GENERAL STUDIES COURSE PROPOSAL COVER FORM

College/School: College of Integrative Sciences and Arts  Department/School: Department of Communication

Prefix: HST  Number: 280  Title: The History of Science, Ideas, and Innovation  Units: 3

Course description:

Is this a cross-listed course?  Yes
If yes, please identify course(s):

Is this a shared course?  Yes
If so, list all academic units offering this course:

Note: For courses that are cross-listed 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.

Requested designation: Global Awareness-G

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 2018 Effective Date: October 1, 2017
For Spring 2019 Effective Date: March 10, 2018

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 (SO/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: 9/19/18
Chair/Director (Signature): [Signature]

Rev. 3/2017
Rationale and Objectives

Human organizations and relationships have evolved from being family and village centered to modern global interdependence. The greatest challenge in the nuclear age is developing and maintaining a global perspective which fosters international cooperation. While the modern world is comprised of politically independent states, people must transcend nationalism and recognize the significant interdependence among peoples of the world. The exposure of students to different cultural systems provides the background of thought necessary to developing a global perspective.

Cultural learning is present in many disciplines. Exposure to perspectives on art, business, engineering, music, and the natural and social sciences that lead to an understanding of the contemporary world supports the view that intercultural interaction has become a daily necessity. The complexity of American society forces people to balance regional and national goals with global concerns. Many of the most serious problems are world issues and require solutions which exhibit mutuality and reciprocity. No longer are hunger, ecology, health care delivery, language planning, information exchanges, economic and social developments, law, technology transfer, philosophy, and the arts solely national concerns; they affect all the people of the world. Survival may be dependent on the ability to generate global solutions to some of the most pressing problems.

The word university, from universitas, implies that knowledge comes from many sources and is not restricted to local, regional, or national perspectives. The Global Awareness Area recognizes the need for an understanding of the values, elements, and social processes of cultures other than the culture of the United States. Learning which recognizes the nature of others cultures and the relationship of America’s cultural system to generic human goals and welfare will help create the multicultural and global perspective necessary for effective interaction in the human community.

Courses which meet the requirement in global awareness are of one or more of the following types: (1) in-depth area studies which are concerned with an examination of culture-specific elements of a region of the world, country, or culture group, (2) the study of contemporary non-English language courses that have a significant cultural component, (3) comparative cultural studies with an emphasis on non-U.S. areas, and (4) in-depth studies of non-U.S. centered cultural interrelationships of global scope such as the global interdependence produced by problems of world ecology, multinational corporations, migration, and the threat of nuclear war.

Reviewed 4/2014
Proposer: Please complete the following section and attach appropriate documentation.

