

October 29, 2008

TO: The General Studies Council
FROM: Nicholas Alozie *NOA*
Head, Social and Behavioral Sciences
RE: STS Courses Submitted for General Studies Review

Earlier this year the ABOR approved the B.S. degree program in Science, Technology, and Society for the Polytechnic campus (see attached memorandum from Provost Capaldi). Science, Technology, and Society (STS) is a social science discipline that investigates the interrelationship of science/technology and human systems. Typically, issues concerning the impact of science/technology on globalization, reproductive technology and human values, information technology and human relations, and science/technology and public policy and governance all come under the general domain of studies in STS. All of the STS courses included in this review are *required* to support this new degree program. These courses have all gone through the ACRES process and have received final approval (see attached front sheet from ACRES).



ARIZONA STATE UNIVERSITY

March 28, 2008

TO: David Schwalm, Dean
School of Applied Arts and Sciences

FROM: Elizabeth D. Capaldi
Executive Vice President and Provost of the University

SUBJECT: B.S. in Science, Technology, and Society

This is to notify you that on March 25, 2008, the Academic Affairs Committee of the Board of Regents approved the request for authorization to implement the B.S. in Science, Technology, and Society.

You may proceed to implement the proposal effective immediately. The following plan code has been established in OASIS, effective fall 2008: ECSTSBS

XC: Maria Allison
Bridgot Allcott
Jill Andrews
Nancy Dickson
Melinda Gebel
Jennifer Glawson
Heather Hoffart
Cecilia Hook
Glenn Irvin
Nancy Kiernan
Phyllis Lucie
Linda Pedersen
Julie Ramsden
Adrian Sannier
Gini Sater
David Young
Nicholas Alozie
Lisa Frank

EXECUTIVE VICE PRESIDENT AND PROVOST OF THE UNIVERSITY

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New Course Curriculum Form

Arizona State University

E STS 331 Ethical Issues in Science and Technology 3.0 - Spring 2009 | CL: None

Originator: Silvia Llamas-Flores **Status:** Approved **Department:** Social and Behavioral Sciences (Polytechnic)**Date Created:** 05/07/2008 **Submitted:** 05/14/2008 **Completed:** 10/20/2008 **To****ACETS:****Campus:** E**College:** Applied Arts and Sciences**Subject:** STS**Number:** 331**Title:** Ethical Issues in Science and Technology**Abbreviated title:** Ethical Issues in Sci and Tech**Semester hours:** 3.0**Effective semester:** - Spring**Summer justification:** N/A**Effective year:** 2009**Catalog description:** Examines the interconnections between values and science and technology by examining such topics as computers and privacy, medical malpractice, reproductive technologies, patents and hazardous facilities.**Primary component:** Lecture**Graded component:** *Same as primary component**Additional component(s):****Optional component(s):****Cross-listing:** | CL: None**Cross-listed course (s):****Enrollment Requirements?:** Yes**Prerequisite(s):** STS 101, 304, or instructor approval**Conditional prerequisite(s):****Corequisite(s):****Pre-/corequisite(s):****Repeat for credit:** No**Total hours allowed:****Total completions allowed:**

ARIZONA STATE UNIVERSITY EAST/TEMPE CAMPUS
GENERAL STUDIES PROGRAM COURSE PROPOSAL COVER FORM

Courses submitted to the GSC between 2/1 and 4/30 if approved, will be effective the following Spring.

Courses submitted between 5/1 and 1/31 if approved, will be effective the following Fall.

(SUBMISSION VIA ADOBE.PDF FILES IS PREFERRED)

DATE 10/31/2008

1. ACADEMIC UNIT: ASUP SOCIAL AND BEHAVIORAL SCIENCES
2. COURSE PROPOSED: STS 331 Ethical Issues in Science and Technology (3)
(prefix) (number) (title) (semester hours)
3. CONTACT PERSON: Name: Sherrie Loomis Phone: 480/727-1984
Mail Code: 0180 E-Mail: sherrie.loomis@asu.edu

4. ELIGIBILITY: New courses must be approved by the Tempe Campus Curriculum Subcommittee and must have a regular course number. For the rules governing approval of omnibus courses, contact the General Studies Program Office at 965-0739.

5. AREA(S) PROPOSED COURSE WILL SERVE. A single course may be proposed for more than one core or awareness area. A course may satisfy a core area requirement and more than one awareness area requirements concurrently, but may not satisfy requirements in two core areas simultaneously, even if approved for those areas. With departmental consent, an approved General Studies course may be counted toward both the General Studies requirement and the major program of study.

