

## FYSM 1000-002: The Science of Science Fiction

Spring 2017

Mondays 7:00-9:30 pm, Duane D318

<http://learn.colorado.edu>

---

<b>Prof:</b> Dave Brain <a href="mailto:david.brain@colorado.edu">david.brain@colorado.edu</a> D133, 5-5606 Office Hours: Thursdays 4:30-6pm or by appointment	<b>LA:</b> Willow Reed <a href="mailto:willow.reed@colorado.edu">willow.reed@colorado.edu</a> D250 Office Hours: Fridays 1:30-3:00pm or by appointment
--	--

---

### Goals

- Learn to critically evaluate the science presented in popular movies
- Practice presenting and supporting arguments orally and in writing
- Engage in teamwork in a creative environment

### Content

This course will provide an overview of the science presented in science fiction stories, with a focus almost entirely on movies (many of which are derived from novels and short stories). We will first define science fiction as a genre and discuss its history and place in popular culture. Then we will critically assess 'movie science' – in some weeks discussing prevalent themes in science fiction and in others discussing individual movies. Emphasis will be on whether movies accurately portray the science and why they sometimes don't. Over the course of the semester you will work collaboratively to define and flesh out science fiction movie plots of your own, presenting them to an "expert panel" near the end of the semester. If appropriate we will devote one lecture to watching a current release in the theater.

Disclaimer: Movie plots will be revealed in this class!

### Course Materials

#### Movie access

You will need to watch ~10 movies on your own time for this class. You will have to pay to rent most of them, and I encourage you to watch together in small groups.

#### Reading

- *Lab Coats in Hollywood: Science, Scientists, and Cinema* by David A. Kirby (~\$20)
- Any additional readings will be supplied through D2L

### Course Evaluation

30%	Movie Pitch
20%	Mid-term Paper
20%	Essays
20%	Discussion Posts
10%	Participation

## Movie Pitch

Over the course of the semester you will work to develop an original scientifically plausible science fiction movie plot. Initially you will be asked to work alone to devise a story idea:

- 2% Each student will submit an initial story idea of in the first several weeks of the semester. The idea must contain “good” science, described in a paragraph.
- 3% You will work with a partner to submit a revised story idea several weeks later. It could be one of the original ideas described in more detail or an entirely new idea. The concept must be presented in no more than a page.

In the following week we will take the ~20 ideas and vote on the top 4. We will form groups of 5 students per idea and you will work to develop the ideas further, developing a movie pitch.

- 3% You will submit an outline of the final presentation several weeks before the end of the semester, along with roles and responsibilities for each group member.
- 2% You will submit draft slides for your final presentation in the week before the final week of classes.
- 20% You will deliver a final presentation to a panel of local experts on science fiction movies. The presentation will likely be given in Fiske Planetarium. The movie pitch must have 5 elements, each presented by a different student:
  - a plot summary and its relation to existing science fiction stories
  - an example of “good science”
  - an additional example of science being used in the movie
  - a “prediction” (like hoverboards from *Back to the Future*)
  - an explanation of why this movie would be profitable or should be created

## Mid-term Paper

Each student will watch a science fiction movie of their own choosing (one not discussed in detail in class) and write a ~5-8 page paper critiquing the science in the movie.

## Essays

Three class meetings will be devoted to single movies: *The Martian*, *Star Wars: A New Hope*, and a current release (we’ll go to the movie theater to see it one week instead of meeting in the classroom). After discussing these movies you will be asked to write a 1-2 page essay describing your reactions to the science in the movie and the movie as a whole.

## Discussion Posts

Many weeks you will be asked to submit reactions, ideas, or questions to a discussion board on D2L. These posts can be brief, but should fully address each prompt. Your posts must be submitted by 5pm on the day of the class meeting.

## Participation

Participation is required if the class is to be successful, and you will be evaluated on the effectiveness (not necessarily the quantity) of your contributions to the class discussion.

