UF UNIVERSITY of FLORIDA

Department of Chemistry

PO Box 117200
Gainesville, FL 32611-7200

August 31, 2010

To: General Education Council

From: Kathryn R. Williams, UFTeach Steering Committee
Department of Chemistry, PO Box 117200

Kathryn R. Williams

Re: Request for Gordon Rule E6 Designation for HPS 3003 (formerly HIS 3931)

The Steering Committee for the UFTeach minor in Science or Mathematics Education requests Gordon Rule Writing (E6) status for HPS 3003, Perspectives on Science and Mathematics, in addition to the GE-H designation granted a few weeks ago. The writing components of this course are clearly specified in the attached syllabus (c.f., shaded areas of pages 2 and 3) and the Guidelines for Short Paper and Long Paper assignments. (Note: The syllabus contains the course's previous course number, HIS 3931.)

Perspectives on Science and Mathematics is required of all students in the UFTeach minor. Because of the large number of credits needed for the minor (25 for science; 28 for mathematics), it will be very helpful for students to accomplish multiple educational goals in UFTeach courses. The Steering Committee is very pleased that the GE-H designation was granted for Perspectives. We now hope that students will also be able to earn GR writing credit.

Thank you for considering this request.

Application for General Education and/or Gordon Rule Writing Certification

I. A.) Course Number and Title: HPS 3003 Perspectives on Science & Mathematics

B.) Credit Hours: 3

C.) Prerequisites: UF Teach Step I (EDG 4930)

D.) Current Classification

1. General Education Code: ☐ B ☐ C ☐ D ☑ H ☐ M ☐ N ☐ P ☐ S ☐ None
2. Gordon Rule (Writing): ☐ E2 ☐ E4 ☐ E6 ☑ None
3. Gordon Rule (Math): ☐ M ☑ None

Requests:

II. General Education

A.) Requested Classification: ☐ B ☐ C ☐ D ☐ H ☐ M ☐ N ☐ P ☐ S

B.) Effective Date: ☐ Fall ☐ Spring ☐ Summer _____ (year)

Or

☐ 1-time Approval _____ (year)

C.) General Education purpose and learning outcomes for the course? [Detailed attached response requested.]

III. Gordon Rule

A.) Requested Classification for course ☐ E2 ☐ E4 ☑ E6

B.) Writing Requirements:

1.) Number of papers, essays, etc. with word count specified. > Please see syllabus & guidelines

2.) Due Dates? Returned with feedback dates?

3.) What type of feedback will be provided the student (in reference to writing skill)?

✓ Grade ✓ Corrections ✓ Drafts _____ Other

4.) Assessment

a.) Will the written work be evaluated for grammar, punctuation and proper usage of standard written English? Yes

b.) Will written work be evaluated for an effectiveness, organization, clarity and coherence of writing? Yes
c.) Will a published rubric be used? No

IV. Syllabus

Courses that offer students General Education and/or Gordon Rule credit must provide clear and explicit information for the students about the classification and requirements.

A.) For courses with a General Education classification, the syllabus should include:

- ☐ Statement of the General Education Purpose of the Course with attention to the General Education Classification requested
- ☐ List of assigned General Education Student Learning Outcomes
- ☐ List of any other relevant Student Learning Outcomes
- ☐ List of required and optional texts
- ☐ Weekly course schedule with sufficient detail (e.g. topics, assigned readings, other assignments, due dates)

B.) For courses with Gordon Rule (writing) classification, the syllabus should include:

- ☐ A description/list of Gordon Rule expectations for students (word count, page lengths and deadlines for assignments).
- ☐ A statement to the effect that students written assignments will be evaluated with respect to grammar, punctuation, and usage of standard written English, as well as clarity, coherence, and organization. Reference rubric.
- ☐ A statement indicating that students will receive feedback on written assignments prior to the last class meeting.
- ☐ Assessment note to include basis for grading (rubric) and a statement identifying the two components of the grading, letter grade for course and approved completion of the writing portion of the course.