Core Areas

- Literacy and Critical Inquiry-L
Mathematical Studies-MA CS
Humanities and Fine Arts-HU
Social and Behavioral Sciences-SB
Natural Sciences-SQ SG

Awareness Areas

- Global Awareness-G
Historical Awareness-H
Cultural Diversity in the United States-C
(Note: one course per form)

6. DOCUMENTATION REQUIRED.

- (1) Course Description
(2) Course Syllabus
(3) Criteria Checklist for the area
(4) Table of Contents from the textbook used, if available

7. *In the space provided below (or on a separate sheet), please also provide a description of how the course meets the specific criteria in the area for which the course is being proposed.*

CROSS-LISTED COURSES: No Yes; Please identify courses: _____

Is this a multisection course?: No Yes; Is it governed by a common syllabus? _____

NICHOLAS ALOZIE
Chair/Director (Print or Type)

Nicholas Alozie
Chair/Director (Signature)

Date: 10/29/2008

Syllabus
Arizona State University Polytechnic Campus
School of Applied Arts and Sciences
Social and Behavioral Sciences

STS 331 Ethical Issues in Science and Technology

Fall, 2008

Schedule Line Number:

Satisfies General Studies:

Venue: Santa Catalina Hall 133
Time: 2:00PM – 3:15PM
Days: Monday and Wednesday
Meeting Dates: 8/25/2008 – 12/9/2008
Class Format: Lecture/Discussion

Professor: Dr. Nicholas Alozie
Office: Santa Catalina (SANCA) 252M
Tel.: (480) 727-1395
E-Mail: Alozie@asu.edu

Office Hours: Mondays & Wednesdays
12:00pm-1:30pm, and by appointment.

Course Description:

In this course we will explore the changing political choices and ethical dilemmas of American scientists from the atomic scientists of World War II to biologists in the present wrestling with the questions raised by cloning and other biotechnologies. As well as asking how we would behave if confronted with the same choices, we will try to understand the choices scientists have made by seeing them in their historical and political contexts. Besides lectures and discussions, class will include occasional videos and guest speakers. Some of the topics covered include the original development of nuclear weapons and the bombing of Hiroshima and Nagasaki; the effects of the Cold War on American science; radiation experiments on terminally ill patients; medical experiments on poor black patients with syphilis; whistle blowing; the effects of secrecy on science; the human genome project; human cloning; and ethics and research. The technologies of the 'information society' will be factored in throughout, as well, as these technologies impact science and technology at almost every level. The course will begin with an introduction to ethics and how they apply to science, technology and society. This will include consideration for how ethics are affected by varying cultural contexts; i.e. how relative or universal are applied ethics? This foundation will then allow us to pursue a wide range of subject areas and the relevant ethical dilemmas and questions.

Goals and Outcomes:

- Define ethics and how they are applied to science, technology and society, including possible cultural differences.
- Raise pertinent ethical questions regarding current and potential future developments in science and technology.
- Articulate, verbally and in writing, the ethical dimensions of a wide variety of issues in which science and technology affect society.
- Synthesize the ethical debate and develop your own opinion, demonstrated in writing, of a chosen dilemma in STS.

Required Materials:

- Harding, S. (2003). *Science and Other Cultures: Issues in Philosophies of Science and Technology*. Rutledge.
- Tavani, H. (2003). *Ethics and Technology: Ethical Issues in an Age of Information and Communication Technology*. Wiley.
- Selected Articles TBA, *ISSUES in Science and Technology*, e-journal online (free).
- Other free, online resources, as applicable.

Requirements and Grading:

Attendance is expected at all lectures and discussions. Participation in class and group discussions accounts for 20% of the final grade. Students should complete assigned readings in time for class to maximize fruitful discussion. The participation grade includes leading group discussions at least once. There are three paper assignments, each worth 20% of the grade, plus a midterm and a final each worth 20%. Consistent effort and improvement will be given extra weight in grading.

Each week there will be group discussion time, where a topic will be discussed within small groups, based upon the assigned reading for that week. A different group member will be responsible for leading the discussion each week. The topics to be discussed, the chosen leader, and how the discussion should be facilitated will all be covered in class.

The papers will be thoughtful essays with some amount of research involved. Each one will deal with a topic in ethics and science and technology. Research will involve information on the various angles of the issue, so that you will be able to discuss the ethical implications with a full understanding. Guidance will be given on the topic selection and how you can structure your paper. Each paper should be approximately 4-5 pages long, single spaced, and with at least 5 references, properly cited in the text.

and a bibliography; these references can be newspaper articles, books or academic journal articles. The criteria for written work includes original work (see note), clarity of communication, coverage of concepts, and depth of analysis.

