

ENGLISH IV:SCIENTIFIC THEORY & LITERATURE

I pledge on my honor that I will not lie, cheat or steal; I will report all infractions of honor. When faced with a choice, I will endeavor to do the honorable and right thing.

Course Description: This English IV elective focuses on selected writings of scientific discovery and fiction relating to those discoveries. We will read about some of the big names in the scientific community through Margaret C. Jacob's *The Scientific Revolution*. We will then focus on the following scientists and their works: Johannes Kepler (an early astronomer), John Dalton (who pioneered the atomic theory), Charles Darwin (and his impact on biology through evolution), and Albert Einstein (with a focus on modern physics and his impact with the theory of relativity). Paired with a work by each of these scientists will be a fictional connection to it. For example, we will read Kepler's *The Six-Cornered Snow Flake* and John Banville's *Kepler: A Novel*; essays by John Dalton regarding atomic theory and Ray Cummings' *The Girl in the Golden Atom*; excerpts from Charles Darwin's *The Origin of Species* and all of Lewis Carroll's *Alice's Adventures in Wonderland*; and Einstein's *Relativity* and Alan Lightman's *Einstein's Dreams*.

By studying the science alongside a fictional take on it, we can analyze the importance of these scientists in our society, and find connections between science and stories that may not readily appear at first glance. Through keeping a daily reading and writing journal and holding class discussions, we will be able to tackle difficult subject matter, understand complex theories, and stretch our creative thinking skills to draw connections between the novels and essays we read. Expect a blend of traditional assessment (essays) and creative questions and projects suggested by you, the students in the class. <http://users.clas.ufl.edu/ufhatch/pages/03-Sci-Rev/SCI-REV-Home/05-SR-TABLE-CONTENTS.html>

Expectations:

- I expect that you are in this class because you want to be in it. Therefore, I expect you to keep up with the work and help me out if I don't understand something related to the science being discussed.
- I expect each of you to be a full participant in the class—to be here intellectually as well as physically!
- I expect you to read the works in English. I expect your work to be your own, and if you do research, please cite that research.

Texts:

Dalton, John. Lectures to be found online and placed under Topics.

Darwin, Charles. *The Origin of the Species: 150th Anniversary Edition*.

Einstein, Albert. *Relativity: The Special and General Theory*.

Jacob, Margaret C. *The Scientific Revolution: A Brief History with Documents*

Kepler, Johannes. *The Six-Cornered Snowflake*.

Banville, John. *Kepler: A Novel*.

Carroll, Lewis. *Alice's Adventures in Wonderland: Original Edition of 1865*.

Cummings, Ray. *The Girl in the Golden Atom*.

Lightman, Alan. *Einstein's Dreams*.

Grades: Please note that for every unexcused absence, I will deduct 2.5 points from your final grade. If lateness becomes an issue, I also reserve the right to take points off either the late work or your final grade. If you need extra time for work, please ask!

Assignments**Percentage of Final Grade**

Weekly Journal Entries	25%
Presentations & class participation	20%
Papers	35%
Creative Group Project—Final	20%

Schedule of Events--Monday is our 75 minute class

M	8/29	Overview and intentions and hopes for the class. What WAS the scientific revolution? when did it happen? why did it happen? How would you define science? What might be some relationships between science and art? science and literature? Begin reading our homework in class.
T	8/30	For today's class, please read in <i>The Scientific Revolution</i> : Copernicus, pp. 45-50, Galileo, pp. 59-63, and Descartes, pp. 70-83. Write in your

journal your thoughts on these passages: what stands out to you in the writing? what do you learn? what had you not thought of before?

W 8/31 For today's class, please read in *The Scientific Revolution*: William Harvey, pp. 64-69, Leeuwenhoek, pp. 93-95, and Maria Sibylla Merian pp. 115-119. In your journal, note that we are focusing on the animal world in these readings. What strikes you about these writings? What did these writings make you think about? Did anything in the writings surprise you?

F 9/2 **Journals due.** We summarize the week. We assign presentation topics for Monday's class. Each student has 10 minutes to provide a picture of their scientist and to talk why her scientist is important.

Abbi: Isaac Newton (1643-1726) Elizabeth: Tycho Brahe (1546-1601)

Joaquina: Émilie du Châtelet (1706-1749)

Lily: Song Yingxing (1587-1666) Luna: Guo Shoujing (1231-1316)

M 9/5 **Presentations.**

T 9/6 Bring to class 3 Fun Facts about Johannes Kepler. Begin reading Banville's fictional account of Kepler's life simply entitled Kepler.