## ASU--[G] CRITERIA

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>Identify Documentation Submitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td>Studies <strong>must</strong> be composed of subject matter that addresses or leads to an understanding of the contemporary world outside the U.S.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. The course must match at least one of the following descriptions: (check all which may apply):</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a. In-depth area studies which are concerned with an examination of culture-specific elements of a region, country or culture group. <strong>The area or culture studied must be non-U.S. and the study must contribute to an understanding of the contemporary world.</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. The course is a language course for a contemporary non-English language, and has a significant cultural component.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c. The course is a comparative cultural study in which most, i.e., more than half, of the material is devoted to non-U.S. areas.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d. The course is a study of the cultural significance of a non-U.S.-centered global issue. The course examines the role of its target issue within each culture and the interrelatedness of various global cultures on that issue. It looks at the cultural significance of its issue in various cultures outside the U.S., both examining the issue’s place within each culture and the effects of that issue on world cultures.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Review list of modules in syllabus, course SLOs on syllabus &amp; each course book's table of contents</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Criteria (from checksheet)</th>
<th>How course meets spirit (contextualize specific examples in next column)</th>
<th>Please provide detailed evidence of how course meets criteria (i.e., where in syllabus)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2d: study the cultural significance of a non-U.S. centered global issue</td>
<td>SAMPLE: The course examines the cultural significance of financial markets Japan, Korea, and the UK.</td>
<td>SAMPLE: Module 2 shows how Japanese literature has shaped how Japanese people understand world markets. Module 3 shows how Japanese popular culture has been changed by the world financial market system. Modules 4 &amp; 5 do the same for Korea and modules 6 &amp; 7 do the same for the UK.</td>
</tr>
<tr>
<td>1</td>
<td>This course studies how science, ideas, and technological innovation have changed over time and been incorporated throughout the World. It also explicitly draws connections between past cultures of science and technology and the modern world. Furthermore, the final two units deal directly with the contemporary world in detail.</td>
<td>Historically an example would be Modules 6 &amp; 7 study the intellectual and technological traditions of global cultures including West Asia, China, India, and the Pre-Columbian Americas. Understanding these past traditions ground students in a better understanding of the modern world's rich diversity of historical traditions of scientific and technical achievement. Additionally, Modules 14 and 15 focus explicitly on the understanding global scientific cultures around the world as well as how industrialization and technology has been adapted to global societies and cultures. Students are broadly encouraged to think about how the past connects to the present as stated in the SLO: &quot;Compare past global cultures of science and technology to modern global cultures&quot;</td>
</tr>
<tr>
<td>2c</td>
<td>The vast majority of the course studies non-US cultures understanding of science, technology, and knowledge. These traditions are not only compared over time, but from place to place.</td>
<td>For example, Module 9 discusses how European ideas about astronomy and mathematics were received in China through the work of an Italian Jesuit missionary, Matteo Ricci, in the court of the Ming Dynasty.</td>
</tr>
</tbody>
</table>
### 2d

| Science and Technology are both issues of global significance. The flow and adoption of scientific ideas and technologies around the World is a significant global issue. | The global spread of technology with industrialization demonstrates the global significance of this issue. The course illustrates global spread and indigenization of the Industrial Revolution in Module 14 to show key similarities and differences within local cultures. |
HST 280 - History of Science, Ideas and Innovation

Course Description
Fast-paced introduction to the intertwined histories of science, ideas and technological innovation, as they shape the globe from the ancients to the present.

Offering School/Colleges Pre-requisite(s)
College of Integrative Sciences and Arts
Prerequisite(s): ENG 102, 105, or 108 with C or better

Fall 2018
Number of Units: 3
Allow Multiple Enrollments: No
General Studies: No
Repeatable for credit: No
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.
HST-280: History of Science, Ideas, and Innovation*

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

Office Hours: Office Room: SANCA 251B - Polytech
Course Room: Online

**Course Description:**
Fast-paced introduction to the intertwined histories of science, ideas and technological innovation, as they shape the globe from the ancients to the present.

**Course Overview:**
This class equips students with a framework for understanding the history of technology and science that will benefit them in many interdisciplinary endeavors from engineering & science to historical inquiry. Students will experience many of the highlights and key moments in this history to illustrate the role of science and technology in human civilizations. This course considers how human societies have regarded the pursuit and transmission of knowledge throughout history. This course is also an excellent introduction to the major themes of the History of Science, Ideas, and Innovation major.

**Student Learning Outcomes:**
By the end of the course, students will be able to:
- Describe the global History of Science and Technology from pre-history to the present
- Compare past global cultures of science and technology to modern global cultures
- Analyze the effects of scientific, engineering and technical knowledge of human societies
- Understand how human ideas about knowledge have changed over time
- Recognize how different scientific and engineering cultures are developed across the world
- Appreciate the complex process by which scientific ideas are transmitted to society
- Demonstrate research skills and use of appropriate sources
- Write and discussion openly and clearly on topics of student research

**Course Assessment and Grading:**

<table>
<thead>
<tr>
<th>Assignment Weighting</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekly Discussion &amp; Module Completion</td>
<td>40%</td>
</tr>
<tr>
<td>Review and Report Book Assignments</td>
<td>30%</td>
</tr>
<tr>
<td>Final Paper</td>
<td>30%</td>
</tr>
</tbody>
</table>

