

Программа учебной дисциплины «Science and English Literature»
Утверждена
Академическим советом ООП “Русская литература и компаративистика”
Протокол № от «21» мая 2018 г.

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Число кредитов	2
Контактная работа (час.)	28
Самостоятельная работа (час.)	48
Курс	1
Формат изучения дисциплины	без использования онлайн курса

Syllabus

1. Course Description

- a. Title of the Course: **Science and English Literature**
- b. Pre-requisites: Minimum B2 Level English
- c. Course Type: Elective
- d. Abstract: This course explores relationships between literature and scientific thought from the nineteenth century onwards. Connections between the two fields are multiple and nuanced: writers of literature aiming for new models for representing the world have routinely engaged with scientific theories, while scientists have also leaned upon metaphor and other literary rhetoric in explaining their ideas. The course will examine a range of texts spanning literary genres which illustrate these connections.

2. Learning Objectives

The objectives of this module are:

- To present texts exemplar of the interaction between literature and science
- To outline key approaches to analysing the engagement of literary texts with scientific theory
- To develop an appreciation of the two-way relationship between the fields of literature and science

3. Learning Outcomes

By the end of the course, students will:

- Recognize major points of intersection between scientific theory and works of literature across a range of genres
- Be able to employ scientific theory as a tool for analysing literature
- Recognize the role of narrative form in moulding scientific thought and discourse

4. Course Plan

Week 1/2: Science and Human Nature

Primary Text: Mary Shelley, *Frankenstein* (1818)

These weeks will introduce the field of Literature and Science by looking at a seminal example of literature engaged with science – Mary Shelley’s *Frankenstein*. Drawing upon the then current ideas of Galvanism (using electricity to stimulate life), *Frankenstein* interrogates the ways in which science estranges humanity from nature, and the very question of what it means to be human.

Recommended Secondary Reading:

John Johnston, ‘AI and Alife,’ in Bruce Clarke, Manuela Rossini (eds.) *The Routledge Companion to Literature and Science*. London: Routledge, 2012.

Esther Schor (ed.), *The Cambridge Companion to Mary Shelley*. Cambridge, Cambridge UP, 2006 – especially the introduction to *Frankenstein* by Anne K. Mellor, and ‘*Frankenstein’s* Futurity’ by Jay Clayton.

Sharon Ruston, ‘The science of life and death in Mary Shelley’s *Frankenstein*’ (at www.bl.uk/romantics-and-victorians/articles/the-science-of-life-and-death-in-mary-shelleys-frankenstein).

Week 3/4: Literary Form and Scientific Texts

Primary Text: Charles Darwin, *On the Origin of Species* (1859)

Not only does scientific thought affect literature – literary form also affects scientific thought. In these weeks, we will reflect upon the reciprocity of this relationship, considering as an example how the argument of Darwin’s *Origin of Species* is intertwined with its narrative techniques.

Recommended Secondary Reading:

Gillian Beer, *Darwin's Plots* (3rd Edition). Cambridge: Cambridge UP, 2009.

Peter Dear (ed): *The Literary Structure of Scientific Argument*. Philadelphia: U of Pennsylvania Press, 1991 – Especially Chapter Six, 'Argument and Narrative in Scientific Writing' by Frederic L. Holmes.

George Levine, *Darwin the Writer*. Oxford: Oxford UP, 2011.

Week 5/6: Forensic Science and Detective Fiction

Primary Text: Arthur Conan Doyle, *The Adventures of Sherlock Holmes* (1982)

These weeks will focus upon detective fiction. The genre is heavily invested in scientifically-derived techniques (fingerprinting, the autopsy, DNA sampling, and so on). The purpose of these is typically to establish an identity, be it of victim or perpetrator. We will discuss how this scientific construction of identity interrelates with character as a literary concept.

Recommended Secondary Reading:

James O'Brien, *The Scientific Sherlock Holmes: Cracking the Case with Science and Forensics*. Oxford: Oxford UP, 2013.

Ronald R. Thomas, *Detective Fiction and the Rise of Forensic Science*. Cambridge: Cambridge UP, 1999 – especially Chapter 1, 'The Devices of Truth.'

Lawrence Frank, *Victorian Detective Fiction and the Nature of Evidence: The Scientific Investigations of Poe, Dickens, and Doyle*. Houndmills, Basingstoke: Palgrave Macmillan, 2003.

Week 7/8: Technological Dependency

Primary Text: E.M. Forster, 'The Machine Stops' (1909)

These weeks will address the need we have for technology, and its need for us. In E.M. Forster's short story 'The Machine Stops,' a machine serves all vital functions for humanity, but suddenly stops. The story presciently imagines technologies similar to instant messaging, tablet computers, and the internet. Are its predictions regarding technological dependence also prescient?

Recommended Secondary Reading:

Silvana Caporaletti, 'Science as Nightmare: "The Machine Stops" by E.M. Forster.' *Utopian Studies* 8.2 (1997): 32-47.

Ana Cristina Zimmermann and W. John Morgan, 'E.M. Forster's "The Machine Stops:" Humans, Technology and Dialogue.' *AI and Society* (<https://doi.org/10.1007/s00146-017-0698-3>).

