

History of Chemistry and Society

Spring, 2002

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Prerequisites: Those of any perspectives course (satisfaction of the English Composition competency requirement, that is, English 110; plus at least 24 semester hours of the Liberal Arts Core) CH 102, CH 104, or CH 111; two social science courses—including one history course: HI 100, HI 101, HI 310 preferred.

Textbook: “The Development of Modern Chemistry,” Aaron J. Ihde, Dover Publications, Inc., New York, NY, 1984. (Chapters 3 through 21)

Optional: “The Historical Background of Chemistry,” Henry M. Leicester, Dover Publications, Inc., New York, NY, 1956. (Chapters I through XIV)

Objectives:

At the successful completion of this course, you should be able to: (1) explain, and illustrate with at least five specific examples, how the course of history was altered by chemical developments; (2) describe how the science of chemistry developed from prechemistry, including describing how prechemistry was influenced by the societies in which it developed and how each society imparted its own character to the developing discipline; (3) describe how modern chemistry developed and grew, how it was influenced by the political, social, and moral climate of the countries in which it developed, and how it altered these societies; and (4) show how the role and character of science, chemistry particularly, has changed from the 17th century to today.

Format:

The course is conducted in discussion format. Because you enrolled in the course, you are assumed to be interested in the history and development of chemistry and how they relate to those of the rest of society. You should maintain and manifest that interest. This means that active participation in class discussions is expected of all members. Your background in history is likely to be different from that of the rest of the class, giving you many opportunities to contribute. The text and the discussion notes will serve as resources for our discussions, as will the short and long papers produced and presented by the members of the class.

Quizzes:

There will be at least ten short quizzes, of ten minutes in length and given at the beginning of the hour. Please be prompt! I anticipate the format as being similar to: “Explain why it was not likely that the periodic table could have been formulated before 1850.” or “Explain how chemical developments influenced the outcome of the American Revolution.” The quizzes assess two things. First, to see how carefully you have read each day’s assignment. Second, to give you practice in presenting your thoughts in an organized fashion in writing. Each quiz is worth twenty (20) points, fifteen (15) for content, and five (5) for correct grammar, logical organization, correct spelling, etc.

Reports:

You are to read a published article on some aspect of the history of chemistry and prepare a brief report on that paper. Journals in which historical articles appear include: *Chemical and Engineering News*, *Journal of Chemical Education*, *Chemistry in Britain*, *Education in Chemistry*, *Scientific American*, *American Heritage of Science and Technology*, and *Bulletin for the History of Chemistry*. Alternatively you can summarize an original paper (try the site <http://webserver.lemoyne.edu/faculty/giunta/papers.html>). The topic of your presentation should approximate what we are studying in class. Each report should be no more than one page in length, typewritten, and double spaced. Five reports are due during the semester. Dates will be assigned on a random basis (by drawing lots), with at least two members of the class having reports due each class meeting. One of those individuals (again chosen by lot) will present (not read) his/her summary orally. Thus, you should be to present your summary from notes on a 3 × 5 card.

Discussion:

Come to each class prepared to contribute to a lively discussion. A careful reading of the scheduled chapters (along with your notes on your reading) is the least you should prepare. Because the texts do not consider many of the societal implications of chemistry, discussion notes for the course have been prepared, incorporating information from many sources. Copies will be available at the beginning of the semester. They also include discussion questions and examinations from previous offerings of the course. The cost for the more than 100 pages of notes is \$5.00. The money received for the notes is used to purchase supplies, journals, and books for the course.

Papers:

You should complete two written papers approximately five pages in length. The final drafts are due on Thursday 7 March and Thursday 24 April. A typed half-page proposal for your paper, including four bibliographic citations, is due three weeks before the paper, and will be returned the next class day. (References may not include encyclopedias or juvenile literature.) Each paper should be discussion of how chemical developments influenced or were influenced by world events during the period covered by the course (up to about 1930).

		15 Origins		16 Agr, Physiol., Food Studies		
APR	15	16 Chemical Industry I. 17 The Nineteenth Century	17	18 Radiochemistry I. Radio- 18 activity and Atomic Structure	19	
APR	22	23 Radioactivity II. 19 The Nuclear Age	24	25 Physical Chemistry II. 20 Maturity	26	
APR	29	30 Analytical Chemistry II.	1	2	3	
MAY	21	Expansion				
	FINAL	Wednesday 8 May		10:15 to 12:15 a.m.		