ASU

ARIZONA STATE UNIVERSITY

GENERAL STUDIES COURSE PROPOSAL COVER FORM

Course information:

*Copy and paste **current** course information from Class Search/Course Catalog.*

College/School	(Select One)			Department	**The School for the Future of Innovation in Society**
Prefix	**FIS**	Number	331	Title	Technology and the Modern World Units: 3

Is this a cross-listed course?   No   If yes, please identify course(s)

Is this a shared course?   No   If so, list all academic units offering this course

*Note– For courses that are crosslisted and/or shared, a letter of support from the chair/director of **each** department that offers the course is required for **each** designation requested. By submitting this letter of support, the chair/director agrees to ensure that all faculty teaching the course are aware of the General Studies designation(s) and will teach the course in a manner that meets the criteria for each approved designation.*

Is this a permanent numbered course with topics?   No

If yes, all topics under this permanent numbered course must be taught in a manner that meets the criteria for the approved designation(s). It is the responsibility of the chair/director to ensure that all faculty teaching the course are aware of the General Studies designation(s) and adhere to the above guidelines.

Chair/Director Initials

_____
(Required)

Course description: **See attached**

Requested designation: Literacy and Critical Inquiry–L   **Mandatory Review:** (Choose one)
*Note– a **separate** proposal is required for each designation.*

Eligibility:

Permanent numbered courses must have completed the university's review and approval process.
For the rules governing approval of omnibus courses, contact Phyllis.Lucie@asu.edu.

Submission deadlines dates are as follow:

For Fall 2016 Effective Date: October 1, 2015   For Spring 2017 Effective Date: March 10, 2016

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.

Checklists for general studies designations:

Complete and attach the appropriate checklist
- Literacy and Critical Inquiry core courses (L)
- Mathematics core courses (MA)
- Computer/statistics/quantitative applications core courses (CS)
- Humanities, Arts and Design core courses (HU)
- Social-Behavioral Sciences core courses (SB)
- Natural Sciences core courses (SQ/SG)
- Cultural Diversity in the United States courses (C)
- Global Awareness courses (G)
- Historical Awareness courses (H)

A complete proposal should include:

☒ Signed course proposal cover form
☒ Criteria checklist for General Studies designation(s) being requested
☒ Course catalog description
☒ Sample syllabus for the course
☒ Copy of table of contents from the textbook and list of required readings/books

It is respectfully requested that proposals are submitted electronically with all files compiled into one PDF.

Contact information:

Name	Jameson Wetmore	E-mail	Jameson.Wetmore @asu.edu	Phone	480-727-0750

Department Chair/Director approval: *(Required)*

Chair/Director name (Typed):   David Guston   Date: 3/4/16

Chair/Director (Signature):

Rev. 4/2015

LITERACY AND CRITICAL INQUIRY - [L]

Rationale and Objectives

Literacy is here defined broadly as communicative competence—that is, competence in written and oral discourse. **Critical inquiry** involves the gathering, interpretation, and evaluation of evidence. Any field of university study may require unique critical skills that have little to do with language in the usual sense (words), but the analysis of written and spoken evidence pervades university study and everyday life. Thus, the General Studies requirements assume that all undergraduates should develop the ability to reason critically and communicate using the medium of language.

The requirement in Literacy and Critical Inquiry presumes, first, that training in literacy and critical inquiry must be sustained beyond traditional First Year English in order to create a habitual skill in every student; and, second, that the skill levels become more advanced, as well as more secure, as the student learns challenging subject matter. Thus, two courses beyond First Year English are required in order for students to meet the Literacy and Critical Inquiry requirement.

Most lower-level [L] courses are devoted primarily to the further development of critical skills in reading, writing, listening, speaking, or analysis of discourse. Upper-division [L] courses generally are courses in a particular discipline into which writing and critical thinking have been fully integrated as means of learning the content and, in most cases, demonstrating that it has been learned.
Notes:

1. ENG 101, 107 or ENG 105 must be prerequisites
2. Honors theses, XXX 493 meet [L] requirements
3. The list of criteria that must be satisfied for designation as a Literacy and Critical Inquiry [L] course is presented on the following page. This list will help you determine whether the current version of your course meets all of these requirements. If you decide to apply, please attach a current syllabus, or handouts, or other documentation that will provide sufficient information for the General Studies Council to make an informed decision regarding the status of your proposal.

