DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

CE 711 Productivity in Construction Fall 2025

Introduction

Welcome to the course in Productivity in Construction. This course has been designed to make the student aware of the issues associated with construction productivity and methods with corrective means to improve it.

Course Description

This course addresses improved methods of construction; various techniques of work sampling and productivity measurement; and current innovations in the construction industry for increasing efficiency.

Course Mode

This course will be taught online. For more information, please see NJIT's Modes of Instructional Delivery.

Instructor

Alan R. Slaughter, P.E., P.P.
Email: slaughte@njit.edu
Email: Turnaround time for emails will be up to 36 hours
Webex:
Since this is an online course there will be no office hours per se. Office hours will be provided, based on previous arrangements on Zoom.

Professor Introduction

Welcome to the course, and I hope you enjoy the course as much as I do. By way of introduction, I have included a bit of information about myself.

I have served as an adjunct professor for the Civil and Environmental Department at NJIT for 22 years, teaching Construction Management courses at both the undergraduate and graduate levels. I have spent 47 years as a consultant working for civil engineering firms, owners, and contractors. I have worked at various engineering levels from draftsman (with pens, pencils, and T-squares) to Senior Associate, Project Manager, Resident Engineer and Construction Manager. My work, of course, involves tunnel design, inspection, and construction as well as work on highways, bridges, historic structures, dams, and commercial development.

It is my intention that by the time this course is over, you will be knowledgeable enough on the methods of productivity that when going on a construction site, you will be familiar enough with the various aspects of productivity work to understand what is going on and methods which could be used to enhance productivity.

Course Learning Outcomes

By the end of the course, students will be able to…

- Outcome 1: Evaluate and explain why construction productivity may not be at high performance.
- Outcome 2: Recognize and select various ways of evaluating productivity.
- Outcome 3: Convince contractors on how to be more productive.
- Outcome 4: Recognize the advantages of improved productivity and applications.
- Outcome 5: Employ various studies in the determination of how productivity can be improved.
- Outcome 6: Apply the data from studies and develop programs that will improve construction productivity.
- Outcome 7: Assess the productivity associated with construction and be able to communicate the programs to others.
- Outcome 8: Practice the use of sustainability in construction productivity.

Required Course Material

Text: Productivity Improvement for Construction & Engineering
Authors: J.K.Yates, PhD.
Publisher: ASCE Press
ISBN-13: 978-0-7844-1346-3

Prerequisites

Prerequisites include the course CE 610 Construction Management.

Course Navigation

The following procedure recommended for navigating this course is suggested here for use. Initially, the assigned reading should be done. This should be followed by the lectures assigned for that week. Subsequently, any homework assignments or activities should be completed within the required timeframe. Should the homework or activity not be completed within the permissible timeframe the professor reserves the right to reduce the points allowed for the work. The number of deducted points depends on how many days the work is late. Generally, the deduction will be a point a day for each day the work is late. This does not include any points deducted for wrong answers.

Deliverables

Deliverables for this course are usually submitted as written responses. Charts, data and abbreviated studies can be included as appropriate. If drawings are appropriate, They can also be submitted.

Discussions

Discussion questions will be posted each week on Monday. A one to two paragraph comment on the question is to be submitted by Thursday at 11:59 pm EST/EDT. Two one paragraph comments on other student responses are due by the following Sunday at 11:59 pm EST/EDT.

Online Exam and Proctoring Policy

There will be two tests for this course. A midterm on week 7 and a final at the end of the semester. These exams will be online, and you will need a computer with a strong internet connection, a microphone, and a webcam.

This proctoring method does not require signing up for the test ahead of time. You will need to get online a few minutes ahead of the scheduled exam to log in. You will not be monitored by an observer during the exam, but you will be documented during the exam and this monitoring will be reviewed after the exam is taken. Any potential issues will be noted and forwarded to me for my review and action, if necessary. This includes talking to others or having other people in the room glancing away from the screen during the exam or using references not allowed on the exam. Make sure you have your ID card for verification.

For more information, please visit the Online Course Exams and Proctoring page.

Course Work

Homework: (20% 0f grade) Homework assignments will be given weekly to offer students an opportunity to apply course concepts for that week. The homework is designed to help students prepare for exams. Homework will be graded on a bi-weekly basis.

Midterm & Final Exams: (20% each of grade) Each exam will be cumulative to that point in the semester. The exams will include multiple choice, true and false and matching questions as well as essay questions. Grades will be available after the test is taken.

Discussions: (20% of grade) Discussion topics have been developed to have you comment on them with your personal opinion on the topic. The responses to two other sets of comments will provide an opportunity to respond to other ideas and concepts expressed. The discussions and responses will be graded the week following the due date.

