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

Course description:
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 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.

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.

Chair/Director Initials

Requested designation: Social-Behavioral Sciences—SB
Mandatory Review: (Choose one) Yes

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 (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: 9.19.18

Chair/Director (Signature):

Burel

Rev. 3/2017
Rationale and Objectives

Social-behavioral sciences use distinctive scientific methods of inquiry and generate empirical knowledge about human behavior, within society and across cultural groups. Courses in this area address the challenge of understanding the diverse natures of individuals and cultural groups who live together in a complex and evolving world.

In both private and public sectors, people rely on social scientific findings to consider and assess the social consequences of both large-scale and group economic, technological, scientific, political, ecological and cultural change. Social scientists' observations about human interactions with the broader society and their unique perspectives on human events make an important contribution to civic dialogue.

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

Revised April 2014
Proposer: Please complete the following section and attach appropriate documentation.

## ASU--[SB] CRITERIA

A SOCIAL-BEHAVIORAL SCIENCES [SB] course should meet all of the following criteria. If not, a rationale for exclusion should be provided.

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>Identify Documentation Submitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>☒</td>
<td>☐</td>
<td>1. Course is designed to advance basic understanding and knowledge about human interaction.</td>
</tr>
<tr>
<td>☒</td>
<td>☐</td>
<td>2. Course content emphasizes the study of social behavior such as that found in:</td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>• ANTHROPOLOGY</td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>• ECONOMICS</td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>• CULTURAL GEOGRAPHY</td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>• HISTORY</td>
</tr>
<tr>
<td></td>
<td>☒</td>
<td>3. Course emphasizes:</td>
</tr>
<tr>
<td></td>
<td>☒</td>
<td>a. the distinct knowledge base of the social and behavioral sciences (e.g., sociological anthropological). OR</td>
</tr>
<tr>
<td></td>
<td>☒</td>
<td>b. the distinct methods of inquiry of the social and behavioral sciences (e.g., ethnography, historical analysis).</td>
</tr>
<tr>
<td></td>
<td>☐</td>
<td>4. Course illustrates use of social and behavioral science perspectives and data.</td>
</tr>
</tbody>
</table>

THE FOLLOWING TYPES OF COURSES ARE EXCLUDED FROM THE [SB] AREA EVEN THOUGH THEY MIGHT GIVE SOME CONSIDERATION TO SOCIAL AND BEHAVIORAL SCIENCE CONCERNS:

- Courses with primarily arts, humanities, literary or philosophical content.
- Courses with primarily natural or physical science content.
- Courses with predominantly applied orientation for professional skills or training purposes.
- Courses emphasizing primarily oral, quantitative, or written skills.
<table>
<thead>
<tr>
<th>Course Prefix</th>
<th>Number</th>
<th>Title</th>
<th>General Studies Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>HST</td>
<td>280</td>
<td>The History of Science, Ideas, and Innovation</td>
<td>SB (Social and Behavioral Sciences)</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>1</td>
<td>The course studies types of interactions among scientists, engineers, and other intellectuals. It also studies how institutions of knowledge develop and change over time.</td>
<td>The class studies the human relationships and institutions that develop in humanity’s pursuit of scientific and technical knowledge. See “Course Overview” and “Student Learning Outcomes” in Syllabus and Table of Content for Reinventing Knowledge as examples.</td>
</tr>
<tr>
<td>2</td>
<td>This course is based in historical scholarship, but is interdisciplinary in its consideration of the human relationships in the institutions of human knowledge.</td>
<td>See “Course Overview” and “Student Learning Outcomes” in Syllabus and Table of Content for Reinventing Knowledge as examples.</td>
</tr>
<tr>
<td>3</td>
<td>This course relies on interdisciplinary scholarship from history, anthropology, sociology, and other fields to provide coverage of the topics of Science, Ideas, and Innovation.</td>
<td>For example Module 2, it considers anthropological evidence in discussing early humanity’s knowledge of the world and development of agriculture. It also uses sociological studies of science and technology to support historical study of institutions. See “Course Overview” and “Student Learning Outcomes” in Syllabus and Table of Content for Reinventing Knowledge as examples.</td>
</tr>
<tr>
<td>4</td>
<td>The course encourages students to use a wide range of approaches in studying the development of scientific and technical knowledge.</td>
<td>For example, Student papers encourage the use of scholarship from a wide range of field including history, anthropology, sociology, and political science.</td>
</tr>
</tbody>
</table>
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.

Read more
HST-280: History of Science, Ideas, and Innovation*

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

Office Hours: MWF 11:30-12:30 & TR 10:30-12:00
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
- 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:
Assignment Weighting:
- Weekly Discussion & Module Completion 40%
- Review and Report Book Assignments 30%
- Final Paper 30%

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 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 inquiry 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 examine at 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. Read: “Plows, Stirrups, Guns, and Plagues” & “Copernicus Incites A Revolution” in Science and Technology in World History and “The Monastery” in Reinventing Knowledge and “Within reach, beyond grasp,” “Weeds,” “Animals,” and “Ills” in Ecological Imperialism

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. Read: “The Crime and Punishment of Galileo Galilei” in Science and Technology in World History and “The University” & “The Republic of Letters” in Reinventing Knowledge

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. 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: “Toolmakers Take Command” in Science and Technology in World History

Module 14: The Industrial Revolution Goes Global and Reordering the Universe

This module studies the process by which the industrial technology was indigenized across the globe. There are remarkable similarities and dissimilarities in how different countries adopted new industrial modes of production. This week will also consider major modern scientific achievements that have reordered how humans look at the universe.
Read: “The New Aristotelians” in Science and Technology in World History and “The Laboratory” in Reinventing Knowledge

Module 15: Futurism, High-Modernism, and Big Science in a Post-Industrial World

This module focuses on several key questions. How has an enthusiasm for science and technological innovation influenced society? Why have some people failed to see the shortcomings of science and technology in the modern world? Sometimes with tragic results. Also, how have modern scientific institutions achievements reorder human’s understanding of where they are in the universe?
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 onEstablishing 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 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://cool.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/majorexploitation/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

<table>
<thead>
<tr>
<th>List of illustrations</th>
<th>page xiii</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preface to the new edition</td>
<td>xv</td>
</tr>
<tr>
<td>Acknowledgments</td>
<td>xxi</td>
</tr>
<tr>
<td>1. Prologue</td>
<td>1</td>
</tr>
<tr>
<td>2. Pangaea revisited, the Neolithic reconsidered</td>
<td>8</td>
</tr>
<tr>
<td>3. The Norse and the Crusaders</td>
<td>41</td>
</tr>
<tr>
<td>4. The Fortunate Isles</td>
<td>70</td>
</tr>
<tr>
<td>5. Winds</td>
<td>104</td>
</tr>
<tr>
<td>6. Within reach, beyond grasp</td>
<td>132</td>
</tr>
<tr>
<td>7. Weeds</td>
<td>145</td>
</tr>
</tbody>
</table>

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