

University of Detroit Mercy – Department of Chemistry

Chemistry 429/529

Spring 2004

Instructor: Dr. Mark A. Benvenuto, C215a, 313-993-1184, benvenudmercy.edu

Text: *Survey of Industrial Chemistry, 3rd ed.* Chenier.

Other notes, articles, etc as assigned.

Objectives: To introduce students to the world of the chemical industry. An emphasis is placed on practices as well as problems (and how to overcome them) in the chemical industry in our society, as well as ethical decision making in industrial situations.

Tentative Lecture Schedule

<u>Dates</u>	<u>Class Period</u>	<u>Chapter Covered</u>
January 5	1	Introduction, History
January 7	2	Chapter 2 Sulfuric Acid
January 12	3	Chapter 3 Gases
January 14	4	Chapter 4 Nitrogen
January 19		No class, MLK Day
January 21	5	Chapter 5 Limestone
January 26	6	Test 1
January 28	7	Chapter 6 Sodium Chloride
February 2	8	Chapters 7-9 Ethylene, Propylene, Aromatics
February 4	9	Chapters 7-9
February 9	10	Chapters 7-9
February 14	11	Chapter 10 Propylene and Butylene
February 16	12	Test 2
February 18	13	Chapter 11 Aromatics Chemicals
February 23	14	Chapter 12 Chemicals from Methane
February 25	15	Chapter 13 The second fifty (based on bulk production)
March 1-6		Spring Break
March 8	16	Chapters 14-16 (selected portions) Polymer Chemistry
March 10	17	Chapter 22 Pulp, Paper and Other Wood Products
March 15	18	Test 3
March 17	19	Grad seminar (45 minutes), plus: student choice chapter
March 22	20	Grad seminar (45 minutes), plus: student choice chapter
March 24	21	Grad seminar (45 minutes), plus: student choice chapter
March 29	22	Out of class assignment
March 31	23	Out of class assignment
April 5	24	Grad seminar (45 minutes), plus: student choice chapter
April 7	25	Test 4
April 12	26	Grad seminar (45 minutes), plus: student choice chapter
April 14	27	Grad seminar (45 minutes), plus: student choice chapter

Final Examination (100 points)

Grading and Grade Scale: The following weighing scheme will be utilized to determine course grades:

	CHM 429	CHM 529
Test 1	100 points	
Test 2	100 points	
Test 3	100 points	
Test 4	100 points	

Final 100 points
500 points total

same as 401 +
Paper/Seminar 100 points

600 points total

Test average=B=80 points

Academic Integrity: Students are expected to conform to a high standard of honesty and integrity in this course (please refer to the University Catalog and E&S Student Handbook for further explanation of academic integrity)

Possible Topics for CHM 429/529 Papers and Seminars

1. The fullerenes
2. Ziegler-Natta catalysis
3. Platinum group metals and PGM compounds as soluble catalysts
4. High temperature superconductors
5. Steel metallurgy
6. Aluminum refining and processing from discovery to the present
7. Kroll Process
8. Silicon-based polymer systems
9. Polyphosphazenes
10. Homogeneous catalysis
11. New metallocent polymers
12. Novel polymer systems and their effects on the polymer industry
13. Nitrogen fixation
14. Desulphurization catalysts
15. Any element production
16. Any of the top 100 production
17. – any ideas of yours?