Revised April 2014

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

ASU - [L] CRITERIA			
TO QUALIFY FOR **[L]** DESIGNATION,THE COURSE DESIGN MUST PLACE A MAJOR EMPHASIS ON COMPLETING CRITICAL DISCOURSE--**AS EVIDENCED BY THE FOLLOWING CRITERIA:**			
YES	**NO**		**Identify Documentation Submitted**
☒	☐	**CRITERION 1:** At least 50 percent of the grade in the course should depend upon writing assignments (see Criterion 3). Group projects are acceptable only if each student gathers, interprets, and evaluates evidence, and prepares a summary report. *In-class essay exams may not be used for [L] designation.*	Syllabus

1.   Please describe the assignments that are considered in the computation of course grades--and indicate the proportion of the final grade that is determined by each assignment.

2.   **Also:**

Please **circle, underline, or otherwise mark** the information presented in the most recent course syllabus (or other material you have submitted) that verifies **this description** of the grading process--and label this information **"C-1".**

C-1

☒	☐	**CRITERION 2:** The writing assignments should involve gathering, interpreting, and evaluating evidence. They should reflect critical inquiry, extending beyond opinion and/or reflection.	Syllabus

1.   Please describe the way(s) in which this criterion is addressed in the course design.

2.   **Also:**

Please **circle, underline,** or **otherwise mark** the information presented in the most recent course syllabus (or other material you have submitted) that verifies **this description** of the grading process--and label this information **"C-2".**

C-2

☒	☐	**CRITERION 3:** The syllabus should include a minimum of two writing and/or speaking assignments that are substantial in depth, quality, and quantity. Substantial writing assignments entail sustained in-depth engagement with the material. Examples include research papers, reports, articles, essays, or speeches that reflect critical inquiry and evaluation. Assignments such as brief reaction papers, opinion pieces, reflections, discussion posts, and impromptu presentations are not considered substantial writing/speaking assignments.	Syllabus

1.   Please provide relatively detailed descriptions of two or more substantial writing or speaking tasks that are included in the course requirements

2.   **Also:**

Please **circle, underline,** or **otherwise mark** the information presented in the most recent course syllabus (or other material you have submitted) that verifies **this description** of the grading process--and label this information **"C-3".**

C-3

ASU - [L] CRITERIA			
YES	**NO**		**Identify Documentation Submitted**
☒	☐	**CRITERION 4:** These substantial writing or speaking assignments should be arranged so that the students will get timely feedback from the instructor on each assignment in time to help them do better on subsequent assignments. *Intervention at earlier stages in the writing process is especially welcomed.*	Syllabus

1. Please describe the sequence of course assignments--and the nature of the feedback the current (or most recent) course instructor provides to help students do better on subsequent assignments

2. **Also:**

Please **circle, underline,** or **otherwise mark** the information presented in the most recent course syllabus (or other material you have submitted) that verifies **this description** of the grading process--and label this information **"C-4".**

C-4

Course Prefix	Number	Title	General Studies Designation
FIS	331	Technology and the Modern World	L

