

**Department:** PLSC

**Course No.:** 150

**Credits:** 3

**Title:** Agricultural Technology and Society

**Contact:** George Elliott

**Content Area:** CA 3 Science and Technology

**Catalog Copy:** PLSC 150. Agricultural Technology and Society. Second semester. 3 credits. Berkowitz Development of agricultural systems and technologies and their influence on societies. Topics include plant and animal domestication, food and industrial crops and centers of production, environmental issues, and agricultural ethics.

**Course Information:** A) (Course description including goals and objectives): Review of the development of agricultural production techniques, and the technological, environmental, and research factors that have led to modern agricultural systems. These considerations will be related to the interactions of agricultural technology and the quality of life in various societies. The objective of the course is for students to: a) have an understanding of the origins, uses, and forms of the most important plants and animals used in human societies, b) be aware of the changes domesticates have undergone and the implications of these changes to modern agriculture and society at large, and c) be aware of some of the bioethical issues regarding agriculture that face society, and also how agricultural scientists undertake research to improve agriculture.

B) (Course requirements) Grading- two exams (15% of final grade for each exam), one mid-term exam (20% of grade), and one final exam (30% of grade) will be required. Exams will be primarily short-answer essays. Students will be required to write four one-page papers during the semester. These writing assignments will require students to read and cite relevant literature. Two of these papers will deal with a topic brought up in the current news during the semester. The topics for these two papers will include some aspect of plant or animal agriculture, environmental issues, or bioethics. The other two papers will discuss some aspect of a plant's use in modern society. Examples include food, fiber, medicine, cultural, and/or narcotic/hallucinogenic. Reading assignments will be assigned from a list of six reference books; copies of chapters will be provided to students.

C) (Major themes, issues, topics to be covered)- animal and plant domestication during development of civilizations; ethnobotany and linkage of plants and animals to cultural and

religious practices; the analysis of agriculture as a sustainable or unsustainable component of societies (current and historical); application of research methods including genetic engineering to Agriculture.

**Meets Goals of Gen Ed:** -Of the seven goals of the General Education requirement, the course will meet the following (numbers correspond to those on the GEOC URL: 1. Become articulate- through the research, analysis, and presentation necessary to complete the writing assignments for the course (i.e. four topics papers), students will learn to formulate and articulate opinions based on published information. 2. Acquire intellectual breadth and versatility- through an examination of the way in which agricultural practices have been developed in different societies throughout history, students will be exposed to a broad range of intellectual perspectives. 3. Acquire critical judgment - Evaluations of agricultural production systems, including conventional, 'organic', and those that employ genetic engineering, students will be exposed to the process of making critical judgments about application of technologies in society. 4. Acquire moral sensitivity- Exposure of students to agricultural technologies in diverse societies throughout recorded history will provide an opportunity for students to develop moral sensitivities to practices of diverse cultures. 5. Acquire awareness of their era and society- Though study of the role that agriculture and ethnobotany have played in societies of other eras, students will gain an awareness of how our own era and society differ from others. 6. Acquire consciousness of the diversity of human culture and experience- Through an analysis of historical agriculture; i.e. the way in which agriculture impacted societies and civilizations throughout history, students will gain an appreciation of the diversity cultures and of the human experience. 7. Acquire a working understanding of the process of acquiring and using knowledge- through study of how research has informed and changed agricultural practices, students will acquire an appreciation for the process of scientific inquiry and application of knowledge for societal gain.

**CA3 Criteria:** -Students will be acquainted with the formal process of scientific thought, observation, experimentation, and formal hypothesis testing by analysis of how research has led to development of agricultural technologies. Examples of this are: a) how genetic engineering, cloning, and tissue culture have led to improvements in agricultural productivity; and b) how risk assessment is applied to analysis of the impact on agriculture on the environment. Course information relevant to the evolution of agricultural practices throughout history and in various civilizations will expose students to how developments in agricultural technology have impacted the nature and quality of human existence. 1. Students will be exposed to the body of knowledge encompassing the development of modern and historical agricultural practices, and be exposed to contemporary scientific methods through study of current research in the area of genetic engineering of crop plants. 2. Through study of how agricultural research has been undertaken and applied (breeding, genetic engineering, etc.), students will be exposed to the process of scientific inquiry. 3. Unresolved questions of risk assessment of agricultural practices and their

impact on the environment and human health will allow for students to gain an appreciation for how progress at answering such unresolved questions can be made. 4. Study of the interaction of agricultural technology, society, and the environment will promote an interest, competence, and commitment to learning about how contemporary science and technology impacts the world and human society.