

GENERAL STUDIES COURSE PROPOSAL COVER FORM

Course information:

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

College/School	College of Integrative Sciences and Arts	Department/School	Interdisciplinary Humanities and Communication
Prefix: HST	Number: 482	Title: Writing and the History of Science, Ideas, and Technology	Units: 3

Course description: **Writing-intensive course examines intersections between texts and major themes in the history of science and technology.**

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? Yes

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. ASU (Required)

Requested designation: Literacy and Critical Inquiry-L

Mandatory Review: Yes

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 2019 Effective Date: October 5, 2018

For Spring 2020 Effective Date: March 8, 2019

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 program 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 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 David Burel E-mail dburel@asu.edu Phone 480-454-0539

Department Chair/Director approval: (Required)

Chair/Director name (Typed): Brooks Simpson Date: 11/13/2018

Chair/Director (Signature): 

Arizona State University Criteria Checklist for

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
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>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. <i>In-class essay exams may not be used for [L] designation.</i></p>	Course Syllabus
<p>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.</p>			
<p>2. Also:</p> <div style="border: 1px solid black; border-radius: 50%; padding: 20px; text-align: center;"> <p>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".</p> </div> <p>C-1</p>			
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>CRITERION 2: The writing assignments should involve gathering, interpreting, and evaluating evidence. They should reflect critical inquiry, extending beyond opinion and/or reflection.</p>	Course Syllabus: See Assignment Requirements
<p>1. Please describe the way(s) in which this criterion is addressed in the course design.</p>			
<p>2. Also:</p> <div style="border: 1px solid black; border-radius: 50%; padding: 20px; text-align: center;"> <p>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".</p> </div> <p>C-2</p>			
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>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.</p>	Course Syllabus: Assignment Requirements
<p>1. Please provide relatively detailed descriptions of two or more substantial writing or speaking tasks that are included in the course requirements</p>			
<p>2. Also:</p> <div style="border: 1px solid black; border-radius: 50%; padding: 20px; text-align: center;"> <p>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".</p> </div> <p>C-3</p>			

ASU - [L] CRITERIA		
YES	NO	Identify Documentation Submitted
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>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. <i>Intervention at earlier stages in the writing process is especially welcomed.</i></p> <p>See Syllabus: See Course Schedule and Due Dates</p>
<p>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</p>		
<p>2. Also:</p> <div style="border: 1px solid black; border-radius: 50%; padding: 20px; text-align: center; margin: 20px auto; width: 80%;"> <p>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".</p> </div>		
<p>C-4</p>		

Course Prefix	Number	Title	General Studies Designation
HST	482	Writing and the History of Science, Ideas, and Technology	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)
C1	90% of the Grade is from three written assignments	A list of the assignments and their weight in determining the course grade is in the syllabus and marked C1
C2	There are 3 assignments involving these skills (Historiographic Essay, Historical Artifact Paper, and Research Paper)	The historiographic essay requires students to make an argument about how the History of Technology has been studied based on evidence from at least five different works/authors. It is marked C2. The historical artifact project requires students to choose a technological artifact, place it within historical context, and make a persuasive argument about its significance. This research is also presented orally. It is marked C2 The research paper requires students to write an extended argument about a subject related to the field using primary source evidence. Students are required to make an original argument using methods they learned in the class. It is marked C2
C3	Three written assignments (two that include a presentation) are of substantial "depth, quality, and quantity."	The historiographic essay must be at least five pages long and consult high-quality academic scholarship. It is marked C3 The historical artifact paper must be six pages long and requires substantial research with primary sources. It is marked C3 The research paper requires fifteen pages with even more substantial research expectations and requirements for original argumentation. It is marked C3.
C4	The 3 written assignments are all due weeks apart from one another. The instructor will give feedback within one week of submission for all assignments. Peer Reviews and Presentations also allow for feedback.	An extensive list of due dates is listed on the course schedule and paper due dates section of the syllabus. Beyond the staggered assignment deadlines. Students will also receive feedback on individual steps of the project such as a topic selection/proposal and annotated bibliography.

