

PELLISSIPPI STATE COMMUNITY COLLEGE
MASTER SYLLABUS

**PROJECT SCHEDULING W/LAB
ENGT 2021**

Class Hours: 3:0

Credit Hours: 3:0

Laboratory Hours:2:0

Date Revised: Fall 2012

Catalog Course Description:

This course covers methods used in planning, organizing and controlling construction projects. It includes the use of bar charts and critical path diagrams. Software is used to create project schedules. Emphasis is placed on time, resources and capital considerations for the project.

Entry Level Standards:

Students entering this course should have a general familiarity with construction methods, materials, and terminology. A basic familiarity with cost estimating will also be expected. This basic understanding may come from previous curriculum courses or from field experience. Math skills should be sufficient to allow manipulation of simple algebraic equations. Communication skills should be sufficient for the comprehension and presentation of technical data.

Prerequisites:

Second-year status or consent of program coordinator

Corequisites:

None

Textbook(s) and Other Course Materials:

Textbook:

Construction project scheduling and control, Saleh Mubarak, Wiley latest edition.

References:

Project scheduling software

Instructor Handout

I. Week/Unit/Topic Basis:

Week	Topic
1	Lecture: Introduction Lab: Bar (Gantt) charts
2	Lecture: Basic Networks Lab: Arrow network
3	Lecture: Basic Networks Lab: Node Networks

- 4 Lecture: The Critical Path Method (CPM)
Lab: Node network, perform CPM calculations
- 5 Lecture: CPM review; Exam 1
Lab: Critical path Adding Layouts
- 6 Lecture: Network Relationship
Lab: Starting a project with computer software
- 7 Lecture: Finish to Start, Start to Start, Finish to Finish, Start to Start Costs
Lab: Bar chart, Start Semester Project
- 8 Lecture: Resource Allocation
Lab: Adding resources, Formatting and Printing Reports
- 9 Lecture: Resource Leveling
Lab: Resource Diagrams
- 10 Lecture: Resource Leveling; Exam II
Lab: Preparing List Reports
- 11 Lecture: Updating the Schedule
Lab: Update the Semester Project Schedule
- 12 Lecture: Project Control, Tracking Resources
Lab: Update Resources for the Semester Project
- 13 Lecture: Tracking Costs
Lab: Update Costs for the Semester Project
- 14 Lecture: Conveying and Presenting Schedules, Reports, Plots and Prints
Lab: Prepare a Comprehensive Report of the Semester Project; Project Presentations
- 15 Final Exam Period

II. Engineering Technology General Outcomes (Educational objectives)

- I Apply basic engineering theories and concepts creatively to analyze and solve technical problems
- II Utilize with a high degree of knowledge and skill equipment, instruments, software, and technical reference materials currently used in industry.
- III Communicate effectively using developed writing, speaking, and graphics skills.
- IV Assimilate and practice the concepts and principles of working in a team environment.
- V Obtain employment within the discipline or matriculate to a four year program in engineering or industrial technology

III. Engineering Technology Concentration Competencies*

Students will:

- A Apply the knowledge, techniques, skills, and modern tools for the concentration of study to specifically defined engineering technology activities

- B Demonstrate the knowledge of mathematics, science, engineering and technology to engineering technology problems using developed practical knowledge
 - C Conduct and report the results of standard tests and measurements, and conduct, analyze and interpret experiment or project results
 - D Function effectively as a member of a technical team
 - E Identify, analyze and solve specifically defined engineering technology-based problems
 - F Employ Written, oral and visual communication in a technical environment
- At the program level all 6 competencies apply to roman numerals I – V of the Engineering Technology General Outcomes (Educational objectives) listed above.

IV. Course Goals*:

The course will

- 1 Improve the student's understanding of project phases and scheduling needs. (A, B)
2. Enhance the student's knowledge of defining activities and establishing relationships. (A, B)
3. Build the skills to establish and track progress, budgets, expenditures and resources. (C, E)
4. Foster the ability to prepare Gantt charts and network diagrams. (A, B, C, E, F)
5. Enhance the student's understanding in the use of industry standard software. (B.C)
6. Foster the ability to present written and oral reports using charts, tables and diagrams. (D, E, F)
7. Advance the student's self initiative to complete all assignments on time. (C, D, E, F)

*Capital letters after course goals reference the competencies of the Engineering Technology concentrations listed above.

V. Expected Student Learning Outcomes*:

Students will be able to:

- a. Demonstrate proficiency in one or more project scheduling software applications. 4 & 5
- b. Explain the principles of construction project management. 1& 2
- c. Define project management scheduling terms. 1 & 2
- d. Demonstrate the ability to develop a construction schedule 3,4 & 5
- e. Establish activity relationships. 2
- f. Track and manage a construction schedule. 3& 4
- g. Evaluate and update a construction schedule. 3, 4 & 5
- h. Create activity diagrams and Gantt charts. 4 & 5

- i. Establish and manage budgets and subprojects. 3
- j. Create reports and charts of schedules. 6 & 7
- k. Convey a schedule through reports and charts of schedules. 6 & 7

* Numbers after Expected Student Learning Outcomes reference the course goals listed above.

VI. Evaluation:

A. Testing Procedures: 50 – 60 % of grade

Three examinations are scheduled. Students may make up one exam due to absences preferably before the exam is scheduled but no later than one week after the exam is given. Examinations will be given approximately as scheduled and will be announced at least one week in advance.

B. Laboratory Expectations: 40 – 50 % of grade

Quizzes:

Quizzes may be given by the instructor. Most quizzes will be unscheduled and randomly given. They cover the previous session's material or the reading assignment for that day. There is no make-up or extra credit given for quizzes missed.

Written / Lab Assignments:

Students may be required to hand in answers to select questions at the end of each chapter or other appropriate homework at the instructor's discretion. All written assignments must be handed in on 8 x 11 engineering notepad, typing paper, or forms provided by your instructor. Students are encouraged to use word processing to generate their reports.

All written assignments will be assessed a 10% penalty for each school day it is late.

All student work submitted for evaluation may be retained by the instructor.

Semester Project / PowerPoint Presentation:

A construction project schedule is required by each student and/or group

C. Field Work: ____% of grade

None

D. Other Evaluation Methods: ____% of grade

None.

E. Grading Scale:

90-100 A
86-89 B+
80-85 B
76-79 C+
70-75 C
60-69 D

VII. Policies:

A. Attendance Policy:

Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines, with the approval of the vice president of Academic Affairs, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy may be addressed to the head of the department in which the course was taken. If further action is warranted, the appeal may be addressed to the vice president of Academic Affairs.

B. Academic Dishonesty:

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices:

- Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments.
- Plagiarism, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source.
- Purchasing or otherwise obtaining prewritten essays, research papers, or materials prepared by another person or agency that sells term papers or other academic materials to be presented as one's own work.
- Taking an exam for another student.
- Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor.
- Any of the above occurring within the Web or distance learning environment.

C. Accommodations for disabilities:

Students who need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Services for Students with Disabilities (SSWD) in order to receive accommodations in this course. Services for Students with Disabilities may be contacted by going to Goins 127, 132, 134, 135, 131 or by phone: 539-7153 or TTY 694-6429. More information is available at <http://www.pstcc.edu/sswd/>.

D. Other Policies:

Use of Equipment: Any act of misuse, vandalism, malicious or unwarranted damage or destruction, defacing, disfiguring, or unauthorized use of property/equipment belonging to Pellissippi State is subject to disciplinary sanction.