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 checksheet)	How course meets spirit (contextualize specific examples in next column)	Please provide detailed evidence of how course meets criteria (i.e., where in syllabus)
1.	50% of the overall grade of the course is drawn from a series of writing assignments.	Assignment Breakdown: 20% of the overall grade will be given for one-half to three-quarter page Written Lecture Preps. 10% of the overall grade will be given for the first research paper. 20% of the overall grade will be given for the second research paper.
2.	The written assignments are designed to have students critically explore and evaluate the role of technology in society.	With the Written Lecture Preps Students will be trained to connect their own ideas to the reading, connect the reading to previous readings, and pose questions that they would like to raise in class. With the two research papers students will be asked to do a deep critical exploration of a technology and corresponding social change. Students will not be allowed to simply argue that a technology is "good" or "bad," but rather must explore how the adoption of a particular technology has changed the world we live in.
3.	The major academic work for the course will require students to propose, write, present, and rewrite a brief research paper. The paper allows students to explore in a more in-depth and thorough manner one of the themes of the course or a case study of how sociotechnical systems are developed and maintained.	There are four main parts to this assignment: First, to help students prepare this paper, in Week 4 they will bring a one paragraph sketch of their paper idea to class. Each student will have 30-45 seconds to present their idea to their section and get feedback from their classmates. A week later, in Week 5, they will submit a one-page prospectus of their paper that includes a brief description of their topic, an explanation of how they will approach that argument, and the resources they will be using. This preparatory assignment gives the professor a chance to provide helpful feedback on their ideas and arguments. Second, an initial version of the paper (four to five double spaced pages) will be due in Week 8. The paper must be submitted through blackboard and is worth 10% of their course grade. It will be stressed to students that the first version should not be a draft, but rather a completed paper with a sound thesis and well articulated argument. Drafts will likely receive very poor grades. Third, once the first version of their research paper is completed, students will be asked to present their work to their weekly seminar. Presentations are scheduled in weeks 11 and 12. Their presentations will be worth 10% of their final grade and will be judged on the way they communicate their ideas and handle questions.

		Fourth, based on the feedback they get during the presentation and on their first paper, students will be asked to develop their four to five page research paper into a five to six page research paper. This final paper is worth 20% of their grade.
4.	Students will get written comments back on their Written Lecture Preps to help them improve both their analytical skills and their written skills. The professor will take special care to give detailed comments especially at the beginning of the semester.	The progression of research papers ensures that students get significant and multiple instances of feedback. Students get feedback from the faculty on their initial idea, written proposal, first research paper, research presentation, and final research paper. Students also get feedback from their peers on their initial idea and their research presentation. The goal of this project is for each student to develop their own research project from initial motivation to final polished project.

FIS 331 - Technology and the Modern World Course description: Explores how technological systems are developed and embedded in the modern world with an eye to playing a role in creating better futures. Examines how machines and techniques can shape institutions, relationships and values. Challenges students to envision futures that they want and work to develop strategies for moving us (and our systems) toward those futures. Analyzes technologies past, present and imagined, and describes the ways in which technologies shape our world and the ways in which we shape those technologies. Through repeated practice in class students play a productive role in and even facilitate conversations that tease out the relationships between values and technological systems.

Technology and the Modern World
FIS 331

Prof. Jameson Wetmore
wetmore@asu.edu 480-727-0750
Office: PE West 118A
Office Hours: MW 12-2pm or by appointment

This class will explore how technological systems are developed and embedded in the modern world with an eye to playing a role in creating better futures. It will examine how machines and techniques can shape institutions, relationships, and values. With this understanding students will be challenged to envision futures that they want and work to develop strategies for moving us (and our systems) towards those futures. By the end of this course students should be able to analyze technologies past, present, and imagined, and describe the ways in which technologies shape our world, and the ways in which we shape those technologies. Through repeated practice in class students will be able to play a productive role in and even facilitate conversations that tease out the relationships between values and technological systems.

Most of the course readings will be drawn from Johnson & Wetmore's *Technology and Society: Building our Sociotechnical Future* (The MIT Press, 2008) which is available at the University Bookstore and numerous online merchants. (Note that you don't need the expensive hardcover. The softcover works just fine!) Additional readings will be available on the University's Blackboard system. Blackboard will be used to communicate other important information as well.

