First-Year Interdisciplinary Seminar: Science and Literature
FIRST-UG85
Fall 2015

In a 1959 lecture titled “The Two Cultures,” C. P. Snow famously declared, “the intellectual life of the whole of western society is increasingly being split into two polar groups,” with “literary intellectuals at one pole—at the other scientists.” Snow asserted that the two are separated by “a gulf of mutual incomprehension,” even “hostility and dislike.” Snow’s view of a fundamental antagonism between science and literature has its roots in the nineteenth-century; his concept of “two cultures” remains influential today. But was he right? This course addresses that question, seeking to deepen our understanding of the relationship between science and literature. Our readings will pair literary and scientific texts—Michael Frayn’s play Copenhagen and quantum theory; Allegra Goodman’s novel Intuition and sociological theories of scientific competition; Thomas Hardy’s Tess of the d’Urbervilles and evolutionary theory—and we will also consider important statements about the relationship between the two disciplines. Assignments will include analytical papers as well as opportunities for students to create their own literary responses to science.

Course Goals:

• to gain an understanding of the relationship between science and literature in the Anglophone world of the past two centuries

• to become familiar with the methods of interdisciplinary study that will be crucial to your work as a Gallatin student

• to gain practice exchanging and developing ideas in a seminar-style class

Required Texts:

1. Books. All are available at the NYU Bookstore. Please purchase the specified editions; you must own books in hard copy, not on e-readers.


** It’s especially important that you obtain the specified edition of this text! Please ask me if you have questions. **


Copies of the books are available on three-day reserve at Bobst.
2. Course Packet. Available at the NYU Bookstore.

3. I will also distribute some supplementary readings in class or post them on our Classes site.

Course Requirements

• Informal assignments. The purpose of these is to help you read actively and prepare for class discussion as well as your papers. There will be three types:

a) Commonplacing. Every week after Week 1, you’ll contribute an entry to an electronic commonplace book by posting two passages to the class’s blog. Commonplace entries are due by 2 pm every Monday. (Full instructions will be on a separate handout.)

b) Response Papers. You’ll write seven 300-word papers, in response to prompts included on the assignment sheets. The purpose of these papers is to help you develop ideas for discussion and explore topics for your essays. On the day that responses are due, please bring a paper copy to class.

c) Leading class discussion.

On one day of the semester, you will work with a partner to lead discussion of the day’s readings. (The schedule of these presentations will be circulated after the first week of class.)

• Participation: You should arrive punctually and be prepared for class, which means that you’ve completed the reading and any assignments, and brought with you all necessary materials. You should also participate actively in seminar discussions and other activities, which includes contributing thoughtful comments and questions to discussion; engaging with other students as well as the professor; and listening attentively.

• Three formal assignments:

   Paper 1: a four- or five-page paper about *The Time Machine*, *Einstein’s Dreams*, or “Entropy” and one of the scientific texts we’ve read alongside them.

   Paper 2: a seven-page paper about *Copenhagen*, *Intuition*, or *The Calcutta Chromosome* and one of the non-fiction texts that we have read alongside them.

   Paper 3: a final project for which there will be two options:

   — Option 1: an eight- to ten-page analytical essay about two of the literary texts that we’ve read (one of which must be a text you haven’t yet written about)

   — Option 2: an artistic piece that engages creatively with science

I’ll hand out detailed paper assignments as we go.

Grading

15%  Paper 1 
25%  Paper 2 
25%  Paper 3
15%  Informal Writing
20%  Class Participation

Grading Standards

• informal assignments:

  I’ll assess your commonplacing assignment on the basis of whether they are or are not completed punctually. Missing or late entries will cause your grade to drop.

  I’ll assess response papers on the basis of whether they demonstrate thoughtful engagement with the question and texts at hand. Basically what I’m looking for is that you put some time and effort into writing these papers and reflecting on the questions asked. (Same goes for your discussion-leading assignment.)

• papers:

  a paper in the A-range follows the instructions for the assignment; explores a focused topic; presents a coherent argument; motivates that argument by telling the reader why it matters; supports the argument with well-chosen, effectively analyzed evidence; develops the argument through a progressive structure; contains very few errors of spelling, grammar, or punctuation.

  a paper in the B-range resembles an A-range paper in some ways, but may deviate somewhat from the assignment; may explore an unfocused topic; may present an argument that lacks coherence or motivation; may lack evidence to support that argument, or analyze its evidence insufficiently; may feature a structure that is formulaic or lacking logic; may contain multiple errors of spelling, grammar, or punctuation.

  a paper in the C-range resembles a B-range paper in some ways, but may deviate more drastically from the assignment; may explore an overly broad or otherwise problematic topic; may present a simplistic argument, or one that is obvious and lacks motive; may have significant problems working with evidence, including an absence of analysis or signs of misunderstanding; may feature a confusing structure; may contain distracting errors of spelling, grammar, or punctuation.

  a paper in the D-range falls short of addressing the assignment in some significant way.