V. Submission and Approvals

A.) Submitted by (Signature of Instructor): _____
Date 8/3/10

B.) Department Approval: _____

C.) College Approval: _____

D.) Committee Action: ☑ Approved ☐ Denied ☐ Tabled Date _____

History 3931 Section 3862

Perspectives on Science and Mathematics
FALL 2010

Perspectives Assignments

Short Paper Guidelines and Schedule

Throughout the semester I will be posting questions or topics that relate to **both** that weeks reading and class discussion. You can expect these to be posted before noon on Friday **the week before they are due**. For example for a paper due on September 3rd, the question or topic will be posted on the *Assignments* section of the class's e-Learning website by noon on August 27th. The question or topic will refer mainly to the readings and class during the week ending of September 3rd. This is so you can begin to consider the question **while** you are reading that week's assignment. You may also choose to discuss it with your classmates face-to-face or through the Discussion Section of the e-Learning website.

The essay should be brief, to the point, and directly address the topic or question being discussed. At some point in the semester you will be asked to respond to a secondary source, analyze a primary source, compare and contrast different sources, synthesize lecture, discussion, and reading to support an opinion, adapt what you are learning in class for your own purposes, and even predict the future. I suggest that you get to know chapter 5 of *A Student's Guide to History* by Jules R. Benjamin. It contains a lot of good information and instruction on how to write specific types of written assignments. I will try to point out which sections apply to each assignment, but ultimately finding help will be up to you.

The paper should be between 2 and 3 pages, double-spaced, in length, or about 500 - 750 words.

Each paper will be worth ten points. A paper will lose a point for every hour it is late. I will drop your two lowest scores before totaling your grades at the end of the semester.

Grades will be based on the following:

Argument
Clarity of prose
Structure
Grammar, syntax, spelling, and style
Improvement over previous effort

History 3931 Section 3862

Perspectives on Science and Mathematics
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Long Paper Guidelines and Schedule

The long paper in this course is meant as an exercise for you to pull together themes and facts from the class and combine them with some further research into a particular subject of interest to you in the history of science or mathematics. It should be about 3,500 words long (with plus twenty, minus ten percent leeway).

The paper is not envisaged as a contribution to the scholarly literature in history of science. Instead, it's an exercise something like a 5E: this course is the engagement; your research will be the exploration; and writing the paper serves as the explanation (as you sort out the information and interpretation for yourself), the extension/ elaboration (because writing it out is the most efficient way to make sure that you understand a subject clearly and completely), and the evaluation (for me, but also for you – Do I really understand this?) To give you an idea of scale, a 3,500 word paper covers about as much material as a single lecture for this course.

As with the 5E, your research for the paper *must* contain print sources in the history of science and mathematics (books and/or journal articles; these may be accessed online), and *may not* contain history of science drawn from science textbooks or the equivalent (usually biased and/or wrong). You must be prepared to evaluate and explain the provenance and reliability of each of your sources as discussed in *A Student's Guide To* History by Jules Benjamin, one of your assigned texts. You may use any widely recognized system of scholarly citation (e.g. MLA, APA, Chicago); **you must state at the top of your bibliography which system you are using.**

We will work on the paper in stages:

- By **September 30th**, you must see me in office hours or by appointment with a brief description of your subject and 3-4 primary and/or secondary sources you plan to use (you may well end up using more). You should be prepared to discuss why and how you have chosen these sources, how you intend to use them, and in what ways you consider them reliable.