HST 482 - Writing and the History of Science, Ideas and Technology

Course Description

Writing-intensive course examines intersections between texts and major themes in the history of science and technology.

Offering School/Colleges Pre-requisite(s)

College of Integrative Sciences and Arts

Prerequisite(s): ENG 102, 105, or 108 with C or better; minimum 30 hours

Spring 2019

Number of Units: 3

Allow Multiple Enrollments: Yes

General Studies: No

Repeatable for credit: Yes

Primary course component: Lecture

The Arizona State University faculty is at the forefront nationally in advancing research and discovery. They inspire new ways of thinking, innovating and solving problems socially, culturally and economically in our region and in the international community.

[Read more](#)

[Feedback](#)

HST-482: Writing the History of Technology

Instructor: Dr. David Burel
Email: DBurel@asu.edu
Course Time:

Office Hours:
Office Room: SANCA 251B - Polytech
Course Room: Hybrid Online & Room #

Catalog Course Description:

HST-482 – Writing and the History of Science, Ideas, and Technology:

Writing-intensive course examines intersections between texts and major themes in the history of science and technology.

Course Overview:

This course will challenge students to learn the skills and methods required to write a primary source research paper in the field of the History of Technology. Students will learn about the History of Technology as a field that often draws from widely varying historical approaches and interdisciplinary methods to study the human relationship with technology. Students will be challenged to write original research papers that demonstrate the student's ability to gather evidence and then to interpret and evaluate it.

It will achieve these aims through a mixture of lecture, course reading, and student research and writing. This course is designed to fulfill the "L" or Literacy and Critical Inquiry requirements at ASU. Therefore, substantive research, analysis, and writing is required to successfully complete this course. Writing assignments are an integral part of this class and will need to be taken seriously by all students who enroll.

Student Learning Outcomes:

By the end of the course, students will be able to:

- Describe the field of study called the History of Technology
- Exhibit research skills with both primary and secondary sources
- Write and speak clearly on topics of student research
- Analyze the relationship between human society and technology
- Understand methods and theory relating to the History of Technology
- Demonstrate an understand of the History of Technology

Course Assessment and Grading:

Assignment Weighting:

Historiographic Essay	15%
Historical Artifact Project	25%
Research Paper	50%
Discussion	10%

C1

Grading Scale:

A+	97%+
A	93-96.9%
A-	90-92.9%

* Enrolling in this class means that you have read, understood, and accepted the policies described in this document. In the event of a disagreement in interpreting a course policy, the instructor's interpretation is paramount and binding. You have the right to withdraw if you do not accept these policies.

*** This is a dynamic syllabus and subject to change ***

B+	87-89.9%
B	83-86.9%
B-	80-82.9%
C	70-79.9%
D	60-69.9%
E	0-59.9%

C3

Historiographic Essay:

Students will research historical scholarship of a specific topical area within the field. These topics will be chosen to correspond to given week of the course. In consultation with the instructor, the student will select five different works/authors to evaluate in the essay. Students should be clear to study how writing about the technology has progressed and/or changed over time. These papers will be presented on the appropriate week of class related to the topic. Paper due dates will vary by topics listed on schedule. Paper must be at least five pages long. Feedback for historiographic essays will be provided within one week of the submission. See schedule for details.

C2

Historical Artifact Project:

Students should write a cohesive and well-organized essay explaining the significance of the historical artifact and how it relates to a wider history. Generally, the artifact should be used to illuminate a wider story about the history of technology. The narrative of the artifact paper may explain how the artifact came to be, how the artifact influenced future events, or how the artifact represents a significant achievement/failure in a particular field.

C2

The paper must be a minimum of six pages long exclusive of any headings, images, or other non-textual content. The paper must also provide a title page and a bibliography in addition to the Chicago style footnotes. Students must use and cite seven high quality sources (no informal web sources). Two primary sources are required beyond the "artifact" itself. The primary sources must be used to present the history of the artifact or related topic discussed in the paper.