Course Requirements

This course is made up of two components. The first is the Monday/Wednesday lecture. These lectures will combine presentation of new ideas and examples, explication of the readings, and collective exploration of ideas and implications. The lectures will be more interactive and engaging than the term might lead you to expect. In order to benefit from them, you will need to prepare. Simply reading the required articles is not enough. Therefore before each lecture you will write a one-half to three-quarter page Lecture Prep of the reading. Your goal in these reflections will be to connect your own ideas to the reading, connect the reading to previous readings, and pose questions that you would like to raise in class (**C-2**). Written Lecture Preps for the M/W lectures are worth **20**% of your grade. (**C-1**)

The second component is the weekly seminar. Seminar sessions will be led by TAs and will meet in different places. It is imperative that you not only attend the seminars but that you also engage and participate in them. To emphasize this, a significant part of your overall grade (**10**%) will be based on your engagement in your seminar section. As part of your responsibilities in the seminar, you will be asked once during the semester to present a popular news article that explores an interesting angle on some technological system. You will need to post the article to blackboard by midnight two days before your seminar is held and lead a brief discussion about it during your seminar. Your popular news article presentation will be worth **5**% of your grade for the semester. At each seminar section you also need to turn in one question on each popular news article.

Your major academic work for the course will be to write, present, and rewrite a brief research paper. The paper will allow you to explore in a more in-depth and thorough manner one of the themes of the course

or a case study of how sociotechnical systems are developed and maintained. There are four main parts to this assignment:

First, to help you prepare this paper, in Week 4 you will bring a one paragraph sketch of your paper idea to class. A week later, in Week 5, you will submit a one-page prospectus of your paper that includes a brief description of your topic, an explanation of how you will approach that argument, and the resources you will be using. This assignment won't be graded separately, but if it is not turned in 5 percentage points will be deducted from your paper grade. You really want to do this preparatory assignment well because you will receive helpful feedback on your ideas and arguments.

Second, an initial version of the paper (four to five double spaced pages) will be due in Week 8. The paper must be submitted through blackboard and is worth **10%** of your course grade. (**C-1**) (Please include your last name as part of the name of the file.) The first version should not be a draft, but rather a completed paper with a sound thesis and well articulated argument. Drafts will likely receive very poor grades.

Third, once the first version of your research paper is completed, you will be asked to present your work to your weekly seminar. Presentations are scheduled in weeks 11 and 12. We will adjust the normal class schedule for those weeks. It is your responsibility to attend class so you can sign up for a time slot and keep abreast of the revised schedule. Your presentation will be worth **10%** of your final grade and will be judged on the way you communicate your ideas and handle questions.

Fourth, based on the feedback you get during the presentation and on your first paper, you will be asked to develop your four to five page research paper into a five to six page research paper. This final paper should be submitted on blackboard in Week 13 and will be worth **20%** of your grade. (**C-1**) (**C-3, C-4**)

Finally, there will be two short-answer exams during the semester that will be based largely on the readings and class discussions. The first exam will be worth **15**% of your grade. The second exam covers slightly less material and will be worth **10**% of your grade. There is **no extra credit** available for this class.

Assignment Breakdown

Written Lecture Preps	20%
Participation in Seminar	10%
Pop News Article Presentation	5%
First Version of Research Paper	10%
First Exam	15%
Research Paper Presentation	10%
Second Version of Research Paper	20%
Second Exam	10%
Total =	100%

Grading Scale

A-/ A/ A+	90.0-92.4/ 92.5-97.4/ 97.5-100	*Excellent*
B- /B/ B+	80.0-82.4/ 82.5-87.4/ 87.5-89.9	*Good*
C/ C+	70.0-77.4/ 77.5-79.9	*Average*
D	60.0-69.9	*Passing*
E	<60	*Failure*
XE		*Failure due to Academic Dishonesty*

Students interested in adding an **honors contract** to the class should contact the professor in the first week of classes.

Week 1
M - Opening class (no readings)
W – **Richard Fleischer,** Soylent Green

Week 2
M - **Freeman J. Dyson**, "Technology & Social Justice"; **Francis Fukuyama**, "The Prolongation of Life"
W - **Robert L. Heilbroner**, "Do Machines Make History?"

Week 3
M - **Trevor J. Pinch and Wiebe Bijker**, "The Social Construction of Facts and Artifacts"
W - **Thomas P. Hughes**, "Technological Momentum"

Week 4
M - **Previous Student Papers**
(Papers on blackboard)
W - **Langdon Winner**, "Do Artifacts have Politics?"

