Syllabus for CHE 6570 (21593)/HWM 6570/AET 5700 (21221 and 22843) - 2010

Course: Safety: Chemical Process and AET Industries  
Instructor: J. F. Louvar  
Time: 4:30 – 7:20 on Thursdays  
Office: 1125 Engineering  
Classroom: Main 0151  
Phone: (313) 382-0790  

Course Objectives:
1. Develop an appreciation for the significance and importance of process safety in the Chemical and AET Industries.
2. Learn the important and essential technical fundamentals and calculation methods for designing, operating, and managing chemical process and AE technologies.

Course Description: This course emphasizes the technical side of chemical process and AET safety, not hard hat and hard toe shoe safety. The large chemical plant disasters that are relatively common in our industry are due to a misuse or no use of this technical side of chemical process safety. The textbook used for this course includes a compilation of the latest technical information from recent literature to emphasize the most current, important, and essential features of chemical process and AET safety.

The most important principles of chemical process and AET safety will be covered in this course, such as: process design, the operation of plants, and the management of chemical plants. The topics include: source models for computing the magnitude of chemical spills due to various technology failures, dispersion calculations to compute the downwind effects of chemical spills, principles of deflagrations and detonations, consequences of explosions, inerting and purging principles, principles of static electricity, sizing relief devices including the latest technology for two-phase flow, safety review concepts, and case histories to emphasize the relevance of this technology.


Grades:

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th><em><strong>Grading Requirements</strong></em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Two Tests</td>
<td>20 %</td>
<td>A 95-100 A- 90-94</td>
</tr>
<tr>
<td>Homework</td>
<td>20 %</td>
<td>B+ 85-89 B 80-84 B- 75-79</td>
</tr>
<tr>
<td>Term Projects</td>
<td>20 %</td>
<td>C+ 70-74 C 65-69 C- 60-64</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20 %</td>
<td></td>
</tr>
</tbody>
</table>

Homework: Assigned during class and due following class, (50% maximum for late transmittals).

Required Backgrounds: UG Thermodynamics and Physics (or equivalent).

Prerequisites: Senior standing in an engineering or math-based science BS program.

Term Projects:
ChE/HWM Students (3 hour course) – 10 pages outline/tables plus 10 pages of calculations
AET Students (4 hour course) – 20 pages outline/tables plus 20 pages of calculations

Consultations: Home phone 313-382-0790
Home FAX: 313-382-4840 Home: josephlouvar@yahoo.com