Students also must present their artifact project in class using a visual aid. Presentations should be persuasive in arguing that this artifact is worthy of inclusion in a fictional museum dedicated to collected artifacts related to the history of technology. See schedule for all due dates.

Research Paper:

Students must complete a final research paper related to the history of technology. Topics must be approved in advanced. To gain approval students must complete a topic proposal, an annotated bibliography, and a consultation with the instructor. Students must choose a topic that is not merely meant to report the existing scholarship, but instead directly make an argument about the past using evidence. Students must situate their argument within the historiography of the field in their introduction.

C2

The paper must be a minimum of fifteen pages long exclusive of any headings, images, or other non-textual content. The final paper must also provide a title page and a bibliography in addition to the Chicago style footnotes. Students must use and cite ten high quality sources (no informal web sources). Five primary sources are required. The primary sources must be used to present the history of the artifact or related topic discussed in the paper.

Students will deliver an abbreviated conference paper style presentation the final day class meets that will allow students immediate feedback before submitting the final paper during exam week.

Discussion:

Regularly attending class is vital to receiving a good grade in this class. Students are expected to come to class daily, remain attentive, and participate in discussions and activities. Discussions will also take place weekly online as students write brief reports about their individually selected article for the week and comment on others reports. Outside article selection will take place in class weekly for the next week's online discussion.

Absences, Make-Ups, & Late Work:

It is the student's sole responsibility to provide valid excuses for class absences or missed assignments. Medical notes, university-sponsored activities, or other official excuses will be accepted at the instructor's discretion. **All excuses must be turned in within one week of returning to class.** All excuses must be turned in for the instructor to keep as either an original or turned in as a legible photocopy. Students may also choose to email their excuse as a legible pdf or jpeg file, but it will not be counted as received until a student receives an email acknowledgment. It is the student's responsibility to follow up with getting absences excused.

Any missed assignment that can be made up must be done so within one week of returning to class. In general, I will accept a wider range of excuses for missing class if you come speak to me well in advance of the schedule conflict. I will not be able to provide the student with lecture notes for classes that you have missed unless you have special accommodations through the University.

Late work is not accepted for this class unless related to an excusable absence of significant duration. All late work will be graded as a zero in the gradebook. If during the course of the semester students have a conflict that could disrupt the submission of a paper, the student should email the professor as soon as possible to see if an accommodation is appropriate.

Academic Honesty:

Academic honesty violations are very serious and will be dealt with in accordance with the Academic Honesty Code. Specifically, violations (cheating) of academic honesty will be reported to the Academic Honesty Committee. These violations include, but are not limited to, the following: copying from others' exams, otherwise giving or receiving aid during an exam or quiz, obtaining copies of exams, using such copies in the exam, using electronic or other aids during an exam, taking an exam for another student, or any other means of deception. For further information, please read the Student Academic Integrity policy at <https://provost.asu.edu/academic-integrity>.

In-Class Electronic Devices & Behavior Policy:

Computers and other electronic devices have fundamentally changed today's classrooms. Many people prefer taking notes on an electronic device. For this reason, I will allow electronic devices in class to be used for note-taking purposes. I am also aware of the persistent temptation to engage in non-course related activities such as Facebook, Twitter, surfing the web, watching video content, and shopping, etc. I ask you to avoid doing these activities during class time. Studies have shown that these electronic distractions can decrease *both* your performance in a course as well as that of

the students around you. Although it should go without saying, it is also not acceptable to have extended discussions with your classmates, study for another class, or any other activity that is not related our course during class time. **If your behavior/activities are proving to be a distraction or contrary to these policies, you will be asked to stop. Continuing this behavior will result in losing attendance points and/or being prohibited from using electronic devices in class.**

Assigned Readings:

Students must acquire required books for the course listed below:

Smith, Merritt Roe, and Leo Marx. *Does Technology Drive History? the Dilemma of Technological Determinism*. Cambridge, Mass.: MIT Press, 1994.