❧ One Paragraph Research Paper Idea Due ❧

Week 5
M - **Joel Tarr,** "The City and Technology" (on blackboard)
W – **Lawrence Lessig,** "Code is Law"

❧ One Page Prospectus Due ❧

Week 6
M - **Richard Dyer**, *White*; **Rachel N. Weber**, "Manufacturing Gender in Commercial and Military Cockpit Design"
W - **Stellan Welin**, "Reproductive Ectogenesis: The third era of human reproduction and some moral consequences"

Week 7
M - **First Exam**
W – **Daniel Sarewitz**, "Pas de Trois: Science, Technology and the Marketplace"

Week 8

M - **George Ritzer**, "Control: Human and Nonhuman Robots"
❧ First Version of Research Paper Due ❧
W - **Jameson M. Wetmore**, "Amish Technology: Reinforcing Values, Building Community"

Week 9
M – **Charles Perrow**, "Complexity, Coupling, and Catastrophe"
W – **Lance H. Gunderson**, "Adaptive Dancing: Interactions between social resilience and ecological crises"

Week 10
M - **Bruno Latour**, "Where are the Missing Masses? The sociology of a Few mundane Artifacts"
W - **Fabio Salamanca-Buentello et al.**, "Nanotechnology and the Developing World"; **Noela Invernizzi and Guillermo Foladori**, "Nanotechnology and the Developing World: Will Nanotechnology Overcome Poverty or Widen Disparities?"

Week 11
Presentations in recitation groups

Week 12
Presentations in recitation groups

Week 13
M – **Bruce Schneier**, "Security Trade-Offs are Subjective" and "Technology Creates Security Imbalances"
W - **Ken Caldeira**, "Geoengineering to Shade Earth"

❧ Second Research Paper Due ❧

Week 14
M - **Gary Chapman**: Shaping Technology for the 'Good Life': the Technological Imperative versus the Social Imperative"
W - **Roopali Phadke**, "People's Science in Action: The Politics of Protest and Knowledge Brokering in India"
❧ Second Exam during Exam Week ❧

Incompletes: A mark of "I" (incomplete) can be given by the instructor when you are otherwise doing acceptable work but are unable to complete the course because of illness or other conditions beyond your control. You are required to arrange with the instructor for the completion of the course requirements. The arrangement must be recorded using the form at http://students.asu.edu/forms/incomplete-grade-request. Students should be proactive and discuss this with their instructor and TA before the end of the semester. Students who do not complete this form before the end of the semester cannot be given an incomplete and will be awarded a grade based on the work they have completed.

Late Assignments: Late assignments will have $1/3^{rd}$ of a letter grade deducted each day they are late. Advanced written or e-mailed notice that you will miss a class or have to turn in an assignment late could help your cause.

Grade Appeals: ASU has formal and informal channels to appeal a grade. If you wish to appeal any grading decisions, please see: http://catalog.asu.edu/appeal

Student Standards: Students are required to read and act in accordance with university and Arizona Board of Regents policies, including: The ABOR Code of Conduct: Arizona Board of Regents Policies 5-301 through 5-308: http://www.azregents.edu/policymanual/default.aspx

Professionalism in the Classroom: While learning happens throughout ASU, the classroom is a particularly important focal point. Students are asked to contribute to a collegial atmosphere where ideas can be exchanged, discussed, and debated freely by avoiding disruptions through their own behavior and the distractions of their technology. Disruptive, threatening or violent behavior will be dealt with according to the policies in the Student Services Manual, SSM 104–02. Students wishing to record lectures electronically must first get permission from the instructor.

It is impossible to learn from your fellow students when you or they are not there. As such attendance is required in this course. Should you have to miss a class, contact your instructor as far in advance as possible. Depending on the nature of the absence the instructor may elect to deduct points from your overall grade. Absences can be excused for religious observances or practices that are in accord with ACD 304–04 or university sanctioned events/activities that are in accord with ACD 304–02.

