**CHEMISTRY/HISTORY 282 - Spring 2000 - _The History of Scientific

Thought_**

Professors Furtsch (mailto:tfurtsch@tntech.edu) [FH 325; x3410] and
Webb (mailto:gwebb@tntech.edu) [HH 116B; x3335]

Lectures and Assigned Readings | **History of Science at TTU (default.htm)**
Library Assignments | **WWW Links For Chem/Hist 282 (links282.htm)**
Examinations | Essays For Preparation of Exam I (EssaysI.htm)
Grading Scale |
Office Hours | 282 Home Page (default.htm)
ADA Statement | Last Updated: 03/19/02

PLEASE NOTE: The following schedule is tentative. Any changes will be announced in class

_Readings Codes: _
Bowler, *EVOLUTION: THE HISTORY OF AN IDEA* [E]; Ferris, *Coming of Age in the Milky Way* [MW];Watson, *The Double Helix* [DH]

| A WWW annotated version of this lecture schedule is now available. It is separated into three parts Part I (part_i.htm), Part II (part_ii.htm) and Part III (part_iii.htm) covering material for the Three Exams, respectively.

DATE* | *TOPICS* | *ASSIGNED READINGS
1/17 | Introduction |
1/19 | Origins of Scientific Biology and Geology | **[E: Prefaces;** MW: 12]
1/24 | Paleontology and its Impact | **[E: 5]**
1/26 | Darwinian Revolution I | **[E: 6]**
1/31 | Darwinian Revolution II | **[E: 7-8]**
2/2 | Post-Darwinian Developments | [**[E: 9-10** ; MW: 13; Reserve: "Agassiz and Gray"
2/7 | *** **EXAM #1** ***
Essays For Preparation of Exam I (EssaysI.htm) |
2/9 | The Atom Comes of Age: The Scientific Background |
2/14 | The Electron | [Reserve: "The Atom"]
2/16 | Development of Microbiology | [Reserve: "Pasteur"]
2/21 | Planck's Quantum; Einstein | [MW: 10]
2/23 | Bohr's Atom; Particle Duality | [MW: 15]
2/28 | Uncertainty: Paradoxes & Possibilities | [Reserve: "Toward Modern Physics"]
3/1 | A New Picture of the Atom |
3/5 | Foundations of Modern Astronomy (Webb) | [MW: 14]
3/7 |

*** **EXAM #2** ***
Essays For Preparation of Exam
II (http://iweb.tntech.edu/tfurtsch/exiiessays.htm)
3/12 |

SPRING BREAK
3/14 |

SPRING BREAK
3/19 | Topics in 20th Century Biology I (Harris) | [**E** : 11-12; DH]
3/21 | Topics in 20th Century Biology II (Harris) | [Reserve: "Contemporary Biology"]
3/26 | *Stonecipher Symposium* (Details TBA) |
3/28 | The Scale of the Universe I | [MW: 9, 11, 14]
4/2 | The Scale of the Universe II | [Reserve: "Scale of the Universe"]
4/4 | Subatomic Particles |
4/9 | Manhattan Project I |
4/11 | Manhattan Project II |
4/17 | Science and the Cold War |
4/18 | Chemistry in the 20th Century | [MW: 16-17]
4/25 | Earth Sciences in the 20th Century I | [Reserve: "This Changing Earth"]
4/27 | Earth Sciences in the 20th Century II |
5/2 | Contemporary Astronomy | [MW: 18-19]
5/4 | Science in the 21st Century | [MW: 20]
5/8 |

*** **EXAM #3** *** 10:30 am - 12:30 pm

COURSE DESCRIPTION AND REQUIREMENTS

LECTURES AND ASSIGNED READINGS: The lectures, texts and library assignments for the course are designed to complement each other. Texts are not a replacement for lectures, nor *vice versa*. The instructors will assume that all reading assignments have been completed as assigned and will structure their lectures accordingly. Students are urged to attend the lectures diligently, as much of the material for the course is only available from that source. Once class rolls are correct, however, no formal attendance will be taken.

ToTop of the Page

LIBRARY ASSIGNMENTS: In addition to the three assigned textbooks, several reading assignments are on reserve in the TTU library under the title, "Readings". They are catalogued under the course number (Chemistry/History

282. and instructors' names. These assignments are indicated on the syllabus as "Reserve" and should be read according to the schedule. This material includes contemporary documents of significance in the history of science, as well as historical discussions of historically important experiments. Students are expected to complete these assignments and will be held accountable for this material on the examinations.

On Reserve:
"Agassiz and Gray"
"The Atom"
"Pasteur"
"Toward Modern Physics"
"Contemporary Biology"
"Scale of the Universe"
"This Changing Earth"

EXAMINATIONS: Three examinations will be given during the semester. Each is MANDATORY and will determine one-third of the course grade. As deemed appropriate by the instructors, each exam may be a combination of essay questions, short answer sections, computation exercises or other formats. Essay questions will be chosen by the instructors from lists distributed several days before the scheduled examination. On the day of the examination, students will answer the selected essay (and other portions of the exam) without use of notes or other "helpful" material. All examinations will be based on lecture material AND assigned readings from the texts and library assignments. None will be comprehensive. Examinations are to be written in "Blue Books," available at the University Bookstore. "Make-up" examinations will only be given to those students who present written proof of their inability to take the original exam. No "extra credit" work will be accepted. (GRADING SCALE: A=90-; B=80-89; C=70-79; D=60-69; F=0-59)

ADDITIONAL INFORMATION: *Office Hours* for each instructor will be scheduled and posted on his office door. In addition, each instructor has "Voice Mail" at his office phone number and is available by e-mail (Furtsch: tfurtsch; Webb: gwebb). Students must understand, however, that each instructor has a large number of responsibilities in addition to Chemistry/History 282. These responsibilities include other classes and various committee and similar assignments at the department, college, and university level. Both instructors are heavily involved in scholarly pursuits and are active in professional organizations of local, state, and national scope. These many responsibilities may occasionally require modification of scheduled office hours during the semester.

The information included in this syllabus is tentative. Any changes in lecture topics, examination schedule, reading assignments, or other aspects of the course will be announced in class. In addition, the course now has a web page, accessible through the chemistry department web site.

ADA Statement: ***Any student who believes he or she will require special consideration to meet the requirements for this course must consult the Office of Disability Services (UC 112; x6119) during the first week of classes.***

ToTop of the Page