SCIENCE EDUCATION  
SOUTHEAST MISSOURI STATE UNIVERSITY  
SYLLABUS  

ST 630  History, Nature, and Social Perspective of Science  
Fall 2001  

Catalog Description: An examination of the history of human scientific endeavor and the exploration of nature. How scientific facts, ideas, principles, laws, and theories have changed with the change of our conceptions in view of new evidence will be explored. The course will focus on the issues that have emerged in human society because of science and scientific ideas of the nature and the way the world works. Only students in the On-Line Masters Program in Teaching and Learning in Elementary Education may enroll in this course. Prerequisite: Successful completion of the program’s core courses. (3)  

Course Description: This course seeks to promote higher standards of knowledge and performance in science, based on the National Standards and State Frameworks. The focus of this course is on the history, philosophy and social perspective and social context of science. This course will examine how facts, ideas, laws, principles, and theories of science have evolved through centuries of human civilization. In particular, emphasis will be given to how different scientists view and explain the courses of natural events. It also focuses on explaining how the past history of science reflects the dynamic nature of science. The course will give ongoing consideration of the effect of scientific literacy on people’s daily lives as well as other important social issues such as equity; science, ethics, and politics; ideas and their development; scientific fraud versus integrity; dogma versus evidence.  

Rationale: Science education reform documents, such as the National Science Education Standards, (NSES) emphasize a science learning process that reflects science as a product of human endeavor. From this perspective, teaching history, nature, and social perspective of science will facilitate all science students to gain understanding of the dynamic process of science in order to provide opportunities for their students to view the nature of science as a human endeavor and the role that science has played in the development of diverse cultures.  

Credit Hours:  3  

Prerequisites: Successful completion of the program’s core courses.  

Conceptual Framework:  

Course Objectives:  
The student will:  
A. conceptualize how the history of scientific inquiries has changed our views of natural events throughout time.
### Course Content

**Course Content:** This course was developed in an outcomes-based format and was designed to conform to the 45 contact hour expectation common for three credit hour courses. The specific course content, outlined in the course objectives, will be delineated by the instructional design team and the instructor of record.

1. **Dynamic and human nature of science**—showing the change or evolution of scientific knowledge over time.
2. **Historical contributions to the development of modern scientific methods utilizing empirical standards and logic.**
3. **Scientific facts, ideas, principles, theories, and laws and their development.**
4. **Scientific attitudes and attitudes toward science.**
5. **The relationship of human endeavor and science.**
6. **Impact of science on and use in our human society**
7. **Science, ethics, and politics.**
8. **Development and use of scientific method.**
9. **Scientific inquiry.**
10. **Dogma versus evidence.**
11. **Study of the very human nature of science is a critical component within the K-12 science curriculum.**

### Methods of Instruction

**Methods of Instruction:** E-mail, chat, search, document sharing, journals, webliographies, threaded discussions, online assessments, narrated presentations, interactive assignments and activities

### Portfolio Requirements

**Portfolio Requirements:** A portfolio module will be developed to give evidence of competencies addressed in this class. Possible suggestions for the portfolio module for this course are:

1. Identifying and concept mapping of 3 science concepts tied to the evolutionary process of scientific ideas.
2. Identifying and reflecting on 5 related research articles (combination of History of science and Social Issues).
3. **Exploratory plan for an action research on implications of science on a societal issue.** (25% of course grade)
4. **Planning, implementing, and assessing a lesson which reflects the history, nature, and social perspective of science** (25% of course grade).

### Research Component

**Research Component:** The students will conduct an action research project that explores social issues that grow out of science.

### Grading Policy

**Grading Policy:** Specifics to be determined by the instructional design team and the instructor of record

- Science concept projects 25%
- Research article reviews 20%
- Action research project 25%
- Science lesson plan project 20%
- Threaded discussion participation 10%

Course Schedule: To be determined by the instructional design team and the instructor of record

Textbooks (Title, Author, ISBN): Selected by the instructional design team and the instructor of record. Suggested text:


Library Review: A review of literature will be required to support the action research project

*Journal of Research in Science Teaching*
*Journal of Science and Math*
*Science Education*

Other Required Software, Materials and Equipment: Additional materials may be selected by the instructional design team and the instructor of record.

Statement on Non-Discrimination: Missouri’s public universities are equal-opportunity educational institutions and do not discriminate on the basis of race, color, national or ethnic origin, religion, sex, or sexual orientation for programs, activities, or employment, in accordance with the Civil Rights Act of 1964 and Title IX of the Educational Amendments.

Statement on Academic Honesty: Missouri’s public universities are committed to intellectual integrity in their academic pursuits. Academic dishonesty constitutes unacceptable behavior and includes unauthorized assistance in completing required course assignments or testing. Unauthorized assistance includes electronic transfer. Plagiarism, that is, submitting someone else’s work or part there of, as your own, is considered to be cheating.

Breaches if intellectual integrity will result in disciplinary measures, based on the policies and procedures of the student’s home instruction. These may include:  
1) a failing grade for a particular assignment;  
2) a failing grade for the course;  
3) suspension for various lengths of time from the university; and/or  
4) permanent expulsion from the university.

Statement on Student Disabilities: Reasonable accommodations will be provided upon request for persons with disabilities in accordance with Section 504 of the Rehabilitation Act and the Americans with Disabilities Act of 1990. If you are a person with a disability, either learning related or physical, who requires an accommodation to participate in university programs, services, or activities, please contact the disability services staff at your university of record.
Expected Enrollment: 20-25

Special Fees: None

Bibliography:
