Course Syllabus
CE 4387/5387
Construction Scheduling

General Information
Course Instructor: Dr. Adeeba A. Raheem
Email: aaraheem@utep.edu
Phone: 915-747-6348
Office: Civil Engineering (A213)
On-campus office hours:
  Monday: 1.00pm-3.00pm
  Wednesday: 1.00pm-3.00pm
Course website: https://blackboardlearn.utep.edu/

Course Credits: 3

Prerequisites or Co-requisites
Bachelor’s Degree in Engineering, Physical Sciences or Business, CE 4382 or Instructor approval

Course Description
In this course, students will be provided an understanding of planning, scheduling and monitoring of construction projects including development of critical path networks (CPM & PERT), Gantt bar charts and construction cost control and reporting practices. The Students will also learn how to use the software tools to accurately prepare and analyze the project schedule and to effectively communicate the schedule to the management team.

Course Introduction
The primary purpose of this course is to provide an understanding of the planning and scheduling process in construction.

Course Goals and Learning Objectives
The goal of this course is to provide the students with the necessary skills to adequately schedule and control residential, commercial, industrial, manufacturing or engineering projects. At the end of this course, students will be able to
  • LO1: Define schedule activities and assign reasonable durations to the activities
  • LO2: Generate bar charts; critical path networks; including early start, late start, early finish, late finish, durations and float
  • LO3: Identify the critical activities that affect the timely completion of the project
  • LO4: Analyze and update the schedule to monitor progress
  • LO5: Correlate resources and costs to the schedule and Balance the resources
  • LO6: Control and accurately report progress of the project
MATERIAL NEEDED

1. Textbook

Construction Scheduling: Principles and Practices, 2/E
Author: Jay S. Newitt

2. Computer Activities

The computer activities are primarily assignments using MS Project 2013 that is available for engineering students through the Microsoft DreamSpark Program (http://etc.utep.edu/software/msdn.htm). For any kind of technical help, please contact the Engineering Technology Center in the Engineering Bldg., Room E351 (Tel: (915) 747-5223; Email: etchelpdesk@utep.edu)

GRADING POLICY

Students will be responsible for weekly quizzes, class discussion/participation, assignments and exams. Grades will be determined based on the following criteria.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Required Percentage of Available Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (Outstanding)</td>
<td>90 – 100</td>
</tr>
<tr>
<td>B (Very Good)</td>
<td>80 – 90</td>
</tr>
<tr>
<td>C (Satisfactory)</td>
<td>70 – 80</td>
</tr>
<tr>
<td>D (Unsatisfactory)</td>
<td>60 – 70</td>
</tr>
<tr>
<td>F (Failure)</td>
<td>less than 60</td>
</tr>
</tbody>
</table>

Grading Scheme
Percentage weightage of each assignment category to the total grade is as follows:

<table>
<thead>
<tr>
<th>Assignment Categories</th>
<th>Weightage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>10%</td>
</tr>
<tr>
<td>Assignments/Graduate paper</td>
<td>25%</td>
</tr>
<tr>
<td>Discussion questions/</td>
<td></td>
</tr>
<tr>
<td>participation</td>
<td></td>
</tr>
<tr>
<td>Final Project</td>
<td>20%</td>
</tr>
<tr>
<td>Final exam</td>
<td>25%</td>
</tr>
<tr>
<td>Feedback and</td>
<td></td>
</tr>
<tr>
<td>evaluation</td>
<td>5%</td>
</tr>
</tbody>
</table>
DELIVERABLE STANDARDS & EXPECTATIONS

1. Quizzes
   There will be five quizzes throughout the semester based on the course material covered during the week(s) before the quiz. There will be NO make-up quiz allowed.

2. Assignments
   The assignments will generally be posted with a due date after one week of the published date. The homework assignments are to be submitted using the assignment tool on Blackboard after scanning your work and converting it in .pdf format. The assignments are to be prepared in a professional manner as if you were expecting to favorably impress a prospective owner. There will be only ONE late submission allowed that is missed because of unforeseen circumstances. Graduate students have to work on a synthesis paper/case study during the semester that should be submitted by the sixth week of the semester.

3. Discussion Questions
   Each week students must provide FIVE comments including their own answers to discussion questions posted on the discussion board online. The comments should add to the discussion by sharing your experience or adding information that is missing. The comments such as great…really good..I enjoyed it…All answers are good….I agree etc. will NOT be considered for grading purposes.

4. Final Project
   Students will be working on a project throughout the semester identifying work activities, estimating durations, levelling resources and producing and presenting reports. The students will have to submit final reports in a professional manner. Description and rubric for the final project will be provided during second week of the semester.

5. Final Exam
   Final exam will be comprehensive consisting of MCQ’s, Fill-in-the-blanks, short questions, problem based questions and true/false.

6. Feedback/Course evaluations
   Students are encouraged to provide feedback during the term to facilitate the positive learning environment. Students can send any suggestions/comments/concerns regarding the course/assignments structure or any related aspect. Instructor strongly believes in helping and listening to students during the semester when it affects them THE MOST. The link for the final course evaluation will be sent to the students during the final week of the semester. After completing the evaluation, students must send a screenshot to get the associated grade.

DIVERSITY

As an instructor, I am committed to creating an inclusive environment in which all students are respected and valued. I will not tolerate disrespectful language or behavior on the basis of age, ability, color/ethnicity/race, gender identity/expression, marital/parental status, military/veteran’s status, national origin, political affiliation, religious/spiritual beliefs, sex, sexual orientation, socioeconomic status or other visible or non-visible differences. All members of this class are expected to contribute to a respectful, welcoming and inclusive environment for every other member of the class.