Week 9/10: Inhuman Scale

Primary Text: Olaf Stapledon, *Last and First Men* (1930)

Across the 19th century and the beginning of the 20th, advances in geology and astronomy conspired to reveal that the Earth was much older than previously thought, and the cosmos much vaster. These weeks will consider how literature has dealt with the human implications of inhuman scale, focusing upon a novel with a two-billion-year timespan, *Last and First Men* by Olaf Stapledon.

Recommended Secondary Reading:

Robert Crossley, 'Olaf Stapledon and the Idea of Science Fiction.' *Modern Fiction Studies*, 32.1

(1986): 21-42.

Timothy S. Murphy, 'Physiology is Destiny: The Fate of Eugenic Utopia in the Fiction of H.P. Lovecraft and Olaf Stapledon.' *Utopian Studies*, 29.1 (2018): 21-43.

Max Nordau, *Degeneration*. London: Heinemann, 1895.

Week 11/12: The Conscience of Science

Primary Text: Aldous Huxley, *Island* (1962)

These weeks will address literature's approach to the relationship between scientific rationalism and religious faith. Aldous Huxley's *Island* is a "utopian phantasy," in which a fictional kingdom, Pala, blends East Asian religious philosophy with Western scientific ideas. How does the balance between the rational and spiritual function in the novel, if indeed it does?

Recommended Secondary Reading:

Gorman Beauchamp: '*Island: Aldous Huxley's Psychedelic Utopia.*' *Utopian Studies*, 1.1 (1990): 59-72.

June Deery, *Aldous Huxley and the Mysticism of Science*. Houndmills, Basingstoke: Palgrave Macmillan, 1996.

Aldous Huxley, *Literature and Science*. New York: Harper and Row, 1963.

Week 13/14: Genetics and Bio-Catastrophe

Primary text: Margaret Atwood, *Oryx and Crake* (2003)

These weeks will address literature of biological catastrophe, focusing upon Margaret Atwood's *Oryx and Crake* as an example. Humanity's drive to alter nature for its own purposes, witnessed also in *Frankenstein*, may also have wider unintended consequences. How do we prevent technology designed for good from having disastrous results?

Recommended Secondary Reading

Hannes Bergthaller, 'Housebreaking the Human Animal: Humanism and the Problem of Sustainability in Margaret Atwood's *Oryx and Crake* and *The Year of the Flood*.' *English Studies* 91.7 (2010): 728-743.

Jay Sanderson, 'Pigeons, Rakunks and Crakers: Margaret Atwood's *Oryx and Crake* and Genetically Engineered Animals in a (Latourian) Hybrid World.' *Law and Humanities*, 7.2 (2013): 218-239.

5. Reading List

In addition to the material above, the following texts are valuable for the course at large:

- CP Snow, *The Two Cultures and the Scientific Revolution*. Oxford: Oxford UP, 1959.
- Gowan Dawson, 'Literature and Science Under the Microscope.' *Journal of Victorian Culture*, 11.2 (2006): 301-315.
- Gillian Beer, *Open Fields: Science in Cultural Encounter*. Oxford: Oxford UP, 1996.
- Daniel Cordle, *Postmodern Postures: Literature, Science and the Two Cultures Debate*. Aldershot: Ashgate, 1999.
- George Levine (ed), *One Culture: Essays in Science and Literature*. Madison, WI: U of Wisconsin P, 1987.
- Tess Cosslett, *The 'Scientific Movement' and Victorian Literature*. Brighton: Harvester, 1982.
- Charlotte Sleight, *Literature and Science*. Houndmills, Basingstoke: Palgrave Macmillan, 2011.
- Sharon Ruston, *Literature and Science*. Cambridge: Brewer, 2008.

6. Grading System

Grades will be awarded on a 0-10 scale (per university standards). That is:

8-10: Excellent

6-7: Good

4-5: Satisfactory

0-3: Fail

7. Guidelines for Knowledge Assessment

75% of the final grade will come from an oral examination. This will take the form of a 10-15 minute prepared presentation, on a subject of the student's choosing from a list to be distributed at the start of the course. The marking of the presentation will be weighted to reflect the time available to prepare (i.e. more clarity and depth of argument will be expected than for an exam where the questions are not known in advance).

The exam will be graded on:

50%: Content of argument. A strong paper will present and develop its own clear thesis.

25%: Use of sources. The paper should make appropriate, credited use of both primary and secondary material in building its argument. Moreover, it should be understandable which opinions come from secondary sources, and which are the student's own.

25%: Organization. The paper should contain a clear progression of ideas.

A further 25% of the final grade will come from class participation. The focus will be on contributing to a thoughtful scholarly discussion. Original thoughts and penetrating questions generally advance the conversation more than second-hand facts. Don't be afraid of being wrong: seminars will be a chance to experiment with ideas.

8. Methods of Instruction

Instruction will be via alternating lectures (14 academic hours) and seminars (14 academic hours).

9. Special Equipment and Software Support (if required)

No special equipment or software support are required for this course.