



COURSE OUTLINE : HIST 133
D Credit – Degree Applicable
COURSE ID 004115
Cyclical Review: September 2018
Revision: October 2021

COURSE DISCIPLINE : HIST
COURSE NUMBER : 133
COURSE TITLE (FULL) : History of Science
COURSE TITLE (SHORT) : History of Science
ACADEMIC SENATE DISCIPLINE: History

CATALOG DESCRIPTION

HIST 133 is a history of the notable scientific ideas and discoveries in Western civilization. It is a seminar, colloquial style discussion that examines the forces in history that led to the development of the major scientific revolutions and thinkers that have shaped modern industrialized humanity and culture. Some of the thinkers and scientists studied include the philosophy of science, the scientific method, science and pseudoscience, how science interacts with other cultural elements, ancient science, magic and renaissance science, the Copernican Revolution, the Newtonian Revolution, the Darwinian Revolution, Pasteur and the medical revolution, and the Einstein Revolution. The course enhances students' understanding of the present by a better understanding of the past.

Total Lecture Units:3.00

Total Laboratory Units: 0.00

Total Course Units: 3.00

Total Lecture Hours:54.00

Total Laboratory Hours: 0.00

Total Laboratory Hours To Be Arranged: 0.00

Total Contact Hours: 54.00

Total Out-of-Class Hours: 108.00

Recommended Preparation: ENGL 100 or ESL 151.



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ENTRY STANDARDS

	Subject	Number	Title	Description	Include
1	ENGL	100	Writing Workshop	Read, analyze, and evaluate contemporary articles and stories to identify topic, thesis, support, transitions, conclusion, audience, and tone;	Yes
2	ENGL	100	Writing Workshop	read, analyze, and evaluate contemporary articles and stories for the comprehension of difficult content and the identification of main ideas and (topic-based) evidence;	Yes
3	ENGL	100	Writing Workshop	read, analyze, and evaluate student compositions for unity, development, use of evidence, interpretation, coherence, and variety of sentence form;	Yes
4	ENGL	100	Writing Workshop	write a summary of a contemporary article or story with correct citation techniques;	Yes
5	ENGL	100	Writing Workshop	write an argumentative essay that has an introduction, body paragraphs, and a conclusion, demonstrating a basic understanding of essay organization;	Yes
6	ENGL	100	Writing Workshop	write an argumentative essay that addresses the topic, is directed by a thesis statement, uses appropriate textual evidence, develops logical interpretations, and concludes with some compelling observations;	Yes
7	ENGL	100	Writing Workshop	write an argumentative essay that integrates the ideas of others (i.e., authors) through paraphrasing, summarizing, and quoting with correct citation techniques;	Yes
8	ENGL	100	Writing Workshop	write an argumentative essay that generates novel ideas (those that add to the conversation rather than repeating the author's ideas) related to the topic and the readings;	Yes
9	ENGL	100	Writing Workshop	write compositions (e.g., summaries and argumentative essays) that are easy to read and follow, though some errors in grammar, mechanics, spelling, or diction may exist;	Yes
10	ENGL	100	Writing Workshop	proofread and edit essays for content, language, citation, and formatting problems.	Yes
11	ESL	151	Reading and Composition V	Read and critically analyze various academic readings;	Yes
12	ESL	151	Reading and Composition V	summarize readings;	Yes
13	ESL	151	Reading and Composition V	organize fully-developed essays in both expository and argumentative modes;	Yes



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14	ESL	151	Reading and Composition V	compose a 500 to 550-word essay which: summarizes and cites appropriately a reading passage; includes a clear thesis statement; uses evidence to support the thesis; shows clear organization into an introduction, body, and conclusion;	Yes
15	ESL	151	Reading and Composition V	revise writing to eliminate errors in syntax, and grammatical constructions;	Yes
16	ESL	151	Reading and Composition V	employ basic library research techniques;	Yes
17	ESL	151	Reading and Composition V	compose one research paper (1,000 words) or two short research papers (500-700 words each) with citations.	Yes

EXIT STANDARDS

- 1 Summarize various scientific philosophies and approaches;
- 2 explain key events from the history of science;
- 3 illustrate major shifts in the fields of math, physics, biology, and chemistry.

STUDENT LEARNING OUTCOMES

- 1 evaluate how scientific skills developed over time;
- 2 debate controversial issues using historical texts;
- 3 evaluate and discuss the interaction of science and culture.

COURSE CONTENT WITH INSTRUCTIONAL HOURS

	Description	Lecture	Lab	Total Hours
1	Introduction/History of Science <ul style="list-style-type: none"> • Science and pseudoscience • Relationships between science and cultural traditions • The world of prescience myth and science 	4	0	4
2	Science in the Ancient World: Mesopotamia, Sumeria, Greece <ul style="list-style-type: none"> • Hellenic and Hellenistic Science • Islamic Science • Indian science: Hindu Math 	10	0	10
3	Roman Science/Technology and the Rise of Islamic Science <ul style="list-style-type: none"> • Medieval science 	1	0	1
4	The Copernican Revolution	3	0	3
5	The Newtonian Revolution and Synthesis	3	0	3



6	The Scientific Revolution	3	0	3
7	Science and the Enlightenment	4	0	4
8	The Geological Revolution and the Discovery of the Earth	2	0	2
9	The Darwinian Revolution and Evolution Deep Time <ul style="list-style-type: none"> • Darwin and the Victorian world • Natural Selection and the development of the genetic world of science 	2	0	2
10	Pasteur and the Medical Revolution <ul style="list-style-type: none"> • Development of medical science in America 	3	0	3
11	Faraday, Maxwell and the Discovery of Electromagnetism	2	0	2
12	New Directions in Math: Cantor, Peano, Russel	2	0	2
13	The Eisenstein Revolution—Relativity in the Context of Fin de Siècle Europe	5	0	5
14	Quantum Mechanics	3	0	3
15	The Big Bang	3	0	3
16	Unresolved Issues in Cosmology, Physics, Life Science	4	0	4
				54

OUT OF CLASS ASSIGNMENTS

- 1 essay (e.g. write an essay which compares the changes brought about by the Newtonian revolution to those brought about by the Einsteinian revolution);
- 2 research paper (e.g. a short biography of a notable 19th or 20th century scientist, followed by an evaluation of the impact of his or her work not only upon the field of science but also upon the global community).

METHODS OF EVALUATION

- 1 examinations;
- 2 class participation demonstrating course exit standards (e.g., in-class debate about the general impact of science on the non-scientific community);
- 3 group presentation (e.g., present as a group the various influences of the theory of relativity in the 20th-century U.S.).

METHODS OF INSTRUCTION

- Lecture
- Laboratory
- Studio
- Discussion
- Multimedia



- Tutorial
- Independent Study
- Collaboratory Learning
- Demonstration
- Field Activities (Trips)
- Guest Speakers
- Presentations

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TEXTBOOKS

Title	Type	Publisher	Edition	Medium	Author	ISBN	Date
The Genesis of Science	Required	Regnery Publishing	2	Print	Hannam, James	9781596981553	2014
The Structure of the Scientific Revolution	Required	University of Chicago Press	4	Print	Kuhn, Thomas S.	9780226458120	2012