

EXPLORATION AND SCIENCE

(HPS 336)

T TH 10:30a-11:45p, LSE 104

Instructor: Stephen Pyne

Office: LSA 220

Office hours: TTh 9-10a, Th 12n-1p, and by appointment

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Course Description

This course examines exploration as a historical process and as a broadly influential cultural activity of Western civilization. It surveys major epochs of discovery – from the Vikings to Voyager – and it discusses the interdependence of exploration with modern science, with the arts and literature, with the political economy of Western imperialism, and with changes in the global environment.

Classes will consist primarily of illustrated lectures. Questions are welcome at any time.

The course qualifies for the following General Studies credits: *Historical Awareness*; *Social and Behavioral Sciences*. It also satisfies CLAS *Science and Society* requirements.

Honors students: the class can be taken for Footnote 18 credit. Several options are available.

Please note: this class requires facility with reading and writing English and it assumes a certain familiarity with the general history and culture of Western civilization. It is not recommended for students who do not have such skills and training.

Grades

There are 660 points possible. Points accumulate as possible:

- ***Three book reviews.*** You can select any three books from the five required readings. If you elect to write a fourth review, the highest three grades will count. Each essay is worth 100 points, for a total of 300 points. Guidelines for writing are included with the syllabus.
- A series of ***three multiple-choice exams***, worth 360 points altogether. Study guides are included with the syllabus. The third midterm will serve as final exam.

Grade distribution: A=660-594 points; B=593-528; C=527-462; D=461-396

Policies

- *Incompletes* are discouraged and will be given only for bona fide emergencies.

- *Makeups*: Assignments are due on date specified. If you cannot attend that day, notify me in advance and arrangements will be made for a makeup exam or tardy submission. Late assignments will be penalized 10 points for each day they are late.
- **NB**: No e-mail attachments accepted.
- Please turn off or silence cell phones.
- Reasonable accommodations are available for students with documented disabilities or who must miss class for a recognized religious holiday. Please inform us early in the semester if you need accommodation.
- Academic dishonesty, including inappropriate collaboration, will not be tolerated. There are severe sanctions for cheating, plagiarizing and any other form of dishonesty. For ASU *student academic integrity policy*, see: http://www.asu.edu/studentaffairs/studentlife/judicial/academic_integrity.htm
- *Footnote 18*: Several options are available, and will be arranged by mutual consultation.

Reading Assignments

Required readings

Dava Sobel, *Longitude*
 Cory Ford, *Where the Sea Breaks Its Back*
 Stephen Ambrose, *Undaunted Courage*
 Wallace Stegner, *Beyond the Hundredth Meridian*
 Alfred Lansing, *Endurance. Shackleton's Incredible Voyage*
 Tom Wolfe, *The Right Stuff*

Alternate readings (may substitute as indicated in syllabus)

Nina Burleigh, *Mirage: Napoleon's Scientists and the Unveiling of Egypt*
 Nathaniel Philbrick, *Sea of Glory*
 Peter Hopkirk, *Trepassers on the Roof of the World: The Secret Exploration of Tibet*
 Lennard Bickel, *Mawson's Will*
 Robert Ballard, *The Eternal Darkness*

All required readings are available for purchase at the ASU Bookstore (or on-line). Both required and alternate readings are on reserve at Noble Library.

Introduction

Jan 19
Voyage of Discovery
 Course introduction

Jan 21

Europe at the Edge: The Global Setting

Jan 26

The Ages of Discovery

First Great Age of Discovery

Jan 28

The Great Voyages: The Renaissance Explores

Feb 2

The Portuguese Paradigm: God, Gold, Glory

Feb 4

First Contacts

Video: *Star Trek* [clips]; *First Contact* (50 minutes)

Feb 9

Circumnavigation: The Voyage of the *Victoria*

Read: Sobel, *Longitude*

Book review due

Feb 11

New World: Contours of a Continent, Margins of a Metaphor

Feb 16

The Fur Trade and Exploration: The Odyssey of Jedediah Strong Smith

Read: Ford, *Where the Sea Breaks Its Back*. Alternate: Burleigh, *Mirage*

Book review due

Second Great Age of Discovery

Feb 18

Transits of Venus, Meridians of Earth: The Enlightenment Explores

Feb 23

Midterm 1

Feb 25

Second Age: Excursions, Circumnavigations, and Grand Tours

Mar 2

Humboldt: Explorer of the Cosmos

Mar 4

America: Exploration's Nation

Mar 9

The Voyage of the *Beagle*: Exploration and Science

Video: *Ladder of Creation* [clips]

Read: Ambrose, *Undaunted Courage*. Alternate: Philbrick, *Sea of Glory*

Book review due

Mar 11

The Arts of Discovery

Video: *The West of the Imagination: The West as Romantic Horizon* (50 mins)

Mar 16 & 18 **Spring break**

Mar 23

How the Canyon Became Grand

Read: Stegner, *Beyond the Hundredth Meridian*. Alternate: Hopkirk, *Trespassers on the Roof of the World: The Secret Exploration of Tibet*

Book review due

Mar 25

Terra Australis: The Burke and Wills Expedition

Mar 30

The Dark Continent: Europe Explores Africa

April 1

Midterm 2

Apr 6

Arctic Quest: The Search for Sir John Franklin

Apr 8

The Worst – and Best – Journey in the World: Antarctica

Read: Lansing, *Endurance*. Alternate: Bickel, *Mawson's Will*

Book review due

Third Great Age of Discovery

Apr 13

The Third Age: Modernism Explores

Apr 15

Ice: Antarctica

Apr 20

Space Race

Video: ABC News, *Racing for the Moon* (50 mins)

Apr 22

The Exploration of Mars

Video: Sagan, *Cosmos. Blues for a Red Planet* [clips]

Read: Wolfe, *The Right Stuff*. Alternate: Ballard, *Eternal Darkness*.

