Course Overview
This class will explore the strange and sometimes estranging relations of science, technology, and culture as they are expressed in different kinds of writing about nanotechnology. In the first unit we will use key concepts drawn from science fiction studies to understand how industrial cultures have represented their hopes and fears about small-scale engineering in fiction for 300 years. In the second unit, we will apply the acid tools of science fiction studies to key works from the field of nanotechnology as it has developed over the past 50 years. This will enable us to understand the narrative choices scientists and politicians make as they work to establish nanotechnology as an important discipline whose payoffs are still largely in the future. You will demonstrate your knowledge of small-scale engineering across culture with a final project or series of projects that we, as a class, will decide upon midway through the semester.

Required Texts to Purchase (available at Engineer’s Bookstore)

Required Readings to Download from T-Square
As your schedule notes, we will read a number of essays and short stories this semester. I will post all of these materials, plus all assignments, to T-Square.

Assignments and Grading: You will write four short analytic papers and complete one final project for this class. Instructions for all assignments will be given at appropriate times in the semester. You will have ample opportunity to discuss all assignments with me before they are due; thus, ALL GRADES FOR THIS COURSE ARE FINAL—I will not listen to any arguments that your grade should be improved after the fact. Please note that failure to complete any major component of the course will result in failure of the course as a whole. If you are having difficulties meeting class requirements, talk to me immediately—again, I will not listen to arguments after the fact.

Here are the grade percentages for each major component of this class:
• Participation 10%
• Response Papers (4@15% each) 60%
• Final Projects 30%

Participation: This is a mixed lecture/discussion class. Generally speaking, I will lecture at the beginning of a new unit and then on subsequent days in that unit we will talk together about how we might apply the class concepts we learn in lecture to the assigned texts for that unit.

This means you must show up to class on time on a regular basis. I will allow you three absences to do with as you please, but you will need to use them wisely: beginning with your fourth absence, your overall final grade will be lowered by 50 points for each absence. (For example, a 920 (A) would become an 870 (B) if you were absent four times.) If you miss six or more classes,
You have the right to fail you in the course as a whole. If you miss a class for any reason, it is your responsibility to find out what you missed before the next class meeting.

You participation grade is based on being a good citizen in class. This includes:
- Doing all readings and assignments in a timely fashion
- Bringing all readings and assignments to class when we are scheduled to discuss them
- Actively participating in class discussions (as both a speaker and a listener)
- Actively participating in all group activities (workshops, lab trips, etc.)

Your participation grade will be negatively affected by disruptive behavior including:
- Failure to do the readings
- Failure to be courteous to others when talking in class
- Disrupting class in nonverbal ways (e.g.: habitual tardiness, doing homework, poking at a media device or sleeping during class)

Please note that I don’t expect us to experience chronic participation problems but that if they do arise, I also reserve to the right to institute pop quizzes and similarly annoying tasks.

**Students with Disabilities** should self-report to the Access Disabled Assistance Program for Tech Students (ADAPTS) at:
- Smithgall Student Services Building, Suite 210
- 404-894-2563 (V)
- 404-894-1664 (TDD)
- adaptsinfo@gatech.edu

**Scholastic Dishonesty and Academic Misconduct:** All of the work you submit for this course must be your own. If I suspect academic misconduct, I will submit your name to the Dean of Students, who will then take the appropriate disciplinary action. The Georgia Tech honor code (at [www.honor.gatech.edu/plugins/content/index.php?id=9](http://www.honor.gatech.edu/plugins/content/index.php?id=9)) defines academic misconduct as:
- Possessing, using, or exchanging improperly acquired written or verbal information in the preparation of any assignment included in an academic course;
- Unauthorized collaboration with a student in the commission of academic requirements;
- False claims of performance or work that has been submitted by the claimant;
- Alteration or insertion of any academic grade so as to obtain unearned academic credit;
- Deliberate falsification of a written or verbal statement of fact to a member of the faculty so as to obtain unearned academic credit;
- Forgery, alteration, or misuse of any document relating to the academic status of a student.