**Grading Scale:**
- A+ 97%+
- A  93-96.9%
- A- 90-92.9%
- B+ 87-89.9%
- B  83-86.9%
- B- 80-82.9%
- C  70-79.9%
- D  60-69.9%
- E  0-59.9%

* 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 ***
Weekly Discussion & Module Completion:
This course is an online course with most of the regular activity taking place on Canvas. Students must complete each weekly module and all assigned components of the module each week. Every week will have assigned readings in course texts and/or articles. Every week will also feature a discussion posting. Students must first post a persona reaction or reflection on each week’s content (including readings and recorded lecture segments). Each student then must propose at least one question to the weekly discussion board. Finally, students must respond to at least two other questions and any follow questions from the instructor. [More information in Canvas on discussions]. Some weeks may have other types of assignments such as quizzes, which must be completed by the date specified in Canvas.

Review and Report Book Assignments:
To supplement the wide-ranging survey nature of the course, students will be challenged to select three books to read in detail. These books will be selected in consultation with the instructor. Students will first gain approval for a history of science or technology monograph or from a relevant discipline such as sociology, anthropology or political science. Then the student will read the book. The student will then write a short paper (roughly 5 pages) that both reviews the book’s merits as well as reports the key takeaway message. After receiving paper feedback, each student must post about the text of their paper (or post a video discussion the book) on a discussion page and comment on at least two other students work.

Final Paper:
Students will write an extended paper synthesizing the key moments and movements in the History of Science, Ideas, and Innovation. This paper must reflect each individual student’s takeaway lessons learned throughout the course and these lessons should reflect wider themes of the course. The paper should call on sources used throughout the course in supporting their ideas including the textbooks, monographs from the RRB assignments, and primary sources used in discussion. The paper should reflect the understanding of what interdisciplinary tools and methods scholars have developed to study of the History of Science, Ideas, and Innovation. Additional guidelines and details to be provided on a separate handout.

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. Make-ups may take a different form and/or include different questions than the one originally completed by the rest of the class. If a student misses the final exam with a verifiable excuse described above the student may be given an incomplete for the course at the instructor’s discretion. 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](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:**
The following books must be acquired by the students to successfully complete the course. Additional readings may be posted on Canvas within the weekly modules. See Canvas to weekly reading assignment details.


**Module Schedule:**
This course meets online via Canvas. Weekly modules (as outlined below) will be posted with all reading assignments, lecture segments, and other activities. Please view these modules on Canvas weekly to interact and complete assignments and discussions.

**Module 1: Welcome & Course Themes**
Welcome to the course modules asks students to share what topics they find most interesting in the History of Science, Ideas, and Innovation. It also asks students to consider the complex assumptions modern people have about the assumed relationship between science, technology, and progress.
Read: “Introduction” in *Science and Technology in World History*

**Module 2: Technology and Knowledge before Science**
This module looks at the prehistory of science and the dawn of human’s relationship with technology. Students will consider anthropological and archeological evidence for humanities development from near human ancestors through the creation of complex stone tools to the beginnings of agriculture. Students are challenged to consider if early human’s knowledge of the world constitutes scientific knowledge.
Read: “Humankind Emerges” and “The Reign of the Farmer” in *Science and Technology in World History* & “Pangaea Revisited, the Neolithic Reconsidered” in *Ecological Imperialism*

**Module 3: Science and Technology in Riverine Civilizations**
This module considers the first complex societies on early centered on major river valleys. It first considers the considerable technological innovation in irrigation and government that allowed the creation of these civilizations. Students also can study the Babylonian model for scientific inquiry as it developed in Mesopotamia.
Read: “Pharaohs and Engineers” in *Science and Technology in World History*

**Module 4: Greek Philosophy and the Origins of “Western” Thought**
The module studies the origins of Greek thought and its influence in the Mediterranean and the West Asian world. The development of individualistic and theoretical methods of pursuing scientific knowledge will be considered.
Read: “Greeks Bearing Gifts” in *Science and Technology in World History*

