



## SYLLABUS AND CALENDAR

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CRN (Credit) Level 30126 (16) Fr; 30127 (16) So; 30128 (16) So – Sr  
Tuesday and Thursday classes 1:00 - 5:30 pm in SEM II, **D1105**  
Innovation website: <http://blogs.evergreen.edu/innovation/>

### Description

What motivates and facilitates creativity, discovery, and invention, in arts and in sciences? To what extent do scientists and artists work within traditional practices or bodies of knowledge, and how do they move beyond and expand standard models or forms to achieve true innovation?

What are the roles of community, genius, luck, plain hard work, and being in the right place in the right time in history? Are certain resources prerequisite, or is creativity truly democratic? Can any patterns be discerned in revolutions in science? In art? What qualifies as a revolution or innovation? We will explore questions such as these by reading (and sometimes staging) plays, fiction, philosophy, and nonfiction about arts and sciences. We will learn about the advent and development of the moving image. Students may, individually or in teams, explore and present special cases of particular interest to them, as research projects. Students will write short, thoughtful essays and responses to peers' essays. We will learn some classical and modern physics (from dynamics to quantum mechanics and/or cosmology) using mostly conceptual methods.

Required books available at the Evergreen bookstore: (be sure to use ISBNs listed)

- *Titus Andronicus* (Shakespeare - ISBN 9781903436059)
- *Waiting for Godot* (Samuel Beckett - 9780802130341 or available on Kindle)
- *Sunday in the Park with George* (Stephen Sondheim - 9781557830685 or Kindle)
- *Copenhagen* (Michael Frayn - 041377371x or Kindle)
- *Galileo* (Bertolt Brecht - 9780802130594)
- *Angels in America*, Parts 1 and 2 (Tony Kushner - 9781559362313)
- *The Great Equations* (Robert Crease - 9780393337938)
- *Structure of Scientific Revolutions* (Thomas Kuhn - 9780226458083)
- *The Ten Most Beautiful Experiments* (George Johnson - 9781400034239 or Kindle)
- *Third Industrial Revolution* (Jeremy Rifkin - 9780230115217 or Kindle)

In this partly online program, students will be required to meet in groups outside of class, to participate in some online seminars, and to use other Internet-based learning and communication tools.

**INNOVATION** ... *Spring 2012 Calendar draft*

**PART I – Classical Innovations**

**Week 1:** April 3 & 5

Tuesday: Introduction and Program overview.

Read Finkel selection, discuss learning community and peer responses.  
Shakespeare text workshop: imagery and action

Thursday:

Read *Titus Andronicus*—Intro excerpts and Acts 1 - 3 (Language/Scansion, classical inspiration in the Renaissance)

Moodle workshop in Computer Center. Choose your teammates, post introductions.

**Week 2:** April 10 & 12

Tuesday: Read science stories (preparing for Kuhn)

Ch.4 (Lavoisier) and Ch.8 (Michelson) in *Beautiful Experiments*

Ch.6 (Maxwell's Eqns.), Ch.7 ( $E=mc^2$ ) in *Great Equations*

Read *Titus Andronicus*—Acts 4 - 5

Screen Taymor's *Titus* stage version

Thursday: Start Kuhn (Preface, Intro, Ch.I – II). Keep science stories in mind.

Shakespeare and Taymor (groups at home screen *Titus* film)

**Week 3:** April 17 & 19

Tuesday: Simon Singh. *Big Bang*, Ch.I reading & workshop

Read "The Book of Nature" (pp.65-68) in *Great Equations*

Read Brecht's *Galileo*: Introduction and play

Brecht and Galileo: breaking with Aristotle

Thursday: Brecht. *Galileo*: Dialectics and social drama

Read Simon Singh, *Big Bang* Ch.II

**PART II: Interactions in Innovations**

**Week 4:** April 24 & 26

Tuesday: Read: *Sunday in the Park with George*, by Sondheim and Lapine

Read Ch.3 (Newton) in *Beautiful Experiments*. Workshop on light.

Thursday: Kuhn, Ch.III-V (Normal Science, Priority of Paradigms)

Music and theatre history/practice

Read: "Seurat and Pointillism" handout (Chuck Close workshop)

Read: "The Art of Stephen Sondheim" chapter

Groups at home screen *Sunday in the Park with George*

**Weekend:** Students email peer evals to faculty. Midterm quiz / survey online?

**Week 5:** May 1 and 3

Tuesday: Mid-quarter conferences with teams?