**Miscellaneous:** Ultimately this is your class, so if you have any suggestions for readings, films, or activities that you think might supplement our studies—or if you have any ideas about how to better organize our existing time and activities—please feel free to share them with me. Every semester I try to shape the course schedule in accordance with the needs of that particular class, so I really do value your input.
Unit 1: Representing Nanotechnology in Science Fiction
T 1/31  •  **Class begins at 12:30 today!**
   •  Discuss Fitz-James O’Brien, “The Diamond Lens” and James Blish, “Surface Tension” (T-Square)
Th 2/2  •  Lecture on nanotechnoscience and modern SF (1960-present).
   •  Discuss Jeff Prucher, “biopunk,” “singularity,” and “posthuman” (*BNW*)
   •  Discuss Kathy Goonan, “Sunflowers” and Paul Di Filippo, “Distributed Mind” (T-Square)
T 2/7  •  **Class begins at 12:30 today!**
   •  Skype discussion of nanotechnology in science fiction with Goonan and Di Filippo
Th 2/9  •  **Class begins at 12:30 today!**
   •  Finish Goonan and Di Filippo

T 2/14  •  Lecture on nano imagery across SF media
   •  Discuss Jeff Prucher, “space opera,” “bug-eyed monster,” “nanite,” and “group mind” (*BNW*)
   •  In-class screening: *MST3K*, nanite segment from “The Leech Woman”
Th 2/16  •  In-class film screening: *Fantastic Voyage* or *ST:TNG*: “Evolution”

Unit 2: Representing Nanotechnology in Science
T 2/21  •  **Analysis #2 due at the beginning of class**
   •  Lecture on nanotechnology in science
   •  Discuss Eric Drexler, *Engines of Creation* (excerpts TBA)
Th 2/23  •  Tour the GTRI Nano Labs. Tour guide: Dr. Jud Ready ([http://www.nano.gatech.edu/faculty-staff/profile.php?id=139](http://www.nano.gatech.edu/faculty-staff/profile.php?id=139))
   •  NB: We will meet outside the Baker Building (939 Dalney Street) at the beginning of our regular class hour. Also, be sure to bring your Buzzcard: this is a secure lab and you will not be allowed to enter without GT ID!!!
T 2/28  •  Finish Eric Drexler, *Engines of Creation* (excerpts TBA)
Th 3/1  •  **No class: professor out of town**

T 3/6  •  In-class screening: “When Things Get Small” ([http://www.ucsd.tv/gets](http://www.ucsd.tv/getsmall)).
Th 3/8  •  Class activity TBD

Unit 3: Representing Nanotechnology in Public Policy
T 3/13  •  **Analysis #3 due at the beginning of class**
   •  Lecture on representing nanotechnology in public policy
   •  Discuss Mihail Roco and William Sims Bainbridge, *Converging*
Technologies for Improving Human Performance (front matter and “Overview”; T-Square).

Th 3/15  •  Finish Roco and Bainbridge

T  3/20  •  No Class: Spring Break
Th 3/22  •  No Class: Spring Break

T  3/27  •  Discuss Jim Saxon, “Nanotechnology: Coming Sooner Than You Think” (T-Square)
Th 3/29  •  In-class discussion of NST and public policy with Prof. Richard Barke

Unit 4: Final Projects
T  4/3  •  Analysis #4 due at the beginning of class
       •  Final Projects TBA
Th 4/5  •  Final Projects TBA

T  4/10  •  Final Projects TBA
Th 4/12  •  Final Projects TBA

T  4/17  •  Final Projects TBA
Th 4/19  •  Final Projects TBA

T  4/24  •  Final Projects TBA
Th 4/26  •  Final Projects TBA

Th  5/2  •  All final projects due to professor by email by 2:30 pm