Academic Integrity: Academic honesty is expected of all students in all examinations, papers, laboratory work, academic transactions and records. The possible sanctions include, but are not limited to, appropriate grade penalties, course failure (indicated on the transcript as a grade of E), course failure due to academic dishonesty (indicated on the transcript as a grade of XE), loss of registration privileges, disqualification and dismissal. For more information, see http://provost.asu.edu/academicintegrity.

If you fail to meet the standards of academic integrity in any of the criteria listed on the university policy website, sanctions will be imposed by the instructor, school, and/or dean. Academic dishonesty includes borrowing ideas without proper citation, copying others' work (including information posted on the internet), and failing to turn in your own work for group projects. Please be aware that if you follow an argument closely, even if it is not directly quoted, you must provide a citation to the publication, including the author, date, and page number. If you directly quote a source, you must use quotation marks and provide the same sort of citation for each quoted sentence or phrase. You may discuss assignments with other students, however, all writing that you turn in must be done independently. If you have any doubt about whether the form of cooperation you contemplate is acceptable, ask the TA or the instructor in advance of turning in an assignment. Please be aware that the work of all students submitted electronically can be scanned using SafeAssignment, which compares them against everything posted on the internet, online

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article/paper databases, newspapers and magazines, and papers submitted by other students. Turning in an assignment (all or in part) that you completed for a previous class is considered self-plagiarism and falls under these guidelines. Any infractions of self-plagiarism are subject to the same penalties as copying someone else's work without proper citations. Students who have taken this class previously and would like to use the work from previous assignments should contact the instructor for permission to do so.

Prohibition of Commercial Note Taking Services: In accordance with ACD 304-06 Commercial Note Taking Services, written permission must be secured from the official instructor of the class in order to sell the instructor's oral communication in the form of notes. Notes must have the note taker's name as well as the instructor's name, the course number, and the date.

Student Support and Disability Accommodations: In compliance with the Rehabilitation Act of 1973, Section 504, and the Americans with Disabilities Act of 1990, professional disability specialists and support staff at the Disability Resource Center (DRC) facilitate a comprehensive range of academic support services and accommodations for qualified students with disabilities. Qualified students with disabilities may be eligible to receive academic support services and accommodations. Eligibility is based on qualifying disability documentation and assessment of individual need. Students who believe they have a current and essential need for disability accommodations are responsible for requesting accommodations and providing qualifying documentation to the DRC. Every effort is made to provide reasonable accommodations for qualified students with disabilities. Qualified students who wish to request an accommodation for a disability should contact their campus DRC at: http://www.asu.edu/studentaffairs/ed/drc/ If you are a student in need of special arrangements we will do all we can to help, based on the recommendations of these services. For the sake of equity for all students, we cannot make any accommodations without formal guidance from these services.

Sexual Violence and Harassment: Title IX is a federal law that provides that no person be excluded on the basis of sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Both Title IX and university policy make clear that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed on the basis of sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at http://sexualviolenceprevention.asu.edu/faqs/students.

Drop and Add Dates/Withdrawals: Please refer to the academic calendar on the deadlines to drop/withdraw from this course. Consult with your advisor and notify your instructor if you are going to drop/withdraw this course. If you are considering a withdrawal, review the following policies: Withdrawal from Classes, Medical/Compassionate Withdrawal.

Email Communications
All email communication for this class will be done through your ASU email account and the blackboard site. You should be in the habit of checking your ASU email regularly as you will not only receive important information about your class(es), but other important university updates and information. You are solely responsible for reading and responding if necessary to any information communicated via email. For help with your email go to: http://help.asu.edu/sims/selfhelp/SelfHelpHome.seam?dept_pk=822 and file a help desk ticket by clicking on "My Help Center."

Campus Resources: As an ASU student you have access to many resources on campus. This includes tutoring, academic success coaching, counseling services, financial aid, disability resources, career and internship help and many opportunities to get involved in student clubs and organizations.

Tutoring: https://tutoring.asu.edu/tutoring

Counseling Services: http://students.asu.edu/counseling
Financial Aid: http://students.asu.edu/financialaid
Major/Career Exploration: https://cls.asu.edu/majorexploration
Career Services: http://students.asu.edu/career
Student Organizations: http://www.asu.edu/studentaffairs/mu/clubs/

This syllabus is subject to change. It is your responsibility to read e-mail updates from the instructor and TAs as well as check the blackboard site for alterations made as events occur.

