

**GRADUATE STS 6305 6.0/HUMA 6310 6.0/HIST 5830 6.0/SPT 6100A 6.0:  
CONTEXTS OF VICTORIAN SCIENCE**

2017-2018

COURSE DIRECTOR: Professor Bernard Lightman,  
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OFFICE LOCATION: 046 McLaughlin College

OFFICE HOURS: Wednesdays 10:00-11:15

COURSE TIMES: Wednesdays 11:30-2:30

CLASS LOCATION: Vari Hall 1152

Course Description

This course focuses on nineteenth century British science and its social, political, cultural, and intellectual contexts. Adopting the "contextualist" approach to the history of science allows us to raise a series of provocative questions: in what way did all of these different contexts shape the "nature" of nineteenth century scientific thought? how were scientific "facts" socially constructed? what was it about the nineteenth century context that led many intellectuals to reject Christianity and embrace science as providing a new, privileged form of knowledge? Included among the topics to be covered are the discourse of natural theology, radical working class evolutionism during the 1830's, the plurality of worlds debate, science and gender, the professionalization of science, the literary structure of Darwin's Origin of Species, Darwinian theory and its ideological uses, science and imperialism, the popularization of science, the practice of science, and late nineteenth century physics and psychics.

Course Requirements

There will be one two and a half hour group discussion per week on Wednesdays from 11:30-2:30. These sessions will focus directly on the assigned readings. All members of the course will be expected to have read the assigned readings with care and forethought, and to come to class prepared to discuss the readings with the other members of the group:

First term research essay and oral presentation	30% (12 pages)
First term oral presentation	10%
Second term research essay	40% (18-20 pages)
Second term oral presentation	10%
Class participation	10%

Required Books

The following have been ordered through the York University Bookstore:

- Adrian Desmond. The Politics of Evolution (University of Chicago Press)  
James Secord. Victorian Sensation (University of Chicago Press)  
Crosbie Smith. The Science of Energy: A Cultural History of Energy Physics in Victorian Britain (University of Chicago Press)  
Charles Darwin. The Origin of Species Abridged by P. Appleman. (W. W. Norton)  
George Levine. Darwin and the Novelists (University of Chicago Press)  
Bernard Lightman (ed). Victorian Science in Context (University of Chicago Press)

A sourcebook of readings will be on sale in the bookstore and a small number of readings will be on two hour reserve in Scott library, listed under HUMA 6310. You will also be asked to read a few articles from non-circulating journals in the Scott Library.

### Course Schedule and Reading Assignments

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|--------------|--|
| September 13 | Introduction   |
| September 20 | <b>HISTORIOGRAPHY AND AN INTERPRETIVE FRAMEWORK</b><br><br>Robert Young. "The Historiographic and Ideological Contexts of the Nineteenth-Century Debate" from <u>Darwin 's Metaphor</u> , pp. 164-247, 270-285, on reserve and on line (see: <a href="http://human-nature.com/dm/chap6.html">http://human-nature.com/dm/chap6.html</a> )               |
| September 27 | <b>THE DISCOURSE OF NATURAL THEOLOGY</b><br><br>Schweber. "Scientists as Intellectuals" in Sourcebook<br>Paley. <u>Natural Theology</u> in Sourcebook<br>Paley. <u>Reasons for Contentment</u> in Sourcebook<br>Winter. "The Construction of Orthodoxies and Heterodoxies in the Early Victorian Life Sciences" in <u>Victorian Science in Context</u> |
| October 4    | <b>RADICAL WORKING CLASS EVOLUTIONISM DURING THE THIRTIES</b><br><br>Desmond. <u>The Politics of Evolution</u> chaps 1-3   |
| October 11   | Desmond. <u>The Politics of Evolution</u> chaps 4,5,9, afterword<br>Anne Secord. "Science in the Pub: Artisan Botanists  |

in Early Nineteenth-Century Lancashire." History of Science 32 (1994), 269-315.

October 18

VESTIGES, THE PLURALITY OF WORLDS DEBATE AND NATURAL THEOLOGY IN THE 40's AND 50's

Chambers. Vestiges of the Natural History of Creation in Sourcebook  
Secord. "Behind the Veil: Robert Chambers and 'Vestiges' in Sourcebook  
Brooke. "Natural Theology and the Plurality of Worlds." Annals of Science 34 (1977), 221-86.