- A written **prospectus** of your subject (about a 750 - 1000 words, or 3-4 pages, long), including an annotated bibliography consisting of an analysis of at least 6 sources, will be due in my inbox by noon on **October 22nd**. This will comprise **15% of your final paper grade**, which will be divided as follows:
  - **40%** Provide a clear introduction to your topic that includes an outline of the overall project, a clear strategy for research, an explanation of what you hope to find, and even a conjecture of what your findings or interpretation might be. This is a hypothetical statement, but it should be thought out and based upon existing knowledge. 40%
  - **40%** An annotated bibliography that contains at least 6 sources with the following information
    - Enough information so that it can be found by someone else (bibliographic reference or stable URL)
    - Document how you found each source.
    - Describe each sources provenance (e.g., Who wrote it? Who are they? Who published it? Who put the source or the reference online?)
    - Assess each source's probable reliability (e.g., What biases does/might it have? What about its provenance vouches for its reliability? How up-to-date is it? For what purpose(s) might it be useful?)
  - **20%** Grammar, Syntax, Spelling and Style

- The first draft of the paper will be due in my inbox by noon on **November 24th.** This will be the primary focus of the assignment. The paper should be as complete as you can make it, both in terms of mechanics (spelling, grammar, syntax) and of structure and argument. This will be thoroughly edited and returned to you by **November 30th**. You will receive a grade at this time.

- You will probably have to revise your paper thoroughly, even to the extent of more or less completely rewriting it. A final version will be **due by noon on December 10th**. Your grade may subsequently be revised based on the thoroughness and quality of your revisions. **If you did not receive a grade of 100 points for the first draft, and you do not revise it for the final version, you will lose 10 points from the grade assigned; that is, if you received an 87 on the draft, your final grade will be a 77, plus whatever you received for the Prospectus.**

Grading will be based on the thoroughness and quality of your research, on the sophistication of your analysis, on the coherence of the paper's structure, and on its style and mechanics (spelling, grammar, and syntax), as follows :

Argument	20%
Structure	20%
Grammar, syntax, spelling, and style	20%
Annotated bibliography	40%

- Grades will be dropped 10 points for each day, or portion of a day, late for each portion of the assignment. No portion of the assignment will be accepted more than 5 days late.
- Papers below the minimum length will be penalized ten points for every 300 words they are short.

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Norman Hall 2327
Tuesday: Period 5, 11:45 am - 12:35 pm
Thursday: 5-6, 11:45 am - 1:40 pm
Final Exam: 16D
Thursday, December 16
3:00 - 5:00 pm

Matthew A. White

Office: Norman G524 C
Office hours: Tuesday and Thursday 2-4 pm
or by appointment
adolphus@ufl.edu

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This course will explore different ways that scientific investigators have explained the workings of the natural world. This course has four interlocking goals: to give you an overview of the history of science and mathematics for your general education and to broaden your comprehension of the subjects you will be teaching; to enable you to put this broader history and context to work in science and mathematics pedagogy; to improve your writing skills to competence or mastery; and likewise to improve your research and information analysis skills to competence or mastery. **This course is designed for students in the UFTeach Program.**

Humanities General Education Classification

In addition to satisfying a requirement for the UFTeach minor, this course provides 3 credits of humanities general education by introducing you to the ways that the historian/philosopher looks at science and mathematics. Discoveries in science and mathematics have not come strictly from the laboratory or desk of the experimentalist or theoretician, but rather they have originated in identifiable historical contexts. Likewise, these discoveries have to a great extent affected the history and philosophy of their times. This course will teach you to think about science and mathematics in these terms.

Student Learning Outcomes

Students will learn, practice, and appreciate the ways that historians/philosophers interpret the past and present work of scientists and mathematicians. By the end of the semester, students will:

- Acquire new ways to think about math and science by seeking answers to questions such as: Where did science, math, and technology come from? How have they become so important in today's world? What kinds of questions have scientists and mathematicians tried to answer and why?
- Learn methods of historical research, in particular analysis of the origin and reliability of print and internet sources.
- Read selected texts critically and participate in meaning classroom discussions of both the content of the readings and their historical relevance.
- Hone your professional writing skills, especially the presentation of coherent, reasoned arguments that can be understood and evaluated by others.
- Prepare a 5E lesson plan incorporating some aspect of the history of science or mathematics, and practice teaching the material to your classmates.

