Course Description

• CM 420 is an introductory course in temporary structures used to support construction operations such as concrete formwork, scaffolding systems, shoring systems, cofferdams, underpinning, slurry walls, and construction dewatering systems.

Major Objectives

• The objective of the course is to familiarize the student with the materials, methods and techniques associated with temporary structures utilized in various construction operations, such as: concrete formwork construction, scaffolding, falsework/shoring, cofferdams, underpinning, diaphragm/slurry walls, earth-retaining structures, and construction dewatering. A major emphasis will be placed on concrete formwork construction covering detailed design analysis of both vertical and horizontal timber formwork systems.

Text and/or other Resources

On Reserve at Architecture Library:

• Hurd, M. K.  Formwork for Concrete. 6th edition, American Concrete Institute, Detroit, Michigan, 1995.


• The course web site is located at:  http://courses.washington.edu/cm420/

Submittals

Homework assignments will be given at various times throughout the quarter. This work is to be turned in at the beginning of the class period due. Late homework assignments will not be accepted. Failure to hand in a homework assignment on time will result in a grade of 0 points for that particular assignment, however, all assigned homeworks must be submitted. All homeworks should be submitted with clear text and drawings done neatly using straight edge.

Exams

There will be two midterm exams and three quizzes. First midterm test will be given on Thursday, February 1st and the second one on Thursday, March 8th.

Grading

The course final grade will be calculated based on the following weights: 25% for homework assignments, 15% for three quizzes, and 30% for each midterm exam. All exams will be closed book. Failure to attend, both physically and mentally, may contribute negatively towards determination of the final grade.
Schedule

- Tentative schedule for class meeting topics, pre-reading assignments, and exams is shown below:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Reading Reference</th>
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</table>
| 1    | Course introduction  
General objectives in formwork building | Chapter 1  
Chapter 2 |
| 2    | Overall Planning for Formwork  
Materials, accessories, proprietary products | Chapter 3  
Chapter 4 |
| 3    | Loads and Pressure  
Form Design | Chapter 5  
Chapter 6 |
| 4    | Wall form design  
Slab form design | Chapter 6  
Chapter 6 |
| 5    | Column form design  
Design Tables | Chapter 6  
Chapter 7 |
| 6    | Building and erecting the formwork | Chapter 9 |
|      | **FIRST EXAM** | |
| 7    | Scaffolding  
Falsework/shoring | Ratay, Chapter 15  
Ratay, Chapter 16 |
| 8    | Cofferdams | Ratay, Chapter 7 |
| 9    | Underpinning  
Diaphram/slurry walls | Ratay, Chapter 12  
Ratay, Chapter 9 |
| 10   | Earth-retaining structures  
Construction dewatering, Ground Freezing | Ratay, Chapter 8  
Ratay, Chapter 10 |
| 11   | **SECOND EXAM** | |

Disability Accommodations

To request academic accommodations due to disability, please contact Disabled Student Services, 448 Schmitz, (206) 543-8924 (V/TTY). If you have a letter from Disabled Student Services, please present the letter to your instructor so that appropriate accommodations can be made for you.