CE332 SCHEDULING AND RESOURCE ALLOCATION ASSIGNMENT

Due: May 17, 2013
Submit to: K1-407

Goal: The purpose of this assignment is to develop an understanding of scheduling and resource allocation of a bridge project and to get familiar with project management software (Microsoft Project).

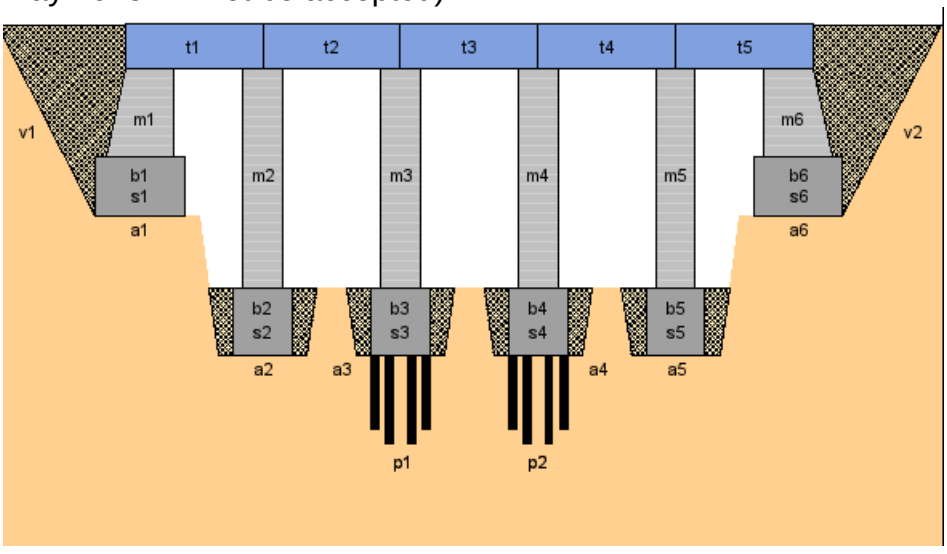
Description: You are required to develop two schedules for a bridge project. The activities, precedence (dependence) relations and resource requirements for the project are given below. The project is planned to start at June 1, 2013 and there are no holidays in the work schedule (there will be no holidays on Saturdays, or Sundays, or on official holiday dates). When developing the schedules:

a) Assume that: There are no resource-constraints (you have unlimited number of resources available).
b) Assume that: The availability of each resource is one. (There is 1 excavator, 1 pile driver, 1 carpenter crew, 1 concrete mixer, 1 masonry crew, 1 crane, and 1 backfilling equipment available).

Required: You are required to develop two schedules; a schedule with unlimited resources (part a) and, a schedule with limited resources (part b). You are required to **submit the print out of the report and the Microsoft Project file(s) on a CD by May 17, 2013**. The report should include the following:

1) Your project completion dates for part (a) and part (b).
2) Schedule outputs obtained from Microsoft Project for the schedules in part (a) and part (b) which includes; early start/finish dates, late start/finish dates and total float of activities.
3) Resource graph outputs obtained from Microsoft Project for part (a) and part (b) which shows daily resource requirements of each resource.

(There will be a penalty of %25 for late submittal. Assignments submitted after 31 May 2013 will not be accepted).



Bridge project data

Activity	Description	Duration	Dependence	Resource
pa	beginning of project	0		
a1	excavation (abutment 1)	4	pa	1 excavator
a2	excavation (pillar 1)	2	pa	1 excavator
a3	excavation (pillar 2)	2	pa	1 excavator
a4	excavation (pillar 3)	2	pa	1 excavator
a5	excavation (pillar 4)	2	pa	1 excavator
a6	excavation (abutment 2)	5	pa	1 excavator
p1	foundation piles 2	20	a3	1 pile driver
p2	foundation piles 3	13	a4	1 pile driver
s1	formwork (abutment 1)	8	a1	1 carpenter crew
s2	formwork (pillar 1)	4	a2	1 carpenter crew
s3	formwork (pillar 2)	4	p1	1 carpenter crew
s4	formwork (pillar 3)	4	p2	1 carpenter crew
s5	formwork (pillar 4)	4	a5	1 carpenter crew
s6	formwork (abutment 2)	10	a6	1 carpenter crew
b1	Concrete foundation (abutment 1)	1	s1	1 concrete mixer
b2	Concrete foundation (pillar 1)	1	s2	1 concrete mixer
b3	Concrete foundation (pillar 2)	1	s3	1 concrete mixer
b4	Concrete foundation (pillar 3)	1	s4	1 concrete mixer
b5	Concrete foundation (pillar 4)	1	s5	1 concrete mixer
b6	Concrete foundation (abutment 2)	1	s6	1 concrete mixer
ab1	Concrete setting time (abutment 1)	1	b1	
ab2	Concrete setting time (pillar 1)	1	b2	
ab3	Concrete setting time (pillar 2)	1	b3	
ab4	Concrete setting time (pillar 3)	1	b4	
ab5	Concrete setting time (pillar 4)	1	b5	
ab6	Concrete setting time (abutment 2)	1	b6	
m1	Masonry work (abutment 1)	16	ab1	1 masonry crew
m2	Masonry work (pillar 1)	8	ab2	1 masonry crew
m3	Masonry work (pillar 2)	8	ab3	1 masonry crew
m4	Masonry work (pillar 3)	8	ab4	1 masonry crew
m5	Masonry work (pillar 4)	8	ab5	1 masonry crew
m6	Masonry work (abutment 2)	20	ab6	1 masonry crew
l	Delivery of the preformed bearers	2		1 crane
t1	positioning (preformed bearer 1)	12	m1, m2, l	1 crane
t2	positioning (preformed bearer 2)	12	m2, m3, l	1 crane
t3	positioning (preformed bearer 3)	12	m3, m4, l	1 crane
t4	positioning (preformed bearer 4)	12	m4, m5, l	1 crane
t5	positioning (preformed bearer 5)	12	m5, m6, l	1 crane
v1	filling 1	15	t1	1 backfilling equipment
v2	filling 2	10	t5	1 backfilling equipment
pe	end of project	0	t2, t3, t4, v1, v2	