October 25

No class—Reading Days

November 1

VESTIGES AND ITS READERS

James Secord. Victorian Sensation

November 8

No class—work on oral reports and research essays

November 15

SCIENCE, RELIGION, AND SCIENTIFIC NATURALISM

Huxley. "On the Adviseableness of Improving Natural Knowledge" in Sourcebook  
Moore. "1859 and All That" in Sourcebook  
Turner. "The Victorian Conflict Between Science and Religion." Isis 69 (1978), 356-376.

November 22

THE NORTH BRITISH PHYSICISTS

Crosbie Smith. The Science of Energy: A Cultural History of Energy Physics in Victorian Britain  
chaps 1-14

November 29

Oral reports on science in Victorian periodicals  
(we may need to schedule an additional class to complete the oral reports)

RESEARCH ESSAYS DUE on December 10

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January 10

DARWIN AND THE ORIGIN

- Video on Darwin: "Darwin: The Devil's Chaplain"  
 Darwin. The Origin of Species, pp. 25-123
- January 17 Darwin. The Origin of Species, pp. 25-123
- January 24 SOCIAL DARWINISM AND HERBERT SPENCER
- Spencer. "Progress: Its Law and Cause" in Sourcebook  
 Spencer. Social Statics in Sourcebook  
 Moore. "Socializing Darwinism" in Sourcebook
- January 31 SCIENCE AND IMPERIALISM
- Hunt. "Doing Science in a Global Empire" in Victorian Science in Context, 312-333  
 Ritvo. "Zoological Nomenclature and the Empire of Victorian Science" in Victorian Science in Context, 334-353  
 Camerini. "Remains of the Day: Early Victorians in the Field" in Victorian Science in Context, 354-377
- February 7 DARWINIAN THEORY AND THE PROTESTANT RESPONSE
- James Moore. The Post-Darwinian Controversies, pp. 216-351, 382-400, available as e-book on library website
- February 14 SCIENCE AND GENDER
- Richards. "Darwin and the Descent of Woman," in The Wider Domain of Evolutionary Thought, ed. D. Oldroyd & I. Langham, on Reserve  
 Richards. "Redrawing the Boundaries: Darwinian Science and Victorian Women Intellectuals" in Victorian Science in Context, 119-142  
 Maudsley. "Sex and Mind in Education" in Sourcebook  
 Shteir. "Elegant Recreations? Configuring Science Writing for Women" in Victorian Science in Context, 236-255
- February 21 No class – Reading Week

February 28

## POPULARIZERS OF SCIENCE

Lightman. "'The Voices of Nature': Popularizing Victorian Science" in Victorian Science in Context, 187-211

Proctor. Other Worlds Than Ours in Sourcebook

Proctor. "A Voyage to the Ringed Planet" in Sourcebook

March 7

## EXHIBITIONS, MUSEUMS, AND CONVERSAZIONE

Alberti. "Conversaciones and the Experience of Science In Victorian England" in Sourcebook

Forgan. "Bricks and Bones: Architecture and Science in Victorian Britain" in Sourcebook

Alberti. "Placing Nature: Natural History Collections and Their Owners in Nineteenth-Century Provincial England" In Sourcebook

March 14

## DARWIN AND THE NOVELISTS

Levine. Darwin and the Novelists

Paradis. "Satire and Science in Victorian Culture" In Victorian Science in Context, 143-175

Fayter. "Strange New Worlds of Space and Time: Late Victorian Science and Science Fiction" in Victorian Science in Context 256-280

March 21

## INSTRUMENTS AND SCIENTIFIC PRACTICE

Tucker. "Photography as Witness, Detective, and Impostor" in Victorian Science in Context 378-408.

Goody. "Instrumentation and Interpretation" in Victorian Science in Context 409-437

Schaffer. "Metrology, Metrication, and Victorian Values" in Victorian Science in Context 438-474

Clerke. "Sidereal Photography" in Sourcebook

March 28

SPIRITUALISM AND THE DEATH OF SCIENTIFIC  
NATURALISM

Wynne. "Physics and Psychics" in Sourcebook

Wallace. Miracles and Modern Spiritualism in  
Sourcebook

Lightman. "Fighting Even with Death" in  
Sourcebook

April 4

CONCLUSION

Reread: Robert Young. "The Historiographic and Ideological  
Contexts of the Nineteenth-Century Debate" from Darwin's  
Metaphor, pp. 164-247, 270-285, on reserve

RESEARCH ESSAYS DUE April 15th