Bijker, Hughes, and Pinch. *The Social Construction of Technological Systems : New Directions in the Sociology and History of Technology, Anniversary Edition*. MIT Press, The, 2012.

Both textbooks available via the ASU library via eBook Central Academic Complete. Besides these two texts, other readings for weekly discussions will be assigned/selected during the physical class meeting for each week's online discussions.

Course Meeting & Paper Due Date Schedule:

Week 1

Introduction to the History of Technology

Week 2

Introduction to Historical Sources

Choose Topic Weeks for Historiographic Essay

Week 3

Debating Technological Determinism

Choose Artifact for Historical Artifact Paper

Week 4

Social Construction of Technological Systems

Week 5

Topic: Pre-Industrial Technology

Week 6

Topic: The Industrial Revolution in Britain & America

Week 7

Topic: The Industrial Revolution in Global Context

C4

Week 8

**Presentation of Historical Artifact Project
Historical Artifact Paper Due**

Week 9

Topic: Automobiles and Transportation
Research Paper Topic Proposals Due

Week 10

Topic: Aviation and Enthusiasm

C4

Week 11

Topic: Engineers and Technical Experts
Research Paper Annotated Bibliography Due

Week 12

Topic: Warfare and Military Technology

Week 13

**Peer Review Day
Research Paper Draft Due For Peer Review**

Week 14

Topic: Space History

Week 15

Topic: Technology and the Environment

Week 16

Final Paper Presentations

Final Exam Week

Final Paper Due

Communication:

As per university regulations, asu.edu domain email is the official student email system for ASU. To get in touch with individual students or the whole class outside of class hours, I will use this medium of communication. **It is your responsibility to check your school email on a regular basis to make sure that you receive class information I send via email.** Because of the threats of viruses, however, I will not open messages you send me through other accounts. **Do not use Canvas messenger (or any other non-email messenger) to contact me.** In addition, it may take up to forty-eight hours to receive a reply under some circumstances. I may also ask a student to see me during office hours if his/her question is too complicated to be addressed via email. For basic

course information, please check the syllabus first for this information rather than directly emailing me. For help with your email go to: MyASU > Service > Live Chat OR New Ticket.

Finally, I do not discuss students' grades in email messages or over the telephone due to laws concerning confidentiality of students' records. **I also cannot discuss grades with parents and guardians (or other relatives/friends) as per the guidelines of the Family Education Rights and Privacy Act (FERPA).** If parents/guardians contact me, I will direct them to the pertinent passages of the ASU's FERPA policies.

Canvas:

To help you succeed in this class, I will post most course-related materials on Canvas. These materials include the syllabus, slides, and assignment scores. Additionally, you must take both exams through Canvas. If you have any issues accessing Canvas please contact ASU LMS or come see me at your earliest possible convenience.

Student Responsibility:

Finally, a word about the division of labor in our "joint venture": I will do the best I can to teach you, but you are expected to take your responsibility seriously. I will try to explain the material clearly. I will be available to help you when you need it. On the other hand, your responsibility includes, among other things, arriving on time, focusing on understanding what I am discussing while taking well-organized notes, asking questions if you fail to understand a point in my lecture, finishing reading assignments on time, and studying efficiently and effectively. I assume you understand what your responsibilities are and will take them seriously.

Challenging Content & Trigger Warnings:

History courses by their very nature deal with serious issues of the human past that may disturb, disquiet, or offend some students. It is not the intention of the class generally to disturb or offend. However, remembering and discussing the past (even the difficult parts) is the only effective way to study history. In line with university policies on this subject, I will attempt to provide warnings when introducing this kind of material; yet if I forget to do so, or if something else (in my materials or posts from fellow students) seems troubling or offensive, please by email or speak to me directly.

University Policy on Establishing a Safe Classroom Environment:

Learning takes place best when a safe environment is established in the classroom. In accordance with SSM 104-02 of the Student Services Manual, students enrolled in this course have a responsibility to support an environment that nurtures individual and group differences and encourages engaged, honest discussions. The success of the course rests on your ability to create a safe environment where everyone feels comfortable to share and explore ideas. We must also be willing to take risks and ask critical questions. Doing so will effectively contribute to our own and others intellectual and personal growth and development. We welcome disagreements in the spirit of critical academic exchange, but please remember to be respectful of others' viewpoints, whether you agree with them or not.

