

Biology 3309:001 & MC1 – History of Science Syllabus
Spring 2020: TR 11:00 – 12:15 WSB 107

Instructor: Dr. Chris M. Ritzi

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Office hours: MWF 11:00-11:50, TR 9:00-10:30, or appt.

Class Website: <http://bbsrsu.sulross.edu> & <http://faculty.sulross.edu/critzi/>

Text: There is no official textbook for this class. Instead, lecture notes will be drawn from a variety of sources, including the 4 volume set of History of Science edited by Taton. We will also use periodic outside literature, which should be acquiring from Blackboard.

Course Description: In this course we will work our way through time, covering the evolution and development of different fields of science over the centuries. While this is a Biology course, the topic material will branch across the various sciences, including physics, astronomy, chemistry, and medicine. We will begin with Ancient Science the development of knowledge, and move forward to the renaissance. The past century will not be a topic of this course, as it is covered in most of the other courses taught over the program.

Student Learning Outcomes

The graduating biology student graduating with a BS in Biology should be able to:

- SLO1 The student will be able to demonstrate an understanding of basic biological concepts, including but not limited to evolution via natural selection, cell theory, and the role and function of DNA.
- SLO2 The student will be able to demonstrate utilization of various field techniques toward addressing scientific questions in the specific discipline. These field techniques can include, but are not limited to, plant collection and processing, various animal collection techniques, ecological surveying and sampling, and biodiversity indexing.
- SLO3 The student will be able to use biological instrumentation to solve biological problems using standard observational strategies.
- SLO4 The student will develop writing skills by summarizing and critiquing recent relevant biological literature.

Student Learning Objectives for this Course:

- 1) Demonstrate an understanding of how science has changed and advanced over time.
- 2) Compare and contrast the different views of science across cultures and civilizations.
- 3) Identify trends in scientific advancement over time.

- 4) Gain a greater appreciation for the importance of the preservation of knowledge and education, thorough the development of knowledge over time and the set-back created by its loss.

Marketable Skills: A student getting a degree in the Biological sciences would be expected to acquire the following marketable skills by graduation.

- 1) Students will be able to organize, analyze, and interpret data.
- 2) Students will be proficient at using presentation software.
- 3) Students will acquire experience in managing time and meeting deadlines.
- 4) Students will gain the ability to speak effectively and write concisely about scientific topics.
- 5) Students will acquire experience and guidance in the development of professional email correspondence.

Tests: This course will assess material covered over 3 exams, including the final exam. Each exam will focus on the material covered since the previous examination. Additionally, students will be responsible for creating and presenting an oral presentation toward the end of the term. The presentation is to be a 12-15 minute presentation about a topic of scientific history of your choice within the time frames covered in class. The point of this assignment is to supplement the course beyond the basic material covered, so in-depth information and research will be needed. Topics must be approved by the professor before Spring Break, so that students will have adequate time to research their topics.

Grading: You will be assessed 300 points based on your individual examinations, as well as 100 points on your presentation.

Attendance: Students missing 20% of lectures (6 class periods) shall be dropped from the class with an F per the SRSU catalog. Please notify your instructor BEFORE missing class for authorized activities, death in the family, or illness.

Lecture courtesy: The general rules of classroom etiquette are below.

- 1) This is a lecture/discussion class, so feel free to talk about the material as a group. This doesn't mean you should talk about other things for the hour.
- 2) No eating, chewing, dipping, etc. (unless it is a brown bag session)
- 3) Please turn cell phones and pagers to silent while in class. They are disruptive to the entire class, and detract from learning.

Students with disabilities will be provided reasonable accommodations. If you would like to request such accommodations because of physical, mental, or learning disability, please contact the ADA Coordinator for Program Accessibility at 837-8203, FH 112.

Tentative Lecture Outline

Date	Lecture topic
Jan 14	Introduction
Jan 16	Ancient Science and Egypt
Jan 21	Ancient Science of Babylon.
Jan 23	Ancient Science of Phoenicia and Israel
Jan 28	Ancient Science of India
Jan 30	Ancient Science of China and the Far East
Feb 4	Ancient Science of China and the Far East cont.
Feb 6	Ancient Science of Mesoamerica
Feb 11	Exam I
Feb 13	Science in the time of the Greeks
Feb 18	Plato and Aristotle
Feb 20	Plato and Aristotle cont.
Feb 25	Greek Medicine
Feb 27	Hellenistic and Roman Science
Mar 3	Hellenistic and Roman Science cont.
Mar 5	Roman Medicine
Mar 10	Spring Break – No Class
Mar 12	Spring Break – No Class
Mar 17	Roman Medicine cont.
Mar 19	Exam II
Mar 24	Medieval Science of the East
Mar 26	Medieval Science of the East cont.
Mar 31	Medieval Science in the Christian West
Apr 2	The Renaissance – the Exact Sciences
Apr 7	The Renaissance – the Exact Sciences cont.
Apr 9	The Renaissance – the Descriptive Sciences
Apr 14	Student presentations
Apr 16	Student presentations
Apr 21	Student presentations
Apr 23	Student presentations
Apr 28	Student presentations
Apr 30	Dead Day
May 4(M) - 10:15am	Final Exam for TR 11:00-12:15

Note – This outline is subject to change for reasons of course interest, time constraint, or instructor whim. The exams will be administered on the dates given, unless material relevant for a given exam has not been covered. Under such cases, an exam may be moved a class period or two to aid in the clarity and understanding of the material.