Syllabus Spring, 2013

COURSE DESCRIPTION

3 Semester Hours. Project Planning, Scheduling & Control is the process of coordinating numerous and often complex elements to erect a structure and satisfy the needs of a sophisticated owner. Each phase of the work must be monitored and measured. You cannot control if you cannot measure and you cannot measure if you cannot count. It then becomes the goal of project controls to quantify and govern costs and the goal of the scheduling process to quantify and visualize the progress of the job and make the necessary changes to deliver a successful job.

PROFESSOR

Dr. Gregory P. Wilson, P.E.

CONTACT INFORMATION

Office: 218 AG/IT Bldg.
Office Hours: **As Posted**
Others by Appointment
Telephone: 903-468-8115 (Direct)
Email: gregory.wilson@tamuc.edu

CLASS MEETINGS INFORMATION

TR 0930 – 1045 AGIT 118A

PRE RECS'

See University Catalog for required course prerequisites. They will be checked and strictly enforced.

COURSE OUTLINE & OVERVIEW

Section	Topic and Related Reading
SYNCHRO TUTORIAL AND REINTRO.	**Introduction**
Course Introduction. Reintroduction of SYNCHRO software from fall semester. Complete tutorial Week 1. Be prepared to EXPORT file as needed.	Review SYNCHRO TUTORIAL from fall semester. Introduce any outstanding functions, formats, configurations, etc. to enhance output of software. Introduction of text book and typical reading assignments.
CPM PLANNING AND SCHEDULING INTRODUCTION	**Text Part 1**
Basic introduction to Gantt and Bar Charts. Data, configuration. Development of CPM and PERT (Historical information re: development of the scheduling process.)	Chapts. 1, 2, and 3 Development of the Critical Path Method Ordered "To Do List"; Gantt and Bar Charts. PDM AND RDM. SYNCHRO applications.
SEMESTER REVIT MODEL PROJECT	**SEMESTER REVIT MODEL PROJECT**
Import and export of semester Revit Model. Begin development of activities and precedence.	Determine if MEP is available and begin the development of NAVIS/360 GLUE components for CLASH DETECTION process.
CPM PLANNING AND SCHEDULING INTRODUCTION	**Text Part 2**
Continued development of logic for logic diagrams; arrow/precedence diagrams; logic loops.	Chapt. 4; All sections. Input to various CPM software products.
CPM PLANNING AND SCHEDULING INTRODUCTION	**Text Part 2**
Events, form and format; PDM network format.	Chapt. 5; All sections. Focus on PDM data input.
INNOVAYA REINTRODUCTION AND APPLICATION	**SEMESTER REVIT MODEL PROJECT**
Import REVIT MODEL to INNOVAYA and extract batch quantities for estimating and scheduling.	Reintroduce INNOVAYA file export methods; discuss estimating techniques and related to TIMBERLINE database information.
CPM PLANNING AND SCHEDULING INTRODUCTION	**Text Part 2**
Logic diagram durations, lags, definitions	Chapt. 6 Definition of activities; maximum and minimum values; determining durations, lags, productivity
Logic diagram calculations including, ES, LS, EF, LF; lags, track thru the network; lag calculations.	Chapt. 7 Output of calculations; ES, LS, forward and backward passes; attributes of an event
Solutions to network diagrams; computer and hand solutions techniques	Chapt. 8 Total floats; Critical activities; durations; free and independent float calculations
SEMESTER REVIT MODEL PROJECT	**SEMESTER REVIT MODEL PROJECT**
Implement techniques from Chapts. 6, 7, 8, to begin building SYNCHRO schedule. Organize network according to precedence and order.	Prepare logic diagram using various techniques discussed in class. Consider the development of WBS as displayed in SYNCHRO software.
Begin analysis of durations thru crew sizes and productivity.	Look at MEANS Cost Guide for assistance.
PDM and Precedence Networks	Chapt. 9, 10. Precedence logic, work package calculations, percent complete, multiple calendars, negative float, criticality, actual start and finish dates.
SEMESTER REVIT MODEL PROJECT	**SEMESTER REVIT MODEL PROJECT**
Continue construction of SYNCHRO model implementing information and data from Chapt's 9, 10.	Continue to develop costs, durations, and general cash flow for each activity. Pay particular attention to logic, lags, floats, durations, and general activity configuration.
CPM PLANNING AND SCHEDULING INTRODUCTION	**Text Part 3**
Data collection, pure logic diagram, general logic development techniques	Chapt. 15, 18, Bar Chart is not logic; logic restrained by bar charting; durations, productivity. Contingencies, estimated vs. calculated durations.