W 9/7 Discuss pages 3-27. stop at the * * * Write 1 paragraph in your journal.

Th 9/8 Discuss pages 27-52. write 1 paragraph in your journal.

Weekend

M 9/12 Discuss pages 55-86. write 1 paragraph in your journal

T 9/13 Discuss pages 89-108. write 1 paragraph in your journal

Th 9/15 Discuss pages 111-125. write 1 paragraph in your journal

Weekend

M 9/19 Discuss pages 126-152. write 1 paragraph in your journal.

T 9/20 Discuss pages 155-169, stopping at *** write 1 paragraph in your journal.

- W 9/21 discuss pages 169-192. Last journal for Banville. **Turn in journal.**
- Th 9/22 Paper Question: How does Banville's fictional account of Kepler's life help us to understand what it was like to be a scientist during the scientific revolution? and what do we learn about Kepler's concerns/worries as a scientist and as a human being?

Weekend

- M 9/26 **Paper due.** Begin Kepler's *The Six-Cornered Snowflake: A New Year's Gift*
- T 9/27 pp. 25-71. Journal.
- Th 9/29 pp. 71 "Nothing of the sort can be said ..." —113. Journal.

Weekend

- M 10/3 The Great Snowflake Project—poem & craft
- T 10/4 The Great Snowflake Project—poem & craft
- W 10/5 GIRLS DAY
- Th 10/6 **The Great Snowflake Project is due.** Introduction to John Dalton:
<http://debbiejlee.com/ageofwonder/greenway.pdf> and
<http://freevideolectures.com/Course/2384/Freshman-Organic-Chemistry/20>

- M 10/10 **ADMISSION OPEN HOUSE.** *The Girl in the Golden Atom.* Question: what is science fiction? Begin the novel.
- T 10/11 Discuss chapters 1-7. Journal.
- W 10/12 Discuss chapters 8-12. Journal.
- Th 10/13 Discuss chapters 13-19. Journal.
- F 10/14 PARENTS WEEKEND/LONG WEEKEND.
- W 10/19 Senior College Application Day. Spend time in the library with your three English teachers.
- Th 10/20 Discuss chapters 20-27. Journal.

Weekend

- M 10/24 discuss chapters 28-33. Journal.
- T 10/25 Discuss chapters 34-37. Journal.
- Th 10/27 Discuss chapters 38-41. **Turn Journal in.**

Weekend

- M 10/31 **Atomic paper due.** Intro to Charles Darwin and *The Origin of the Species*.
Watch: <https://youtube.com/watch?v=ptV9sNezEvk>

The chapters that we shall read in this book include: chapter III the struggle for existence, chapter IV Natural Selection or the Survival of the Fittest, and chapter XI On the Geological Succession of Organic Beings. EVERYONE must write a journal entry for each of these 3 chapters.

- T 11/1 **chapter III presentation by Abbi and Joaquina**
- W 11/2 **chapter IV presentation by Elizabeth, Lily, and Luna.**
- Th 11/3 **chapter XI presentation by me.** Homework: Read *Alice's Adventures in Wonderland*.

Weekend

- M 11/7 **ADMISSION OPEN HOUSE.** Discuss *Alice in Wonderland* as a response to Darwin's theory of evolution and survival of the most fit. Journal.
- T 11/8 work on your paper.
- Th 11/10 work on your paper. **Turn in journal.**

Weekend

- M 11/14 **Paper due.** Begin Einstein. Watch the first 10 minutes of Bio of Einstein
<https://youtube.com/watch?v=NyK5SG9rwWI>
<https://m.youtube.com/watch?v=TgH9KXEO0YU> 5 minutes on the theory of relativity
<https://m.youtube.com/watch?v=VYZOxMowBsw> 10 minutes on " "

T 11/15 read and discuss Einstein's theory. Journal.

W 11/16 read and discuss Einstein's theory. Journal.

Th 11/17 read and discuss Einstein's theory. Journal.

Thanksgiving Week

T 11/29 *Einstein's Dreams*. Journal.

Th 12/1 *Einstein's Dreams*. Journal.

DECORATION WEEKEND/LESSONS&CAROLS/ILLUMINATION/OPEN HOUSE

M 12/5 Admission Open House. *Einstein's Dreams*. Journal.

T 12/6 *Einstein's Dreams*. Journal.

Th 12/8 *Einstein's Dreams*. Journal.

F 12/9 Last day of class; *Einstein's Dreams*. **Journal due**

12/15 Final Project Due by 12 noon