## Lectures and Assignments

Lecture	Reading / Movie Due	D2L Post	Essays / Project
<b>January 23</b> Science Fiction	N/A	No	Intro to project and essays
<b>January 30</b> <i>The Martian</i>	View: <i>The Martian</i> Read: Kirby Chapter 1	Yes	
<b>February 6</b> Other Worlds	View: <i>Choice</i> Read: Kirby Chapter 2	Yes	Essay 1 due
<b>February 13</b> Aliens / Contact	View: <i>Choice</i> Read: Kirby Chapter 3	Yes	Movie plot idea (1/student)
<b>February 20</b> <i>Star Wars</i>	View: <i>Star Wars Episode IV: A New Hope</i> Read: Kirby Chapter 4	Yes	
<b>February 27</b> Storytelling	View: <i>Bladerunner</i> Read: Kirby Chapter 5	Yes	Essay 2 Due
<b>March 6</b> Robots / AI	View: <i>Choice</i> Read: Kirby Chapter 6	Yes	
<b>March 13</b> Natural Catastrophes	View: <i>Choice</i> Read: Kirby Chapter 7	Yes	Revised plot due (1/pair) Pick final groups
<b>March 20</b> Time & Space Travel	View: <i>Optional</i> Read: N/A	Yes	Midterm Paper Due
<b>March 27</b>	-----SPRING-----	---BREAK--	-----
<b>April 3</b> Genetics	View: <i>Optional</i> Read: Kirby Chapter 8	Yes	
<b>April 10</b> New Release!	View: N/A Read: N/A	No	Outline Due
<b>April 17</b> Prediction	View: <i>Choice</i> Read: Kirby Chapter 9	Yes	Essay 3 Due
<b>April 24</b> Universe and Reality	View: N/A Read: Kirby Chapter 10	No	Draft Slides
<b>May 1</b> Project Hollywood	View: N/A Read: N/A	No	Presentations!!

- “View: *Choice*” indicates students can select from a list which movie to watch before class.
- Instructions for weekly posts will be provided on D2L and/or in class.
- The lecture topic for April 24 may be switched with the lecture topic for another week.

What follows is “Grumpy Professor” and University legalese. It is important to read and be familiar with these statements, and I will abide by them. But it is also worth noting that it can all be boiled down to the following statement: **I will treat you with respect and as a unique human being, and hope that you do the same for each other and for me.**

**Honor Code:** All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the [academic integrity policy](#) of the institution. Violations of the policy may include: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access, clicker fraud, resubmission, and aiding academic dishonesty. All incidents of academic misconduct will be reported to the Honor Code Council ([honor@colorado.edu](mailto:honor@colorado.edu); 303-735-2273). Students who are found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code Council as well as academic sanctions from the faculty member. Additional information regarding the academic integrity policy can be found at [honorcode.colorado.edu](http://honorcode.colorado.edu).

**Learning Environment:** Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, color, culture, religion, creed, politics, veteran’s status, sexual orientation, gender, gender identity and gender expression, age, disability, and nationalities. Class rosters are provided to the instructor with the student’s legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. For more information, see the policies on [classroom behavior](#) and [the student code](#).

**Discrimination and Harassment:** The University of Colorado Boulder (CU Boulder) is committed to maintaining a positive learning, working, and living environment. CU Boulder will not tolerate acts of sexual misconduct, discrimination, harassment or related retaliation against or by any employee or student. CU’s Sexual Misconduct Policy prohibits sexual assault, sexual exploitation, sexual harassment, intimate partner abuse (dating or domestic violence), stalking or related retaliation. CU Boulder’s Discrimination and Harassment Policy prohibits discrimination, harassment or related retaliation based on race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. Individuals who believe they have been subject to misconduct under either policy should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127. Information about the OIEC, the above referenced policies, and the campus resources available to assist individuals regarding sexual misconduct, discrimination, harassment or related retaliation can be found at the [OIEC website](#).

**Disability Accommodations:** If you qualify for accommodations because of a disability, please submit to me a letter from Disability Services in a timely manner (for exam accommodations provide your letter at least one week prior to the exam) so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities. Contact Disability Services at 303-492-8671 or by e-mail at [dsinfo@colorado.edu](mailto:dsinfo@colorado.edu). If you have a temporary medical condition or injury, see [Temporary Injuries](#) guidelines under the Quick Links at the [Disability Services website](#) and discuss your needs with me.

**Religious Observances:** Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. **In this class, you must contact me within the first two weeks of the semester to make alternate arrangements.** See the [campus policy regarding religious observances](#) for full details.

Have a great semester!

A handwritten signature in black ink, appearing to be 'A. Aronson', written in a cursive style.