TECHNOLOGY REQUIREMENTS

You will need the following software on your computer to efficiently work in this course. In some cases, your computer may already have some of these programs installed.

MS Project. Engineering students can get the access by going to http://etc.utep.edu/software/msdn.htm

Acrobat Reader. You can get the program by going to http://www.adobe.com and then clicking on the icon on the center of the screen which says, "Get Adobe Reader". Follow instructions to install the reader.
Adobe Flash Player. You can get the player by going to http://www.adobe.com and then clicking on "Get Adobe Flash Player". Follow instructions to install the player.

Apple QuickTime Player. You can get this player by going to http://www.apple.com. Once there, click on the "Downloads" tab on the top of the page and then click on QuickTime "Download" and follow instructions.

Microsoft Office. I recommend buying this if you do not have any word processing software or presentation software. As students, you can generally buy this whole package for about $25, far less than the store price of approximately $400.

Microsoft Silverlight. You can download/update this add-on by going to http://www.microsoft.com/silverlight/. This will allow you to view embedded PowerPoint Presentations and PDF files embedded in the course lessons.

IMPORTANT REMINDERS

Course Schedule Changes

As course instructor, I reserve the right to adjust the course syllabus or change assignments as needed. I will make sure to give you plenty of notice prior to any changes.

Academic Dishonesty Statement

Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. Cheating may involve copying from or providing information to another student, possessing unauthorized materials during a test, or falsifying research data on laboratory reports. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another person's as one's own. And, collusion involves collaborating with another person to commit any academically dishonest act. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. Violations will be taken seriously and will be referred to the Dean of Students Office for possible disciplinary action. Students may be suspended or expelled from UTEP for such actions.

Academic dishonesty is an assault upon the basic integrity and meaning of a University. Cheating, plagiarism, and collusion in dishonest activities are serious acts which erode the University's educational and research roles and cheapen the learning experience not only for the perpetrators, but also for the entire community. It is expected that UTEP students will understand and subscribe to the ideal of academic integrity and that they will be willing to bear individual responsibility for their work. Materials (written or otherwise) submitted to fulfill academic requirements must represent a student's own efforts. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. Violations will be referred to the Dean of Students Office for possible disciplinary action. Students may be suspended or expelled from UTEP for such actions.

Notice of Safe Assign

This course may utilize third party software that has the ability to automatically detect plagiarism on documents submitted for grading.

Copyright Notice

Many of the materials that are posted within this course are protected by copyright law. These materials are only for the use of students enrolled in this course and only for the purpose of this course. They may not be further retained or disseminated.

Disabled Student Statement

In Section 504 of the Vocational Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) of 1990, if a student needs an accommodation then the Office of Disabled Student Services located at UTEP
need to be contacted. If you have a condition, which may affect your ability to perform successfully in this course, you are encouraged to discuss this in confidence with the instructor and/or the director of the Disabled Student Services. You may call (915) 747-5148 for general information about the American with Disabilities Act (ADA) and the rights that you have as a UTEP student with a disability. You also can visit the DSSO website at www.utep.edu/dss or the DSSO office in Room 108 East Union Building. Individuals with disabilities have the right to equal access and opportunity. It is the student’s responsibility to contact the instructor and The Disabled Student Services Office at The University of Texas at El Paso.

Technical Assistance

The University of Texas at El Paso offers complete technical information and help desk support at: http://at.utep.edu/techsupport/.

COURSE SCHEDULE*

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
<th>Readings</th>
<th>Deliverables</th>
<th>Related learning outcomes</th>
</tr>
</thead>
</table>
| 1    | • Importance of scheduling and scheduling systems  
      • Bar chart schedules  
      • Introduction to MS project software | Text Chapters 2,3,4  
PowerPoint 1 | Assignment 1  
Discussion 1 | LO1, LO2 |
| 2    | • CPM scheduling  
      • Early and Late Start & Finish calculations  
      • Float or slack time calculations  
      • Network logic diagrams | Text Chapters 5,6  
PowerPoint 2 | Assignment 2, Quiz 1,  
Discussion 2 | LO2 |
| 3    | • Determining activity durations  
      • Lags  
      • PERT | Text Chapters 7,9  
PowerPoint 3 | Assignment 3, Quiz 2,  
Discussion 3 | LO2, LO3 |
| 4    | • Analyzing schedule  
      • Creating bar charts | Text Chapter 11,12  
PowerPoint 4 | Assignment 4, Quiz 3,  
Discussion 4 | LO4 |
| 5    | • Linear scheduling  
      • Updating the schedule | Text Chapter 13,14  
PowerPoint 5 | Assignment 5, Quiz 4,  
Discussion 5 | LO4 |
| 6    | • Resource balancing | Text Chapter 15  
PowerPoint 6 | Assignment 6, Quiz 5,  
Discussion 6  
Graduate paper due | LO5 |
| 7    | • Project control techniques (Cost and schedule)  
      • Managing project team  
      • Other scheduling techniques | Text Chapter 16,17,18  
PowerPoint 7 | Assignment 7  
Discussion 7  
Final project reports due on March 1st, 2018 | LO6 |
| Final Day | | | Final Exam |

* Instructor reserves the right to adjust the course schedule as needed