Project: (20% of grade) The purpose of the project is to encourage the student to look beyond the limits of the course and to study a topic of their interest. These topics may range from construction methods, to equipment, to the people who were or are important to the underground construction industry. The project will be graded within 1 week of your submission.

Final Grade Calculation

Final grades for all assignments will be based on the following percentages:

Homework	20%
Midterm	20%
Discussions	20%
Project	20%
Final	20%

Grading Scale

Grades	Range	Significance
A	90 - 100%	Excellent
B+	85 - 89%	Good
B	80 - 84%	Acceptable
C+	75 - 79%	Marginal Performance
C	70 - 74%	Minimum Performance
F	0 - 69%	Failure
I	Incomplete	
W	Approved Withdrawal	
AUD	Audited (no academic credit)	
S or U	Satisfactory or Unsatisfactory	
P	Passing for completion, defense and final submittal of a Master's Thesis or Doctoral Dissertation	

Policy for Late Work

Homework Assignments: Homework will be due the Sunday following the week it is assigned. If the homework is late, it should be submitted by email, but it will receive a reduced grade.
Exam: If you are unable to take the exam when scheduled, it is necessary for you to notify me ahead of time. Then contact me after the exam to set up a new date. If an exam is missed, it can still be taken later with an automatic reduction of points at the professor's discretion. You will need a good reason for taking a postponed test.

Feedback

I will deliver feedback on each assignment using the comments feature in Canvas.

Academic Integrity Statement

"Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to

protect your educational investment by knowing and following the academic code of integrity policy that can be found here.

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing, or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students office at dos@njit.edu."
Note: AI will not be used for this course.

Withdrawals

Student requests for withdrawals after the deadline will not be permitted unless extenuating circumstances (e.g., major family emergency or substantial medical difficulty) are documented. The course Professor and the Dean of Students are the principal points of contact for students considering withdrawals. November 5th is the last day to withdraw from classes. For more details, please visit the Fall 2025 Academic Calendar.

Syllabus Information

The dates and topics of the syllabus are subject to change; however, students will be consulted with and must agree to any modifications or deviations from the syllabus throughout the course semester.

Netiquette

Throughout this course, students are expected to be courteous of classmates by being a polite, active participant. Students should respond to discussion forum assignments in a timely manner so classmates have adequate time to respond to your post. Respect opinions, even those that differ from your own and avoid using profanity or offensive language.

Additional Information and Resources

- Requesting Accommodations
    - If you need accommodations due to a disability please contact Scott Janz, Associate Director of the Office of Accessibility Resources and Services, Kupfrian Hall 201 to discuss your specific needs. A Letter of

Accommodation Eligibility from the office authorizing student accommodations is required.

- Canvas Accessibility Statement
- Canvas Orientation for Students
- NJIT Services for Students, Including Technical Support

Outcomes Course Matrix CE 711 - 851

Strategies, Actions and Assignments	ABET Student Outcomes (1-7)	Program Educational Objectives	Assessment Measures
Student Learning Outcome 1:			
	7	3	Tests
Student Learning Outcome 2:			
	4	1	Term Paper
Student Learning Outcome 3:			
	1	2	Homework

CEE Mission, Program Educational Objectives and Student Outcomes

The mission of the Department of Civil and Environmental Engineering is:

- to educate a diverse student body to be employed in the engineering profession
- to encourage research and scholarships among our faculty and students
- to promote service to the engineering profession and society

Program Educational Objectives

Our **Program Educational Objectives** are reflected in the achievements of our recent alumni:

1. **Engineering Practice:** Alumni will successfully engage in the ethical practice of civil engineering within industry, government, and private practice, working towards safe, practical, resilient and sustainable solutions in a wide array of technical specialties including construction, environmental, geotechnical, structural, transportation, and water resources.
2. **Professional Growth:** Alumni will advance their technical and interpersonal skills through professional growth and development activities such as graduate study in engineering, research and development, professional

registration and continuing education; some graduates will transition into other professional fields such as academia, business, and law through further education.

3. **Service:** Alumni will perform service to society and the engineering profession through membership and participation in professional societies, government, educational institutions, civic organizations, charitable giving and other humanitarian endeavors.

Student Outcomes

Our **Student Outcomes** are what students are expected to know and be able to do by the time of their graduation:

1. an ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science and mathematics
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety and welfare, as well as global, cultural, social, environmental and economic factors
3. an ability to communicate effectively with a range of audiences
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental and societal contexts
5. an ability to function effectively on a team whose members together provide leadership, create a collaborative environment, establish goals, plan tasks and meet objectives
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data and use engineering judgment to draw conclusion
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

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