Policies

• Written Work: Deadlines in this class are important; for that reason, extensions will be granted only in the case of illness, family emergencies, or religious observance. Late papers will be penalized (normally, 1/3 of a grade for each day that they are late). Late informal writing (response papers and commonplace entries) may not be accepted.

You must submit all major assignments to pass the course, and you must do so within the time frame specified.

• Attendance: You may miss up to two classes without penalty; after that, absence for reasons other than documented illness, family emergency, or religious observance will affect your grade. Habitual lateness will also affect your grade.
• Academic Integrity: As a Gallatin student you belong to an interdisciplinary community of artists and scholars who value honest and open intellectual inquiry. This relationship depends on mutual respect, responsibility, and integrity. Failure to uphold these values will be subject to severe sanction, which may include dismissal from the University. Examples of behaviors that compromise the academic integrity of the Gallatin School include plagiarism, illicit collaboration, doubling or recycling coursework, and cheating. Please consult the Gallatin Bulletin or Gallatin website (http://gallatin.nyu.edu/academics/policies/integrity.html).

• Technology: In order to make it easier for everyone to focus on the collaborative and cooperative work of the seminar, you may not use a laptop, tablet, smartphone, or Google Glass in class for any purpose, unless otherwise instructed. This means that you must print out any assignments or papers needed for class on any given day. Please turn off or silence your mobile phone.

You are welcome to email me with questions; I read email regularly during weekdays, less frequently at night or on weekends.

Week One

Thursday, September 3
Introductions

Week Two

Tuesday, September 8
H. G. Wells, The Time Machine, to p. 70
Charles Darwin, from On the Origin of Species
E. Ray Lankester, from Degeneration: A Chapter in Darwinism

Thursday, September 10
Time Machine
Benjamin Kidd, from Social Evolution
Due in class: Response Paper 1

Week Three

Tuesday, September 15
Alan Lightman, Einstein's Dreams, to p. 78
Richard Wolfson, from Simply Einstein

Thursday, September 17
Alan Lightman, Einstein's Dreams, complete
Due in class: Response Paper 2

Week Four

Tuesday, September 22
Thomas Pynchon, "Entropy"
Norbert Wiener, "Progress and Entropy"
Peter Coveney and Roger Highfield, "The Arrow of Time"
Thursday, September 24
In-class work towards Paper 1; please draft your introduction and bring a printed copy to class.

Friday, September 25
Due at 6 pm: Paper 1

Week Five

Tuesday, September 29
Michael Frayn, Copenhagen, complete
John Gribbin, from In Search of Schrödinger's Cat

Thursday, October 1
Finish discussion of Copenhagen

Week Six

Tuesday, October 6
Thomas Henry Huxley, “Science and Culture”
Matthew Arnold, “Literature and Science”
C. P. Snow, from The Two Cultures
Response Paper 3

Thursday, October 8
Allegra Goodman, Intuition, to end of Part III, Chapter 4

Week Seven

Tuesday, October 13 * no class (classes meet on a Monday schedule)

Thursday, October 15
Goodman, Intuition, to end of Part IV, chapter 6
Robert Merton, “Priorities in Scientific Discovery”
Due in class: Response Paper 4

Week Eight

Tuesday, October 20
Goodman, Intuition, to end of Part V, chapter 8
Steven Shapin, from The Scientific Life

Thursday, October 22
Goodman, Intuition, complete

Week Nine

Tuesday, October 27
Visit from Yevgeniya Traps to discuss registration

Thursday, October 29
Amitav Ghosh, The Calcutta Chromosome, to p. 59
Week Ten

Tuesday, November 3
The Calcutta Chromosome, to p. 154

Thursday, November 5
Ghosh, The Calcutta Chromosome, to p. 230
Steve Woolgar, from Science, the very idea
Response Paper 5

Week Eleven

Tuesday, November 10
Ghosh, The Calcutta Chromosome, to p. 277

Thursday, November 12
Ghosh, The Calcutta Chromosome, complete
Ray Kurzweil, from The Singularity is Near

Week Twelve

Monday, November 16
Due at 6 pm: Paper 2

Tuesday, November 17
Lisa Zunshine, from Why We Read Fiction

Thursday, November 19
Franco Moretti, “Trees”
review Darwin, On the Origin of Species, and Lankester, Degeneration

Week Thirteen

Tuesday, November 24
Hardy, Tess of the d’Urbervilles, through Chapter XV
George J. Romanes, “Weisman’s Theory of Heredity”

Thursday, November 26 • Thanksgiving Break; no class

Week Fourteen

Tuesday, December 1
Tess of the d’Urbervilles, through Chapter XXX
Huxley, Evolution and Ethics
Response Paper 6

Thursday, December 3
Tess of the d’Urbervilles: through Chapter XLII

Week Fifteen

Tuesday, December 8
Tess of the d’Urbervilles, through Chapter XLVIII
Response Paper 7

Thursday, December 10
   Tess of the d'Urbervilles, complete

Week Sixteen

Tuesday, December 15
   course wrap-up

Friday, December 18
   Due at 6 pm: Assignment 3