVELING, p.73 The Management of Resources, p.73 When Resources Are Limited (Resource Allocation), p.74 The Manual Solution for Resource Allocation, p.74 The Brooks Method of Resource Allocation, p.81 When Project Duration Is Fixed (Resource Leveling), p.86 The Manual Solution for Resource Leveling, p.87 The Sports Facility Project, p.92</p>	<p>1) Read Chapter 6 of Construction Planning and Scheduling (Fourth edition) by Jimmie W. Hinze (ISBN13: 978-0-13-247398-9), 2012 2) Resource Allocation and Resource Levelling using P6 (Handout 3)</p> <p>Assignment 5: Resource Levelling Using P6 (Handout 3 - PowerPoint with audio): 100Pts</p>	<p>Assignment 5 is due on 10/18/2020 at 11:59am. Submit it on CANVAS.</p> <p>Additional Homework: One-page lecture summaries of Najafi's and guest speaker's presentations are due via Canvas each Sunday at 11:59am</p>
8 10/19/20 20	Dr. Najafi, Suyash Bakliwal	<p>Chapter 8 PROJECT MONITORING AND CONTROL, p.135 Construction Time, p.135 Effective Scheduling, p.136 Monitoring Project Status, p.136 Difficulties in Assessing Progress, p.139 Updating the Schedule, p.139 Controlling the Project, p.140 The Sports Facility Project, p.141 Recovery Schedules, p.141 As-Built Schedules, p.143</p> <p>Chapter 10 EARNED VALUE: A MEANS FOR INTEGRATING COSTS AND SCHEDULE, p.159 The Earned Value Concept, p.159 Difficulties in Integrating Cost and Schedule Systems, p.163</p>	<p>1) Read Chapter 8 and 10 of Construction Planning and Scheduling (Fourth edition) by Jimmie W. Hinze (ISBN13: 978-0-13-247398-9), 2012 2) Earned Value Concept problem using P6 (Handout)</p> <p>Assignment 6: Earned Value Concept (Handout 4 - PowerPoint with audio): 100Pts</p>	<p>Assignment 6 is due on 10/25/2020 at 11:59am. Submit it on CANVAS.</p> <p>Additional Homework: One-page lecture summaries of Najafi's and guest speaker's presentations are due via Canvas each Sunday at 11:59am</p>
9 10/26/20 20	Dr. Najafi, Suyash Bakliwal	<p>Chapter 4 DETERMINING ACTIVITY DURATIONS, p.45 Estimating, p.45 Types of Estimates, p.45 Conceptual Estimates, p.45 Detailed Estimates, p.45 CONTENTS Conducting a Detailed Estimate, p.45 Estimating Durations, p.49 Scheduling Issues, p.51 Factors Influencing Choice of Activity Schedules, p.51 Weather and the Schedule, p.52 Uncertainty in Duration Estimates, p.52 Final Comments, p.54 Review Problems, p.54</p> <p>Chapter 15 PERT: PROGRAM EVALUATION AND REVIEW TECHNIQUE, p.215 Uncertainty in Activity Duration Estimates, p.215 Uncertainty in the Duration Estimates of an Activity Chain, p.218 Uncertainty in the Duration Estimates of Projects, p.219 Monte Carlo Simulation, p.220</p>	<p>1) Read Chapter 4 of Construction Planning and Scheduling (Fourth edition) by Jimmie W. Hinze (ISBN13: 978-0-13-247398-9), 2012 Note: Cost Analysis (Handout 5 - PowerPoint with audio): 60Pts</p> <p>1) Read Chapter 15 of Construction Planning and Scheduling (Fourth edition) by Jimmie W. Hinze (ISBN13: 978-0-13-247398-9), 2012 2) Solve the questions 2, 3 and 6 from chapter 15.</p> <p>Assignment 7: Problem 2: 10Pts Problem 3: 10Pts Problem 6: 20Pts</p>	<p>Assignment 7 is due on 11/01/2020 at 11:59am. Submit it on CANVAS.</p> <p>Additional Homework: One-page lecture summaries of Najafi's and guest speaker's presentations are due via Canvas each Sunday at 11:59am.</p>

		Guest Lecture: James Schwartz (Term Project Guidance) (703) 509-7549 jpschwartz@ufl.edu		
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<p>10 11/02/20 20</p>	<p>Dr. Najafi, Suyash Bakliwa l</p>	<p>Chapter 14 LINEAR SCHEDULING, p.203 What Is Linear Scheduling? p.203 Example 1: Project to Replace a State Park Walkway, p.207 Production Rate Diagrams, p.207 Buffers, p.209 Generating the Linear Schedule, p.209 Example 2: Project to Construct 500 Tract Housing Units, p.210</p>	<p>1) Read Chapter 14 of Construction Planning and Scheduling (Fourth edition) by Jimmie W. Hinze (ISBN13: 978- 0- 13-247398-9), 2012</p>	
<p>11 11/09/20 20</p>	<p>Dr. Najafi, Suyash Bakliwal</p>	<p>Chapter 11 THE IMPACT OF SCHEDULING DECISIONS ON PRODUCTIVITY, p.169 Working Overtime, p.169 Increasing the Workforce (Crowding), p.171 Increasing the Number of Starting Points, p.172 Identifying the Causes of Delays, p.173 Interruption of Work on Multiple Units (Impact of Lost Learning), p.175 Learning Applied to Individual Units, p.176 Learning Applied to Cumulative Average Units, p.177 What Happens When Work Is Interrupted? p.178 Other Sources of Lost Productivity, p.179 Guest Lecture: Mathew Muller (Term Project Guidance) (305) 773-5481 mamuller@ufl.edu</p>	<p>1) Read Chapter 11 of Construction Planning and Scheduling (Fourth edition) by Jimmie W. Hinze (ISBN13: 978- 0- 13-247398-9), 2012</p>	<p>Term Project Due on at 11:59am. Additional Homework One-page lecture sum of Najafi's and guest presentations are du Canvas each Sunday 11:59am</p>

<p>12 11/16/20 20</p>	<p>Dr. Najafi, Suyash Bakliwal</p>	<p>Chapter 13 SHORT-INTERVAL SCHEDULES, p.191 Short-Interval Schedules in the Literature, p.192 How Contractors Use Short- Interval Schedules, p.192 Other Short-Interval Schedules, p.195</p>	<p>1) Read Chapter 12 and 13 of Construction Planning and Scheduling (Fourth edition) by Jimmie W. Hinze (ISBN13: 978- 0- 13-247398-9), 2012</p>	<p>If assignments are s due date, there will 20% on your grades Additional Homework One-page lecture sum Najafi's and guest sp presentations are du Sunday at 11:59am.</p>
<p>13 11/23/20 20</p>		<p>FINAL EXAM</p>		<p>3- Hour exam - Onlin</p>