**College of Engineering Department of Civil Engineering** 



## **CE 511** Construction Planning and Control

Credit and Contact hours	3 / 3 (Lectures), 0 (Tutorials), 0 (Laboratory)		
Required, or Elective	Required		
Course Description	This course provides the students an opportunity to study and apply - different planning and scheduling tools and techniques throughout a project's life cycle.		
Prerequisites or Co- requisites	None		
Course Learning Outcomes	Students completing this course successfully will be able to:		
	Course Learning Outcomes (CLOs)	Related Student Outcomes (SO)	
	<b>CLO1.</b> Recognize and identify the critical challenges in planning and scheduling of any construction project by using different planning tools and scheduling techniques. K1	SO1	
	<b>CLO2.</b> Identify the ethical and professional responsibilities of project managers and other stakeholders through reviewing real-life projects. K1	SO1	
	CLO3. Increase the students' knowledge of construction engineering software and tools. K1	SO1	
	<b>CLO4.</b> Apply knowledge, skills, tools, software and techniques to plan and schedule construction projects. S1	SO2	
	<b>CLO5.</b> Apply the procedures of resource leveling and allocation in real-life projects. S1	SO2	
	<b>CLO6.</b> Evaluate the success and performance of construction projects in terms of scope, time, cost, and quality. S4	SO5	
	<b>CLO7.</b> Developing the student's ability to critically evaluate scientific research papers related to planning and scheduling with a high level of ethics and proficiency. V1	SO6	
	<b>CLO8.</b> Demonstrate the course project results to instructors, students, and professionals. V1	SO6	
	SO 1 Recognize advanced engineering knowledge, concepts, and techniques to identify, interpret, and analyze complex and real-life engineering problems.		
Student Outcomes	SO 2 Provide solutions for complex and real-life engineering problems through critical thinking and the use of modern engineering tools, and identify their impact on social, global, cultural, environmental, safety, and economic factors.		
related to this Course	SO 5 Design novel advanced Civil Engineering systems and evaluate their performance, sustainability, and effectiveness for engineering practice and their impact in global, economic, environmental, and societal contexts		
	SO 6 Demonstrate scientific integrity, ethical responsibility, and academic values in scientific publications, research projects, and thesis work.		

	List of Topics	<b>Related</b> CLOs	
Topics Covered	<ol> <li>Review an introduction to Construction Management and a little brief about project Participants and Project Life cycle and how to choose and evaluate a project</li> </ol>	CLO 1,2,6	
	2. Recognize the definition of Project charter and Pre-Project planning (PPP) and also the Project Definition Index illustration	CLO 1,2,7	
	<ol> <li>Expose the determining Activity Durations and time in the contract as a bar chart, activity on Node, activity on arrow, Precedence diagraming, and time-scaled diagram</li> </ol>	CLO 1,3,7	
	<ol> <li>Illustrate the Time-Cost Trade-Offs, Linear Scheduling (LOB), short interval planning (SIP), and Program Evaluation &amp; Review Technique (PERT)</li> </ol>	CLO 1,3,7	
	<ol> <li>Review the ideas of Resource Leveling and Allocation, Cash Flow Forecasting, Time Control and Cost Control, Analyze of scheduling and Controlling Delay</li> </ol>	CLO 1,5,3,7	
	6. Selected Topics (Change Management, Risk Management)	CLO 1,3,7	
	7. Guest Lecture	CLO 2,3,4,6	
	8. Final Project Presentation	CLO 3,4,8	
Textbook(s) and Other Required Material	<ul> <li>Construction Planning and Scheduling (4th Edition) by Jimmie W. Hinze, 2011.</li> <li>Project Management with CPM, PERT, and Precedence Diagramming,3rd Edition, by Moder J., Phillips, C., and Davis, E.</li> <li>International Project Management, Academic Press, 2003, Miner Media, Eng Mgt 461, International Case Studies, Bennet Lientz and Kathryn Rea, (ISBN-0-120449985-6).</li> <li>Eldosouky, A.I., Principles of Construction Project Management, Tanta University, 2001.</li> </ul>		
Grading System	Assignments10%Group Project30%Mid-term exams20 %Final Exam40 %		
Instructors	Dr. Ayman Altuwaim		
Date of Review	March 2025		