Basic Structure of Class

This class meets twice a week. On Tuesday for 50 minutes and on Thursdays for two hours. Most Tuesdays will be reserved for discussing ideas and concepts pertinent to that week's readings and lectures. As the semester progresses, Tuesdays will be used for lesson plan demonstrations. Thursdays will be mostly lecture and discussion of important historic periods, ideas and people. It will become necessary later in the semester to use some Thursdays for lesson plan demonstrations.

This is an upper-division history course. The assigned readings vary in length, and are from primary and secondary texts. The first half of the semester will have much more reading than the second half. You will also be required to do additional research and reading for the paper and the 5E lesson plan; keep this in mind when budgeting your time for this class. The class will be conducted as a mixture of lecture and discussion; attendance and participation are therefore crucial.

Writing Assignments

As mentioned above this is an upper-division history course. An important part of any historical endeavor is to write clearly, concisely, and accurately based upon primary and secondary sources. For this class you will be writing between 5,000 and 7,000 words between one long paper and a series of shorter essays. A more robust description of each assignment can be found elsewhere on this syllabus and in Assignment Guides to be disseminated at a later date. For each paper you will be given ample opportunity to improve on your writing skills and apply criticisms and suggestions on your work. The longer paper will require a prospectus, a rough draft, and a final draft. The shorter papers will gain in complexity from week to week and you will be graded, at least in part, on how well you improve from paper to paper.

Attendance, Participation, and Preparation:

Students are expected to attend every class in a timely manner. Late arrivals are unacceptable and disruptive. Excessive lateness to class may result in a 5 point deduction from a student's cumulative Preparation and Participation component of the course grade. If your standing commitments outside of class will result in excessive lateness or absence, you should see me immediately. A sign in sheet will be passed around at the beginning of each class. It will be your responsibility to sign this sheet. It will be the official record of attendance. Everyone is allowed two missed classes before it negatively effects your grade, but it is **always** the student's responsibility to make up any missed information and to keep up on the progress of the class.

Class preparation and participation is critical to success in a course in which discussion is such a large portion of class time. It enriches the student's experience and it is one of the best methods for the student to assess informally how well he or she is mastering the course materials. Each student is especially encouraged to ask questions of the instructor regarding any matter pertinent to the class, assignments, or readings. Class preparation and participation will count as a percentage of the student's final course grade as indicated below. Please note that mere participation is not the same as true, quality participation. For full consideration, evidence will need to be shown that students read the assigned works.

Allowances will be made for extended illnesses or other excused absences, with proper documentation,

Class Preparation and Participation will be graded using the following methods

- **Attendance** as measured as a simple percentage of classes attended divided by the total number of classes (minus 2)
- **Substantive participation** in class discussion and activities
- **Substantive** and **constructive** comments and critiques on your classmate's 5E lesson plans.
- **Substantive participation** in online discussions on pertinent. (Excessive substantial online discussion, especially beginning or leading discussions of topics of interest to the class, can help mitigate a missed class)

Your grade in this area will be effected negatively through excessive lateness, evidence of a lack of preparation, lack of substantive participation, and being repeatedly disruptive in class. Disrupting class can include, but need not be limited, to cell phone ringing and usage, non-class related talking, loud and /or odiferous eating and drinking, distracting web surfing on laptops, or any other activity that distracts me or your classmates from our tasks.

Assignments and Grading
More complete descriptions of each assignment will be available on the class's eLearning website and will be discussed in class. Here are short descriptions of each.

1. Short writing assignments: On most weeks there will be a 2-3 page, or 500 - 750 word, writing assignment **due by noon Friday of the week to which it is assigned. Papers will be handed in electronically by email or dropped at eLearning website.** Each paper will answer a simple question or address a theme pertaining to that week's readings and class discussion and lecture. The question or theme will be disseminated no later than noon the previous Thursday in class.

