

Homework 6.

Due: 3:35pm, Monday November 8, 2005.

Please use a word processor for preparing your answers. The questions relate to the video "Super Bridge" shown in class on Monday, October 31, 2005. If you missed class you can visit Media Services on the Lower Level of the library and view the videotape there.

QUESTION 1.

- a) What types of bridges were considered for the Mississippi River crossing at Alton?
- b) Describes why the cable-stayed design was chosen for this particular location. Summarize the factors that were considered in this decision.
- c) What is particularly unique about the particular design chosen?
- d) What role did the Army Corps of Engineers model play in modifying the design?

QUESTION 2.

What were the limitations of the existing bridge?

QUESTION 3.

- a) What are the similarities between Alton, IL and Mifflinburg, PA -- the hypothetical town where our ethics anti-hero Chris had to do the structural audit?
- b) What role do engineering projects play in a broader social sense?

QUESTION 4.

The video describes seven different stages in the construction process:

- a) Foundations
- b) Towers
- c) Approaches
- d) Cables
- e) Road Deck
- f) "Closing the Gaps"

g) "Race to the Finish"

At each stage the construction team faced significant challenges. For **each stage**, describe what was going on during this stage and one of the challenges, and how that challenge impacted the goal to finish the bridge on time and within budget.

QUESTION 5.

What is the purpose of the coffer dam?

QUESTION 6.

How was the old bridge removed?

QUESTION 7.

- a) What job would you like the most and why?
- b) What job would you like the least and why?

QUESTION 8.

All construction projects involved some element of risk and innovation. For this project:

- a) Who do you think had to bear the greatest risk of failure and why? You may chose an organization, a company or an individual?
- b) What did you think was the most innovative or coolest idea or practice and why?

c) GRADING SHEET – HOMEWORK 6.

CIEG 125 - Introduction to Civil Engineering.

NAME: _____

This sheet MUST be stapled to the front of your homework.

		Points awarded	Max points
General Presentation (4 points total)	Name, Date, Assignment #		1
	Neatness (don't forget to staple the sheets together in the correct order!)		1
	Logical Presentation		1
	Spelling/Grammar		1
Question 1. (14 points total)	a) Types of bridges considered		4
	b) Why cable-stayed		4
	c) Uniqueness of design		2
	d) Model		4
Question 2. (4 points total)			4
Question 3. (10 points)	a) Similarities		5
	b) Role		5
Question 4. (42 points total)	a) Foundations		6
	b) Towers		6
	c) Approaches		6
	d) Cables		6
	e) Road Deck		6
	f) "Closing the Gaps"		6
	g) "Race to the Finish"		6
Question 5. (4 points)	Coffer dam		4
Question 6. (2 points)	Bridge removal		2
Question 7. (10 points)	a) Best job		5
	b) Worst job		5
Question 8. (10 points)	a) risk		5
	b) innovation		5
TOTAL			100