Prohibition of Commercial Notetaking 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.

Students with Disabilities

If you need academic accommodations or special consideration of any kind to get the most out of this class, please let me know at the beginning of the course. If you have a disability and need a reasonable accommodation for equal access to education at ASU, please call Disability Resources for Students.

The site can be found here: <https://eoss.asu.edu/drc>

Downtown Phoenix Campus University Center building, Suite 160 Phone: 602.496.4321 E-mail: DRCDowntown@asu.edu	Tempe Campus Matthews Center building, 1st floor Phone: 480.965.1234 E-mail: DRCTempe@asu.edu
Polytechnic Campus Sutton Hall - Suite 240 Phone: 480.727.1039 E-mail: DRCPoly@asu.edu	West Campus University Center Building, Room 130 Phone: 602.543.8145 E-mail: DRCWest@asu.edu

Mental Health

As a student, you may experience a range of challenges that can interfere with learning, such as strained relationships, increased anxiety, substance use, feeling down, difficulty concentrating and/or lack of motivation. These emotional health concerns or stressful events may diminish your academic performance and/or reduce your ability to participate in daily activities. ASU Counseling Services provides counseling and crisis services for students who are experiencing a mental health concern. Any student may call or walk-in to any ASU counseling center for a same day or future appointment to discuss any personal concern. Here is the Web site: <https://eoss.asu.edu/counseling>. After office hours and 24/7 ASU's dedicated crisis line is available for crisis consultation by calling 480-921-1006.

Student Code of Conduct

Students are required to adhere to the behavior standards listed in the Arizona Board of Regents Policy Manual Chapter V –Campus and Student Affairs: Code of Conduct located online at <http://students.asu.edu/srr/code> and the ACD 125: Computer, Internet, and Electronic Communications available at <http://asu.edu/aad/manuals/acd/acd125.html>.

Students are entitled to receive instruction free from interference by other members of the class. An instructor may withdraw a student from a course when the student's behavior disrupts the educational process under USI 201-10 <http://www.asu.edu/aad/manuals/ssm/ssm201-10.html>. An instructor may withdraw a student from a course with a mark of "W" or "E" when the student's behavior disrupts the educational process. Disruptive classroom behavior for this purpose is defined by the instructor.

Harassment Prohibited

ASU policy prohibits harassment on the basis of race, sex, gender identity, age, religion, national origin, disability, sexual orientation, Vietnam era veteran status, and other protected veteran status.

Violations of this policy may result in disciplinary action, including termination of employees or expulsion of students. Contact the professor if you are concerned about online harassment of any kind, and he/she will put you in contact with the Dean of Students office.

Title IX

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 <https://sexualviolenceprevention.asu.edu/faqs>.

“As a mandated reporter, I am obligated to report any information I become aware of regarding alleged acts of sexual discrimination, including sexual violence and dating violence. ASU Counseling Services, <https://eoss.asu.edu/counseling>, is available if you wish discuss any concerns confidentially and privately.

Statement on Inclusion

Arizona State University is deeply committed to positioning itself as one of the great new universities by seeking to build excellence, enhance access and have an impact on our community, state, nation and the world. To do that requires our faculty and staff to reflect the intellectual, ethnic and cultural diversity of our nation and world so that our students learn from the broadest perspectives, and we engage in the advancement of knowledge with the most inclusive understanding possible of the issues we are addressing through our scholarly activities. We recognize that race and gender historically have been markers of diversity in institutions of higher education. However, at ASU, we believe that diversity includes additional categories such as socioeconomic background, religion, sexual orientation, gender identity, age, disability, veteran status, nationality and intellectual perspective.

