DETAILED COURSE DESCRIPTION
WPE 453 Construction Planning and Scheduling

COURSE DEFINITION:
WPE 453, Construction Planning and Scheduling (Shared Resource with ERE 653)
Course format: 3 hours lecture/discussion
3 credit hours - Fall semester
Pre- or co-requisite(s): WPE 343 and/or estimating experience or equivalent scheduling experience

SCOPE:
Level of Instruction:
WPE 453 is a required course for seniors in the Construction Management option of the Construction Management and Wood Products Engineering Faculty. It is also one of the required courses for a Minor in Construction Management by the Civil Engineering Faculty at Syracuse University. It is open to upper division students as an elective with permission of the instructor.

Content:
Major Concepts:
1. Understand, define and develop Gantt, Activity on Node, Precedence Diagram, PERT and Linear Schedules.
2. Understand and perform activity identification.
3. Understand and perform duration analysis of activities.
4. Understand and perform schedule updates.
5. Understand and define resource planning and assignment.
6. Understand and define cost planning and scheduling.
7. Understand and develop schedules both manually and via Primavera’s SureTrak Project Manager – a scheduling software program.

WPE 453 is an introductory course of scheduling principles, definitions and practices. This course defines and develops student skills in scheduling through a series of exercises, both in class and through assignments, which introduce and then develop the skills necessary to create and manage construction schedules. This sequence introduces the following schedule types: Gantt, Activity on Node, Precedence Diagram, PERT and Linear schedules. The exercise sequence provides the student with experience in manual schedule creation and then computerized schedule creation. This course, through its assignments and final project, allows the students to apply the concepts presented in class concerning planning and scheduling. Presentation skills are of increasing importance in the construction industry and the integration of a final oral presentation allows students to gain experience in this important area.

Relation to curriculum or to other ESF or Syracuse University courses:
This course is required for seniors in the Construction Management option of the Construction Management and Wood Products Engineering Faculty. It is also one of the required courses for a Minor in Construction Management by the Civil Engineering Faculty at Syracuse University. This course may also be of interest to several ESF disciplines as well as several Syracuse University disciplines. Open to all upper division students at ESF and SU, subject to permission of the instructor.

OBJECTIVES:
After completing this course the student should be able to:
1. Define and develop Gantt, Activity on Node, Precedence Diagram, PERT and Linear Schedules.
3. Define and perform duration analysis of activities.
4. Define and perform schedule updates.
5. Define and perform resource planning and assignment.
6. Define and perform cost planning and scheduling.
7. Define and develop schedules both manually and via Primavera’s SureTrak Project Manager – a scheduling software program.
INSTRUCTIONAL FORMAT AND MATERIALS:

Format: Three hours of lecture/discussion per week in the fall semester. Reading and other assignments are done outside of class.

Materials: Required texts are used and it is suggested the students have access to the World Wide Web.

INSTITUTIONAL RESOURCES REQUIRED (INSTITUTIONAL IMPACT):

A classroom with chalk or dry-erase board, overhead projector, computer with DLP device and screen are required. Slides and videotapes are also utilized. Duplication of handouts will be required. Students shall require access to the Construction Management computer facility for approximately 5 hours per week on average. Software requirements in the Construction Management computer facility include Microsoft Office, SureTrak Project Manager and Primavera Project Planner as a minimum. Enrollment is estimated between 20 to 30 students per offering.

HEALTH AND SAFETY CONSIDERATIONS:

Health and Safety Considerations to be Specifically Addressed.

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<th>Conditions or situations present in association with the course?</th>
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<tr>
<td>YES</td>
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<td>1. Will substances with any of the following properties be used during instruction: flammability, toxicity, corrosivity, reactivity, registered pesticide, legally controlled, or other characteristics with the potential to cause harm or injury?</td>
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<td>2. Will any physical hazards be present during instruction? (e.g., machines that need safety guards; razor blades or syringes; compressed gases, etc.).</td>
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<td>3. Will any biological hazards be present during instruction? (e.g., handling animals (rabies or hantavirus); cultures or stocks of infectious agents (fungal spores, viruses, bacteria, etc.).)</td>
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<td>4. Will any radiation hazards be present during instruction? (e.g., radioisotopes, X-rays, ultraviolet rays, lasers, etc.).</td>
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<td>5. Will any electrical equipment that, due to its design, location, or method of use, pose any threat to safety during instruction? (Give considerable thought to electrical use outdoors, or any potentially wet location.).</td>
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<td>6. Will there be any personal safety issues related to the class? (e.g., due to time of day or location, at the end of any organized class exercise, will students be in danger of physical assault, etc.).</td>
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<td>7. Will any students be driving official State or research sponsored land or water vehicles during any class or instructional exercise?</td>
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<td>8. Will any type of personal protective equipment be necessary during class exercises? (e.g., hard-hats, eye/face protection, hearing protection, hand/foot protection, lab coat, visibility clothing, etc.)</td>
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Health and Safety Considerations Narrative: This is an indoor, lecture class. No hazardous or health and safety issues are anticipated in the classroom.
CATALOG DESCRIPTION:

WPE 453 Construction Planning and Scheduling (3)
Three hours of lecture/discussion.
The use of common types of schedules: Gantt, Activity on Node, Precedence Diagram, PERT and Linear. Identification of activities and performance duration analyses of these activities. Updating of schedules, resource planning and assignment, cost planning and scheduling are all covered. Schedule development is performed both manually and with industry-accepted software. Fall.
Prerequisites: WPE 343 and/or estimating experience or equivalent scheduling experience.
Note: Credit will not be granted for both WPE 453 and ERE 653.

COURSE HISTORY:
This is an established course updated to reflect current industry trends and college requirements in March 2002.