Technology & Society
Research Papers #1 and #2

Technologies are usually described as a hunk of nuts and bolts. When we view them like that it is difficult to see how they impact the world, how they change our lives, and why we should carefully consider them. The goal of this paper is to think about technology much more broadly, to think about technology as it is integrated into the world.

In this research paper you will analyze a technology and its accompanying social change. The specific topic is your choice. You can study a technology that you use every day – like your skateboard or cell phone – or you can pick something that you may not have contact with every day – like one of the topics addressed in the popular news articles we've been reading.

In your analysis, it may be helpful to follow three steps (not necessarily in this order, and you need not answer all of the questions below):

1. What is the technical change you are analyzing? What new abilities does the technology allow? I.e., what can we do with it that we couldn't do before? It may help to think about how it has replaced old technologies, how it has built on previous technologies and what is required for it to work successfully.

2. What is the social change? How have people, governments, institutions changed to make use of the technology? Were regulations created to govern its construction or use? Does the technology promote certain values? Has it made certain values more difficult to achieve? Who is allowed to use the technology? Who isn't allowed to use the technology? Have people changed their relationships with people, institutions, or the environment because of the way they use the technology?

3. As a summary, explain how the world is different now than it was before. Make sure you don't just focus on the new abilities that we now have. For instance if you pick your cell phone you need to go quite a bit deeper than "it allows me to talk to my friends wherever they are." Think about how you would behave if you didn't have it. Think about relationships you have that you wouldn't otherwise have. What did we gain? What did we lose? You don't need to explain whether you think these changes are good or not. The main thing is to explain to your reader how the adoption of a particular technology has changed the world we live in. (**C-2**)

The first version of the paper should be 4-5 pages double spaced. That's not very long actually. You will probably have to work hard to keep the paper that short. You'll get comments on that first paper as well as feedback on your research during your research presentation during weeks 11 and 12 and you'll use that to inform the second version of the paper that you'll turn in during week 13.

FIS 331 List of Required Readings

Richard Fleischer, Soylent Green

Freeman J. Dyson, "Technology & Social Justice"

Francis Fukuyama, "The Prolongation of Life"

Robert L. Heilbroner, "Do Machines Make History?"

Trevor J. Pinch and Wiebe Bijker, "The Social Construction of Facts and Artifacts"

Thomas P. Hughes, "Technological Momentum"

Langdon Winner, "Do Artifacts have Politics?"

Joel Tarr, "The City and Technology" (on blackboard)

Lawrence Lessig, "Code is Law"

Richard Dyer, *White*; Rachel N. Weber, "Manufacturing Gender in Commercial and Military Cockpit Design"

Stellan Welin, "Reproductive Ectogenesis: The third era of human reproduction and some moral

    consequences"

Daniel Sarewitz, "Pas de Trois: Science, Technology and the Marketplace"

George Ritzer, "Control: Human and Nonhuman Robots"

Jameson M. Wetmore, "Amish Technology: Reinforcing Values, Building Community"

Charles Perrow, "Complexity, Coupling, and Catastrophe"

Lance H. Gunderson, "Adaptive Dancing: Interactions between social resilience and ecological crises"

Bruno Latour, "Where are the Missing Masses? The sociology of a Few mundane Artifacts"

Fabio Salamanca-Buentello et al., "Nanotechnology and the Developing World"; Noela Invernizzi and

    Guillermo Foladori, "Nanotechnology and the Developing World: Will Nanotechnology Overcome

    Poverty or Widen Disparities?"

Bruce Schneier, "Security Trade-Offs are Subjective" and "Technology Creates Security Imbalances"

Ken Caldeira, "Geoengineering to Shade Earth"

Gary Chapman: Shaping Technology for the 'Good Life': the Technological Imperative versus the Social

    Imperative"

Roopali Phadke, "People's Science in Action: The Politics of Protest and Knowledge Brokering in India"