NOTE ON WRITING ASSIGNMENTS: Academic honesty is expected of all students at Arizona State University. Cheating or plagiarism will result in disciplinary action against the student (s) involved. Cheating includes, but is not limited to, buying or copying research papers from somebody. Plagiarism also includes copying sections, including sentences and phrases of text out of research articles, or off internet websites, without citing the source and putting phrase/sentences in full quotation marks.

Participation	100 points
Paper 1	100
Paper 2	100
Paper 3	100
Midterm	100
Final	100
Total	500

Pursuant to the University Grading Scale, the cutoff for final grades in the course is:

A+	98%
A	95%
A-	92%
B+	88%
B	85%
B-	82%
C+	78%
C	70%
D	65%

To determine your final percentage, divide your final point total by the total points available in the class (500). For example, a final point total of 450 will equal a percentage total of 90% which will be a final grade of A-. Any final percentage total less than 65% will result in a failing final grade of E.

Weeks 1-3: First Section: What Is So Ethical, Unethical or Political about Science and Technology?

- Introduction to Applied Ethics: "Why Scientists and Engineers Might Care about Ethics and Politics"
- Historical Roots of "Disinterested" Experts in America

- Ethics Begins in the Home: Error, Fraud and Misconduct in Science
- Cultural relativism and universalism and ethics – Whose ethics?

Weeks 4-6: Second Section: the New Art of War: Science and Military

- Chemical and Biological Warfare, or “Paths Not Taken”?
- Manhattan Project, and the Decision to Bomb Hiroshima & Nagasaki
- The Hydrogen Bomb and the Cold War Arms Race
- The Revolution in Military Affairs and Asymmetrical Warfare

Weeks 7-9: Third Section: Biotechnology – extending life, creating life?

- Animal Subjects, Vivisections, and Ethical Safeguards
- Subjecting Humans and Consenting Adults
- Changing life on earth

Weeks 10-12: Fourth Section: Risky Businesses and Tattle-tails

- Polluting Environments and Contaminating Bodies
- Big Disasters and Apportioning Blame: Challenger and Chernobyl
- Decision-making in engineering and science

Weeks 13-15: Fifth Section: Big Science and Big Money, and Government

- Commercializing Science & Patenting Life: Nature
- Be Fruitful and Multiply: Governing Reproductive Technologies
- Listening to Experts: Legislative, Executive and Judicial Structures
- Disregarding Advice on the Economy and Global Warming

Arizona State University Academic Policies:

Plagiarism:

Academic integrity and honesty is expected of all students at Arizona State University, and is so stated in the ASU Student Code of Conduct (available at <http://www.asu.edu/studentaffairs/studentlife/judicial/>). Plagiarism or cheating can result in the grade of "XE". The XE grade denotes failure through academic dishonesty. For more information on plagiarism and the ramifications of academic dishonesty see: http://www.asu.edu/studentaffairs/studentlife/judicial/academic_integrity.htm. Students are responsible for understanding these policies and following proper academic research and citation protocol.

Accommodations for Disabilities:

Accommodations for disabilities are made according to the policy of Arizona State University, which is in compliance with the Americans with Disabilities Act. For more information on ASU's Disability Resource Center see <http://www.asu.edu/studentaffairs/ed/drc/>.

Arizona State University Criteria Checklist for

SOCIAL AND BEHAVIORAL SCIENCES [SB]

Rationale and Objectives

The importance of the social and behavioral sciences is evident in both the increasing number of scientific inquiries into human behavior and the amount of attention paid to those inquiries. In both private and public sectors people rely on social scientific findings to assess the social consequences of large-scale economic, technological, scientific, and cultural changes.

Social scientists' observations about human behavior and their unique perspectives on human events make an important contribution to civic dialogue. Today, those insights are particularly crucial due to the growing economic and political interdependence among nations.

Courses proposed for General Studies designation in the Social and Behavioral Sciences area must demonstrate emphases on: **(1)** social scientific theories and principles, **(2)** the methods used to acquire knowledge about cultural or social events and processes, and **(3)** the impact of social scientific understanding on the world.

Proposer: Please complete the following section and attach appropriate documentation.