Each paper will be worth ten points total. The paper will be dropped one point for every hour it is late. I will drop the two lowest grades before averaging your scores. The grades for each paper will be based on argument and content, clarity of prose, structure, grammar, syntax, spelling, and style and improvements over previous efforts.

2. Long paper: You will be expected to complete a historical and analytical paper (approximately 3,500 words) on some aspect of the history of science and mathematics. You will be expected to turn in a prospectus, first draft, and final draft. The due dates are part of the schedule below. Grades will be dropped 10 points for each day late for each portion of the assignment. No portion of the assignment will be accepted more than 5 days late.

3. 5E Lesson Plan: In teams of two you will write and demonstrate one 5E Lesson Plan that incorporates significant history of science and/or mathematics content to:

a. Integrate a historical perspective into a science, math, or technology lesson and/or

b. Be a history of science or history of math lesson that will either motivate science or math students to understand their subject better, or help to clarify the context or framework of a technique or theory.

Due dates vary based upon when your team is demonstrating your lesson.

4. Two exams, a mid-term and a final exam. There will be no make-up exams, so mark your calendars now. I may, in some instances with solid excuses and proper documentation, administer an exam **earlier** than the scheduled date at a time convenient to both me and you.

The grading breakdown is as follows:

Attendance, Participation, and Preparation	20%
Two comprehensive exams	*Total* 20%
Short writing assignments	*Total* 10%
Long paper	25%
Lesson plan and presentation	20%
Lesson plan feedback	5%

Accommodations

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing proper documentation. Once registered, students should present their accommodation letter to me supporting a request for accommodations. You are encouraged to to initiate these procedures as early as possible in the semester.

University policies on plagiarism and academic dishonesty will be enforced. You will be responsible for being familiar with the Student Rights and Responsibilities section of the UF Academic Honesty guidelines available at the Dean of Student's website at: http://www.dso.ufl.edu/studentguide/studentrights.php

Readings

The Following textbooks are required and weekly written assignments will be based upon readings in these books and the supplementary material. I would recommend purchasing your own copies, but I have placed copies of the Gregory and Hatton & Plouffe books on reserve in Library West. The Jules book is available in the Library Reference section on the 3rd Floor.

I. Benjamin, Jules R. A *Student's Guide to History*. 11th ed. Boston: Bedford/St. Martin's, 2010.

   A. Readings from this book will not be directly discussed in most classes. However, various writing assignments will reference specific sections of this book, and you will be expected to demonstrate familiarity of those sections in all assignments from that date forward.

II. Gregory, Frederick. *Natural Science in Western History*. 1st ed ed. Boston, MA: Houghton Mifflin Co, 2007.

   A. This is a basic textbook loaded with names, dates, accomplishments, ideas, experiments, and other facts and interpretations. It is very complete and well written. Read closely for ideas, facts, and arguments. Keeping up with this reading may prove difficult, but stick with it. Skim if you must, but make sure you are familiar with the ideas and people in each assigned section on the day it is assigned.

III. Hatton, John, and Paul B. Plouffe. *Science and Its Ways of Knowing*. Upper Saddle River, N.J.: Prentice Hall, 1997.

   A. This is an excellent anthology of scientists and other authors writing about science and math. It has some history, some philosophy, some ethics, and some wild conjectures. Read it carefully and pay attention to the discussion questions. One or two might show up on an exam.

IV. Supplemental Readings: These are the most important readings each week. They are largely primary sources and can be difficult at times due to historic syntax and outdated spelling conventions. These are the most important readings each week.

The following book is recommended. It is recommended not because there are no assigned readings from this book, but because it is available in so many other formats than traditional print. It is available as an e-Book through the UF Library and I will also post links to the appropriate chapters on the classes e-learning site.

•Darwin, Charles. *On the Origin of Species: A Facsimile of the First Edition*. Cambridge: Harvard University Press, 1964.*

* Any unabridged edition of *On the Origin of Species* will do, but discussion and potential exam questions will be drawn from this edition.