Book review due

Apr 27

Abyss: The Deep Oceans

Video: *The Next Frontier* [clips]

Apr 29

Exploration and Empire: Geopolitics and Discovery

May 4

Seeking Newer Worlds: Voyager

[tba]

Midterm 3 (final exam)

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GUIDELINES

Book Reviews

The review is not a book report but a personal essay that examines *what is said, how it is said, and whether it was worth saying*.

The essay, that is, must identify the important themes, arguments, and data of the book; it must consider how the author organizes and conveys that material; and it must extend some judgment about the success of the book on the reader, the book's probable audiences, and its overall character. The order of presentation and the degree of emphasis given to each aspect is up to the student, but the choice should bear some relationship to the character of the book in question. The choice of voice, first person or third, is up to you. Insight, thoughtfulness, care of expression – all are important criteria in evaluating the essay.

Remember, speak to the book, not just its themes. Don't simply retell the saga or tragedy, or elaborate on why a protagonist (or author) is a hero or a jerk. Go beyond those reactions to explain why.

Finally, these books are non-fiction: they speak to real events, although the author may use some of the literary or rhetorical devices more common to fiction. The assigned readings are emphatically not novels.

Some particulars:

- Reviews should run between 1000-1500 words.
- No email attachments accepted
- Review due by end of class on day posted in syllabus

GUIDE TO MIDTERMS (HPS 336)

First Midterm

Critical concepts

- the concept and properties of the three great ages of discovery
- the main maritime cultures of the 15th century
- the status of European exploration on the eve of the Great Voyages of the First Age
- the motivations behind European exploration
- the main features of European ship technology
- the state of the navigational arts
- the natural wealth of those places of interest to Europeans (eg, spices, gold, furs)
- the features of the “Portuguese paradigm”
- the major achievements of discovery – first to round Africa, first to reach India, etc.
- basic navigational devices available in the period

Identifications

Ferdinand Magellan	Juan Sebastian del Cano	sea otter
Prince Henry “the Navigator”	Afonso de Albuquerque	Hernando de Soto
St Francis Xavier	Society of Jesus (Jesuits)	Francisco de Coronado
Malacca (city and strait)	South Sea	Mick Leahy
Fur desert	<i>Victoria</i>	Sieur de LaSalle
Vasco da Gama	Zheng Ho	caravel
Jedediah Strong Smith	Luis de Camões	
Strait of Magellan	Alexander Mackenzie	
Northwest Passage	Cape of Good Hope	
Northeast Passage	Vitus Bering	
Hudson’s Bay Company	monsoonal winds	
Goa	Vasco Nuñez de Balboa	

Second Midterm

Critical concepts

- the core properties of the Second Great Age of Discovery
- ways in which modern science begins to influence exploration
- the reasons for the revival of exploration in the 18th century
- the spectrum of natural philosophy expeditions in the 18th century
- the contributing causes for natural history expeditions
- the role of exploration in stimulating larger cultural questions
- contrasts between first and second age explorers
- economic incentives behind continental exploration
- reasons for the different character of exploration in various continents

Identifications

Alexander von Humboldt	Army Corps of Topographical Engineers
Aimé Bonpland	Pierre-Louis Moreau de Maupertuis
Frederick Church	Henry Stanley
Charles Darwin	Franz Boas
Alfred Russel Wallace	Burke and Wills Expedition
Lt. Charles Wilkes	Long Expedition
U.S. Exploring Expedition	Clarence Dutton
Pacific Railroad Surveys	Ives Expedition
Clarence King	Great Surveys [of the American West]
Grand Reconnaissance	<i>Cosmos</i>
Karl Bodmer	<i>Voyage of the Beagle</i>
George Catlin	Galapagos Islands
Alfred Jacob Miller	John Wesley Powell
Capt. James Cook	Charles Sturt
Transit of Venus	Charles-Marie de LaCondamine
Isabella Godin	Red Centre
Linnaeus (Carl von Linné)	California State Survey
Linnaean apostles	Joseph Banks
Grand Tour	Mount Chimborazo

Third Midterm

Critical concepts

- the special traits of the Third Great Age of Discovery
- the dates of the major pulses of Antarctic exploration
- the main contours of Arctic exploration
- the motivations behind Antarctica's "heroic age"
- the various explorations of the solar system
- the changing concept of sovereignty, especially over the terranes of the Third Age
- the origins of deep sea exploration

Identifications

International Geophysical Year (IGY)	Voyager missions
Robert Scott	Pioneer missions
William Beebe	Mariner missions
Ernest Shackleton	<i>Apollo 11</i>
Apsley Cherry-Garrard	Richard Byrd
Sputnik	Antarctic Treaty
Projects Mercury, Gemini, Apollo	HMS <i>Challenger</i>
international polar years	<i>The Worst Journey in the World</i>
Antarctica's "heroic age"	Franklin Expedition
rights of first discovery	Robert Peary
common heritage of all mankind	Lady Jane Franklin
Law of the Sea	Viking mission
<i>terra nullius</i>	<i>Alvin</i>
<i>Trieste</i>	