ASU--[SB] CRITERIA					
A SOCIAL AND BEHAVIORAL SCIENCE [SB] course should meet all of the following criteria. If not, a rationale for exclusion should be provided.					
YES	NO		Identify Documentation Submitted		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. Course is designed to advance basic understanding and knowledge about human interaction.	Syllabus		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. Course content emphasizes the study of social behavior such as that found in: <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> • ANTHROPOLOGY • ECONOMICS • CULTURAL GEOGRAPHY • HISTORY </td> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> • LINGUISTICS • POLITICAL SCIENCE • SOCIAL PSYCHOLOGY • SOCIOLOGY </td> </tr> </table>	<ul style="list-style-type: none"> • ANTHROPOLOGY • ECONOMICS • CULTURAL GEOGRAPHY • HISTORY 	<ul style="list-style-type: none"> • LINGUISTICS • POLITICAL SCIENCE • SOCIAL PSYCHOLOGY • SOCIOLOGY 	Syllabus
<ul style="list-style-type: none"> • ANTHROPOLOGY • ECONOMICS • CULTURAL GEOGRAPHY • HISTORY 	<ul style="list-style-type: none"> • LINGUISTICS • POLITICAL SCIENCE • SOCIAL PSYCHOLOGY • SOCIOLOGY 				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. Course emphasizes: a. the distinct knowledge base of the social and behavioral sciences (e.g., sociological anthropological). OR b. the distinct methods of inquiry of the social and behavioral sciences (e.g., ethnography, historical analysis).	Syllabus		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Course illustrates use of social and behavioral science perspectives and data.	Syllabus		
		THE FOLLOWING TYPES OF COURSES ARE EXCLUDED FROM THE [SB] AREA EVEN THOUGH THEY MIGHT GIVE SOME CONSIDERATION TO SOCIAL AND BEHAVIORAL SCIENCE CONCERNS: <ul style="list-style-type: none"> • Courses with primarily fine arts, humanities, literary, or philosophical content. • Courses with primarily natural or physical science content. • Courses with predominantly applied orientation for professional skills or training purposes. • Courses emphasizing primarily oral, quantitative, or written skills. 			

Course Prefix	Number	Title	Designation
STS	331	<u>ETHICAL ISSUES IN SCIENCE AND TECHNOLOGY</u>	SB

Explain in detail which student activities correspond to the specific designation criteria. Please use the following organizer to explain how the criteria are being met.

Criteria (from checklist)	How course meets spirit (contextualize specific examples in next column)	Please provide detailed evidence of how course meets criteria (i.e., where in syllabus)
Course is designed to advance basic understanding and knowledge about human interaction and emphasizes the study of social behavior such as found in anthropology, economics, cultural geography, history, political science, social psychology, and sociology.	This course explores the changing political choices and ethical dilemmas of American scientists from the atomic scientists of World War II to biologists in the present wrestling with the questions raised by cloning and other biotechnologies. As well as asking how we would behave if confronted with the same choices, we will try to understand the choices scientists have made by seeing them in their historical and political contexts. Besides lectures and discussions, class will include occasional videos and guest speakers. Some of the topics covered include the original development of nuclear weapons and the bombing of Hiroshima and Nagasaki; the effects of the Cold War on American science; radiation experiments on terminally ill patients; medical experiments on poor black patients with syphilis; whistle blowing; the effects of secrecy on science; the human genome project; human cloning; and ethics and research. The technologies of the 'information society' will be factored in throughout, as well, as these technologies impact science and technology at almost every level. The course will begin with an introduction to ethics and how they apply to science, technology and society. This will include consideration for how ethics are affected by varying cultural contexts; i.e. how relative or universal are applied ethics? This	The learning outcomes in this course include: <ul style="list-style-type: none"> • Defining ethics and how they are applied to science, technology and society, including possible cultural differences. • Raising pertinent ethical questions regarding current and potential future developments in science and technology. • Articulating, verbally and in writing, the ethical dimensions of a wide variety of issues in which science and technology affect society. • Synthesizing the ethical debate and develop your own opinion, demonstrated in writing, of a chosen dilemma in STS.

	<p>foundation will then allow us to pursue a wide range of subject areas and the relevant ethical dilemmas and questions.</p>	
<p>Course emphasizes both the distinct knowledge of the social and behavioral sciences and the distinct methods of inquiry of the social and behavioral sciences.</p>	<p>The course emphasizes the ethical questions surrounding the production and application of certain technologies. As the question goes, should we use technology to advance our values as human beings or should we allow technology to take us to new heights that then change our conceptions of ourselves as humans? This is core social science material.</p>	<p>As pages 3- 4 of the syllabus show, the topics included in this course emphasize a uniquely social and behavioral science knowledge base. These topics include technology and war-making, biotechnology, risky technologies, and profiteering from technologies.</p>
<p>Course illustrates use of social and behavioral science perspectives and data.</p>	<p>The course relies on accumulated literature predicated upon practical and theoretical evidence from the social and behavioral sciences.</p>	<p>On pages 3-4 of the syllabus, the weekly outline of the course specifies in clear details the social and behavioral sciences base of this material. It is worthwhile to also call attention to the books selected in this course relating ethical and cultural considerations to science and technology.</p>