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://students.asu.edu/academic-success>
- Counseling Services: <http://students.asu.edu/counseling>
- Financial Aid: <http://students.asu.edu/financialaid>
- Disability Resource Center: <http://www.asu.edu/studentaffairs/ed/drc/>
- Major/Career Exploration: <http://uc.asu.edu/majorexploration/assessment>
- Career Services: <http://students.asu.edu/career>
- Student Organizations: <http://www.asu.edu/studentaffairs/mu/clubs/>
- ASU Writing Centers: <https://tutoring.asu.edu/writing-centers>
- ASU Police Department: <https://cfo.asu.edu/police>
- International Student Resources: <https://students.asu.edu/international/support/academic>

Syllabus Disclaimer

Every effort will be made to avoid changing the course schedule, but the possibility exists that unforeseen events will make syllabus changes necessary. The instructor reserves the right to make changes to the syllabus as deemed necessary. Students will be notified in a timely manner of any syllabus changes via email or in the Announcements section on Canvas. .

Contents

Foreword vii
Deborah G. Douglas

Preface to the Anniversary Edition xi
Acknowledgments (preface from original edition) xxxv
General Introduction (from original edition) xxxix

I Common Themes in Sociological and Historical Studies of Technology 1

Introduction 3

**The Social Construction of Facts and Artifacts: Or How the Sociology of
Science and the Sociology of Technology Might Benefit Each Other 11**
Trevor J. Pinch and Wiebe E. Bijker

The Evolution of Large Technological Systems 45
Thomas P. Hughes

**Society in the Making: The Study of Technology as a Tool for Sociological
Analysis 77**
Michel Callon

II Simplifying the Complexity 99

Introduction 101

**Technology and Heterogeneous Engineering: The Case of Portuguese
Expansion 105**
John Law

The Nelson-Winter-Dosi Model and Synthetic Dye Chemistry 129
Henk van den Belt and Arie Rip

The Social Construction of Bakelite: Toward a Theory of Invention 155
Wiebe E. Bijker

III Strategic Research Sites 183

Introduction 185

Missile Accuracy: A Case Study in the Social Processes of Technological Change 189

Donald MacKenzie

The Social Locus of Technological Practice: Community, System, or Organization? 217

Edward W. Constant II

Regulatory Science and the Social Management of Trust in Medicine 237

Henk J. H. W. Bodewitz, Henk Buurma, and Gerard H. de Vries

The Consumption Junction: A Proposal for Research Strategies in the Sociology of Technology 253

Ruth Schwartz Cowan

Seeing with Sound: A Study of the Development of Medical Images 273

Edward Yoxen

IV Technology and Beyond 297

Introduction 299

Reconstructing Man and Machine: A Note on Sociological Critiques of Cognitivism 303

Steve Woolgar

Expert Systems and the Science of Knowledge 321

H. M. Collins

References 341

Contributors 371

Name Index 375

Subject Index 385

Contents

Introduction <i>Leo Marx and Merritt Roe Smith</i>	ix
Technological Determinism in American Culture <i>Merritt Roe Smith</i>	1
Recourse of Empire: Landscapes of Progress in Technological America <i>Michael L. Smith</i>	37
Do Machines Make History? <i>Robert L. Heilbroner</i>	53
Technological Determinism Revisited <i>Robert L. Heilbroner</i>	67
Three Faces of Technological Determinism <i>Bruce Bimber</i>	79
Technological Momentum <i>Thomas P. Hughes</i>	101
Retrieving Sociotechnical Change from Technological Determinism <i>Thomas J. Misa</i>	115
Determinism and Indeterminacy in the History of Technology <i>Philip Scranton</i>	143

Technological Determinism in Agrarian Societies <i>Peter C. Perdue</i>	169
Determinism and Pre-Industrial Technology <i>Richard W. Bulliet</i>	201
The Political and Feminist Dimensions of Technological Determinism <i>Rosalind Williams</i>	217
The Idea of "Technology" and Postmodern Pessimism <i>Leo Marx</i>	237
Rationality versus Contingency in the History of Technology <i>John M. Staudenmaier</i>	259
Contributors	275
Index	277