**Module 5: Technology and Knowledge in the Hellenistic and Roman World**
This module investigates how the empire of Alexander the Great and the subsequent Hellenistic Period brought about considerable changes to scientific institutions. It will study the Library at Alexandria as a substantial development in the history of science and ideas. This unit will consider the vast technological contributions the Roman Empire made in innovating to create its vast empire.
Read: “Alexandria and After” in *Science and Technology in World History* and “The Library” in *Reinventing Knowledge*
Module 6: Applied & Theoretical Knowledge in Global Cultures I (West Asia & China)
This module investigates the highly developed civilizations and intellectual achievements of West Asia in the Islamic World and China. It examines how these traditions developed alternative methods for organizing and valuing knowledge both technical and scientific.
Read: “The Enduring East” & “The Middle Kingdom” in Science and Technology in World History

Module 7: Applied & Theoretical Knowledge in Global Cultures II (India & the Americas)
This week studies both the intellectual traditions of South Asian culture on the Indian subcontinent and the development of technologies and scientific knowledge in the Americas. Special attention will be given to contextualizing the significant technical achievements of pre-Columbian civilizations in the Americas. It finally looks at early attempts by Europeans to establish overseas colonies.
Read: “Indus, Ganges, and Beyond” & “The New World” in Science and Technology in World History and “The Norse and the Crusaders,” “The Fortunate Isles,” and “Winds” in Ecological Imperialism

Module 8: From Stirrups to Solar Systems
This module first considers the technologies of feudalism. It also examines the role of monasteries in preserving knowledge in postclassical Western Europe. It also studies how the received geocentric models of the universe challenged by scholars proposing heliocentric ideas.

Module 9: Of European Empires & a Republic of Letters
This module pairs a discussion of European overseas expansion and its impact across the globe. It also considers how the Columbian exchange allowed for major innovation to agricultural that brought new lands and crops under cultivation around the world. It also considers the Republic of Letters as another major institutional development in the spread of knowledge and ideas in Europe.

Module 10: The Scientific Revolution in World Context
This module study at developments in the history of Science before and after Isaac Newton’s work in mathematics and physics. It also looks at how European ideas were received around the World. It also reflects on why the European scientific tradition became dominant in this era. It also consider the origins of academic disciplines. Students are encouraged to consider in what ways the scientific revolution and academic disciplines continue to shape the modern world.
Read: “God said, ‘Let Newton be!’” in Science and Technology in World History and “The Disciplines” in Reinventing Knowledge
Module 11: The Birth of the Industrial World
The Industrial Revolution fundamentally changed the modern world, but why did it first occur in Britain? What drove this period of intense innovation that broke longstanding limits to productivity? These questions and more are the focus of this module.
Read: “Textiles, Timber, Coal, and Steam” in Science and Technology in World History

Module 12: Discovering and Debating the Origins of Life
Charles Darwin’s book, On the Origins of Species, challenged many traditional explanations of the natural world, but his book was neither the first nor the last to make similar claims. This module will study the controversy around the work of Darwin, but also contextualize it within its own time.
Read: “Legacies of Revolution: From Newton to Einstein” & “Life Itself” in Science and Technology in World History

Module 13: Technological Innovation & Social Change
This module looks at how technological innovations influenced society and everyday people's lives. The electrification of households, the adoption of the automobile, and aviation technology provide great case studies in examining the relationship between technology and social change.
Read: Read: “Toolmakers Take Command” in Science and Technology in World & “The Laboratory” in Reinventing Knowledge

Module 14: The Modern Industrial World in Global Context Global
This module studies the modern industrial technology around the world. It emphasis how technology is indigenized to local societies and cultures across the globe. There are remarkable similarities and dissimilarities in how/which technologies are used by different peoples. This week will also consider major modern scientific achievements that have reordered how humans look at the universe.
History “The New Aristotelians” in Science and Technology in World History and

Module 15: Futurism, High-Modernism, and Big Science in Contemporary Culture
This module considers the origins of futurism in the past and the present role of futurist ideas related to science and technology in modern global culture. It also suggests discussion on whether or not global scientific culture has become homogeneous over time or if separate cultures of science exist in the world like they had in the past. It will also consider the history and continued appeal of high modernist ideology.
Read: “The Bomb, the Internet, and the Genome” & “Under Today’s Pharaohs” in Science and Technology in World History