CPM PLANNING AND SCHEDULING INTRODUCTION	**Text Part 3**	**CPM PLANNING AND SCHEDULING INTRODUCTION**	**Text Part 3**
Specifying Restraints; Workforce leveling.		Chapt. 19; Chapt. 21 Resource leveling, driving resources and applicable calendars. Turnaround applications.	
SEMESTER REVIT MODEL PROJECT	**SEMESTER REVIT MODEL PROJECT**	**SEMESTER REVIT MODEL PROJECT**	**SEMESTER REVIT MODEL PROJECT**
Apply techniques and concepts from Chapts 19 and 21 to SYNCHRO PROJECT		Continue developing costs, resources, equipment, and manpower for each activity.	
SEMESTER REVIT MODEL PROJECT	**SEMESTER REVIT MODEL PROJECT**	**SEMESTER REVIT MODEL PROJECT**	**SEMESTER REVIT MODEL PROJECT**
CPM and Cost Control	Chapt. 25. Progress payments; cost forecasting; time expediting; application to project total cost	CPM and Cost Control	Chapt. 25. Progress payments; cost forecasting; time expediting; application to project total cost
COMPLETE ADVANCED SYNCHRO PROFESSIONAL TUTORIAL 4.6		LINK MODEL TO SCHEDULE	

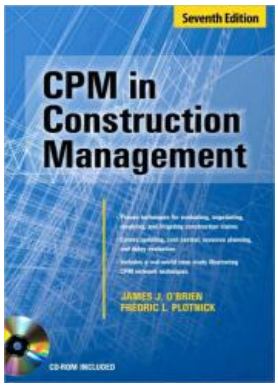
ASSESSMENT OF STUDENT OUTCOMES

Upon satisfactory completion of this course, the student:

1. Student can demonstrate an ability to develop the various components of project controls including estimating, planning, scheduling, including cost and resource management by examination as well as the physical preparation of each of these components for an actual project.
2. Student can demonstrate an ability to develop hierarchical, resource, and work breakdown structures by examination as well as the physical preparation of each of these components for an actual project.
3. Student can demonstrate the ability to develop CPM schedules through their preparation using SYNCHRO and similar type scheduling software.
4. Students can demonstrate by examination as well as specific development of assigned laboratory projects, an ability to prepare cost and resource loaded schedules to measure and forecast project performance.
5. Students can demonstrate by examination and preparation, the ability to link a REVIT model to a SYNCHRO schedule for the purpose of visualizing, monitoring, and controlling the construction process.

COURSE TEXT

Obrien, J. J., Plotnick, F. L. CPM in Construction Management. 7th. Edition. McGraw Hill. 2010.



ATTENDANCE POLICY

Students will be asked to assume various roles and responsibilities in a team approach to producing and execution plan for development of an assigned project. Through the course of instruction, components of the plan will be developed and combined such that the result is a baseline cost and resource loaded CPM schedule detailing the team's collective approach. Instructor will provide the tools and techniques and provide guidance throughout the process.

Participation by students in class is a "must". No phase of the work break down structure can be missed or overlooked. Project controls offers the key to successful project delivery that every member of the team needs to understand and master. (after CE556 Glasser, 2011)

LATE WORK

NO LATE WORK IS ACCEPTED.

COURSE GRADING

Completely Linked SYNCHRO Project	
10 Progress Checks @ 100 Pts.	= 1000 PTS.
Project Presentation to Industry	= 500 PTS
TOTAL POSSIBLE POINTS	**= 1500 PTS**

8 Point Percentage Grading Scale will be used throughout the semester.

92 – 100	**=**	**A**
84 - 91	**=**	**B**
76 - 83	**=**	**C**
68 - 75	**=**	**D**
< 68	**=**	**F**

ACADEMIC INTEGRITY

Academic dishonesty of any kind will not be tolerated. You run the risk of receiving a failing grade in the course in addition to expulsion from the University. Please refer to ***Code of Student Conduct*** in the Student Handbook for all details.

NOTE!

STUDENT BEHAVIOR

Members of the student body at Texas A&M University-Commerce are expected to obey all federal, state, and local laws in addition to the regulations of the University.

ADA

Each division within the University is aware of the needs of the disabled student and is ready and willing to work with each student to solve problems as they arise. The Supervisor of Services is located in the Student Services Building, 3rd. floor, (903)- 886-5835. The Compliance Office for the Disabled is located in the Business Administration Building 2nd. Floor, room 296.

STUDENT SIGNATURE PAGE

Your signature on this page signifies that you have **READ** and **UNDERSTAND** the contents of this syllabus and have had **ALL** questions answered. Please Print out a copy of this page, sign and turn in.

Student Signature

Printed Name

Date

Gpw
12/12/12