Thursday: Complete *Sunday in the Park* (screen excerpts from stage production)

Read Gamow handout: Prefaces, Intro, Ch.1-2 (Planck's quanta, Bohr's orbits)

Read: *Copenhagen* (including Frayn post-script and other edition notes)

**Week 6:** May 8 and 10

Tuesday: Read: *Copenhagen* (including Frayn post-script and other writings)  
Staging and theatrical metaphors in science  
Read *Great Equations* Ch. 9 & 10 (Quantum Mechanics) thru p.265

Thursday: Read Kuhn, Ch.VI-VIII (Anomalies & Crises)

### **PART III: Innovations as Response to Crisis**

**Week 7:** May 15 and 17

Tuesday: Read: *Waiting for Godot* and “Brecht on Chaplin,”  
Read: selections on Climate Change

Thursday: Continue *Waiting for Godot*  
Read: Workshop on Climate change  
Workshop on comics/sequential art

**Week 8:** May 22 and 24

Tuesday: *Angels in America* (Part 1)  
Read *Third Industrial Revolution*, first half (selected chapters)

Thursday:  
Cornell Box presentations  
Groups at home screen *Angels in America*, Pt. 1  
Read Kuhn Ch.IX-X (Nature & Necessity of Revolutions, Changes of world view)

**Week 9:** May 29 and 31

Tuesday: Read: *Angels in America* (Part 2) / Brecht and Kushner  
Finish *Third Industrial Revolution* (selected chapters)  
Read: Kushner, “Reflections on *Angels*”  
*Angels* workshop

Thursday:  
Kuhn Ch.XII-XIII (Resolution & Progress through Revolutions) and **Postscript**  
Adapting *Angels* for the screen  
Weekend: Final quiz / survey online?  
Peer evaluations due to faculty by email by Saturday

**Week 10:** June 5-7

Tuesday: Student presentations and potluck  
Summative seminar /self-evaluation workshop

Wednesday & Thursday: Final evaluation conferences.

### **Requirements and Assignment Notes**

**Our readings** will include a diverse range of materials from science and the arts, from texts and articles to plays. Students are expected to do some independent reading and research as well. Each week we will assign significant passages from the readings, which will coincide with seminars and other assignments, in class and online.

**Seminars:** It is expected that you will have thoroughly and thoughtfully read and/or viewed the selections for seminar. You should be prepared to identify key themes supported by specific passages in the reading/viewing selections. Topics will come from central themes and texts. Students will choose peer study groups (triads) for preparation and participation in seminars and other activities.

**Portfolio: a compilation** of work completed during the quarter. You will turn in your portfolio at the end of the quarter and it will be returned to you. The portfolio (with annotated sections) will contain all your written work and reflection on your learning.

**Possible Credit Equivalency:** 8 cr in Performance Studies / 8 cr in Science Studies.

**Access Services:** If you are a student with a *documented disability* that requires arrangements, technology or expense to ensure full access to this program, please contact Meredith Inocencio in the Access Services Office (Library 2153 or 360-867-6348 or [inocenc@evergreen.edu](mailto:inocenc@evergreen.edu); website: <http://www.evergreen.edu/access/>). In order to make accommodations, your program faculty must be informed no later than the second week of the quarter *by the student and in writing from Access Services*.

**Likely Online Seminar week assignments (Weeks 3, 5, 7):**

- By Monday midnight, each student will write a substantial initial post to the seminar topic. Your initial post should reflect critical thinking about the reading assigned. Your initial post must be supported by specific citations from the texts.
- By Wednesday midnight, each student will post at least one response to every other seminar member's initial post (in your group of 6-8), again using the assigned readings to support your critical thinking.
- By Friday midnight, each student is required to post a thoughtful reflection on the dialogue inspired by your initial posting.
- By Saturday midnight, you will write a one-page synthesis of your learning from the reading and online seminar dialogues. At the end of your synthesis, you will propose an original (that is, different) seminar thesis, topic, or question supported by an excerpt or quote from the reading.

**Entries posted after the midnight deadlines will not receive credit.**

**The goal of online seminars** is to develop critical understanding of the assigned topics and readings, and to deepen community learning with each response to your postings. Picky comments on the technicalities of writing are generally not helpful; nor are simple replies like "that's a really cool idea." Since form and content are inseparable in writing, it is appropriate to comment on aspects of the writing that impact your understanding. All postings will require specific citations from the assigned readings to substantiate your critical comments.

**Other assignments** may include: group screenings at home, creation of a Cornell box, study questions, reflective essays, exams or surveys, workshops, etc.