Communication:
As per university regulations, asu.edu domain email is the official student email system for Arizona State University. 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](https://www.asu.edu/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 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

<table>
<thead>
<tr>
<th>Downtown Phoenix Campus</th>
<th>Tempe Campus</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Center building, Suite 160</td>
<td>Matthews Center building, 1st floor</td>
</tr>
<tr>
<td>Phone: 602.496.4321</td>
<td>Phone: 480.965.1234</td>
</tr>
<tr>
<td>E-mail: <a href="mailto:DRCDowntown@asu.edu">DRCDowntown@asu.edu</a></td>
<td>E-mail: <a href="mailto:DRCTempe@asu.edu">DRCTempe@asu.edu</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Polytechnic Campus</th>
<th>West Campus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sutton Hall - Suite 240</td>
<td>University Center Building, Room 130</td>
</tr>
<tr>
<td>Phone: 480.727.1039</td>
<td>Phone: 602.543.8145</td>
</tr>
<tr>
<td>E-mail: <a href="mailto:DRCPoly@asu.edu">DRCPoly@asu.edu</a></td>
<td>E-mail: <a href="mailto:DRCWest@asu.edu">DRCWest@asu.edu</a></td>
</tr>
</tbody>
</table>

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 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/ma/clubs/
- ASU Writing Centers: https://tutoring.asu.edu/writing-centers
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

List of illustrations .................................. xiii
Preface to the new edition ............................ xv
Acknowledgments .................................. xxi

1. Prologue ........................................ 1
2. Pangaea revisited, the Neolithic reconsidered 8
3. The Norse and the Crusaders ................. 41
4. The Fortunate Isles ................................ 70
5. Winds ............................................ 104
6. Within reach, beyond grasp .................. 132
7. Weeds ............................................ 145
CONTENTS

8. Animals 171
9. Ills 195
10. New Zealand 217
11. Explanations 269
12. Conclusion 294

Appendix: What was the “smallpox” in New South Wales in 1789? 309

Notes 312
Index 361
Contents

Preface vii

INTRODUCTION. The Guiding Themes 1

PART I. From Ape to Alexander 3
CHAPTER 1. Humankind Emerges: Tools and Toolmakers 5
CHAPTER 2. The Reign of the Farmer 17
CHAPTER 3. Pharaohs and Engineers 31
CHAPTER 4. Greeks Bearing Gifts 55
CHAPTER 5. Alexandria and After 79

PART II. Thinking and Doing among the World’s Peoples 97
CHAPTER 6. The Enduring East 99
CHAPTER 7. The Middle Kingdom 117
CHAPTER 8. Indus, Ganges, and Beyond 141
CHAPTER 9. The New World 155

PART III. Europe and the Solar System 175
CHAPTER 10. Plows, Stirrups, Guns, and Plagues 177
CHAPTER 11. Copernicus Incites a Revolution 203
CHAPTER 12. The Crime and Punishment of Galileo Galilei 223
CHAPTER 13. “God said, ‘Let Newton be!’” 249

PART IV. Science and Industrial Civilization 275
CHAPTER 14. Timber, Coal, Cloth, and Steam 279
CHAPTER 15. Legacies of Revolution 295
CHAPTER 16. Life Itself 323
CHAPTER 17. Toolmakers Take Command 339
CHAPTER 18. The New Aristotelians 365
CHAPTER 19. The Bomb and the Genome 391
CHAPTER 20. Under Today’s Pharaohs 415

CONCLUSION. The Medium of History 437

Guide to Resources 441
Illustration Credits 463
Index 465
## Contents

**Introduction** xi

1. The Library 1
2. The Monastery 37
3. The University 77
4. The Republic of Letters 119
5. The Disciplines 161
6. The Laboratory 205

**Conclusion** 251

**Acknowledgments** 275

**Notes** 277

**Index** 303