Students should be ready to discuss each reading on the day that it appears on the syllabus. It is also expected that information and insights from the readings will form the core of each week's writing assignments. All material from the readings can potentially be on the exams.

Using Sakai (e-Learning)

A good deal of the business of this class will be conducted via the e-Learning system Sakai. This is a new program, so there may be glitches. We will phase it in through the semester. It can be accessed at https://lss.at.ufl.edu/. You use your GatorLink log-in information. At your first opportunity, please attempt to log-in and familiarize yourself with the features. We will be using the following tools:

- **Syllabus:** This syllabus is already posted on the site. When I update the syllabus, I will change the online version only send out an announcement. New paper copies will not be handed out unless requested.
- **Announcements:** Announcements to the class, especially those pertaining to use of the e-Learning Site
- **Assignments:** I will post all of your written assignments here. This is where the short essay topics will be posted. You will also use this tool to hand in all assignments and I will return them the same way, with comments and grades. For the first couple of short essays, I want you to also email them to me, just in case this new system does not work out at first. Do not bring paper copies of your assignments to class. We will make other arrangements for your final 5E Lesson Plan packet. It will likely be too complicated to hand in electronically.
- **Calendar**: Deadlines and events in class will appear on the calendar.
- **Chat Room:** I will not be availing myself of the chat room feature for this course, though you are welcome to use it amongst yourselves.
- **Discussions:** I will regularly post discussion topics related to class. Some will pertain directly to specific assignments or classroom topics. You may start your own discussions on pertinent topics, current events, outside readings, or any other topic related to class. This section will be considered an extension of the classroom and will factor in to your Attendance, Participation, and Preparation grade. If you feel you are not participating enough in class, starting a substantive discussion here will certainly help in this regard.
- **Resources**: Here you will find all of the supplemental readings for the class as well as useful web addresses and other things needed for class.

Note that all discussion throughout the e-Learning site will be monitored and assessed. All standards of decorum, etiquette, collegiality, common sense, and professionalism will apply. If you wouldn't say it in a classroom, don't write it here.

The University of Florida offers a number of tutoring, counseling, and other assistance to students throughout the semester. If you need help in any area, please take advantage of these resources, as well as the staff and faculty in the UFTeach Offices. We are all here to help.

- Tutoring at the Teaching Center at www.teachingcenter.ufl.edu
- The Reading and Writing Center at www.at.ufl.edu/rwcenter
- University Advising Center at 392-1521
- Counseling Center at http://www.counsel.ufl.edu/
- Student Mental Health http://shcc.ufl.edu/smhs/

Tentative List of Topics and Readings

Course Orientation

Week One : August 24 & 26

- Tuesday
  - Introduction to Course
- Thursday
  - Historical Perspectives on Science and Math
  - Introduction to Writing a Research Paper and your writing assignments
  - Readings
    - How Not to Teach the History of Science by Douglas Allchin
    - Familiarize yourself with Jules Chapters 4 & 7

Week Two : August 31 - September 2

- Tuesday
  - Structure of Course
  - The Writing Assignments

Unit 1 Natural History

- Thursday
  - 5E Lesson Plan Assignment
  - The Renaissance and Exploration
    - Readings
      - Gregory, Chapter 4 (up to page 80) & 12
      - Frances Bacon's "Of Travel," from *The Essays or Counsels, Civil and Moral, of Francis Ld. Verulam Viscount St. Albans.*

Week Three : September 7 & 9

- Tuesday
  - Ordering and Organizing the Natural World
  - Readings
    - Gregory, Chapter 17
    - *Equinoctial Regions of America*, by Alexander Humboldt.
      - Introduction by Author and Chapter 1 only
- Thursday
  - Charles Darwin: Voyages and Theories
  - Readings
    - Gregory, Chapter 18
    - *Origin of Species*, Chapter 1-4

Week Four: September 14 &16

- Tuesday
  - Aftermath of *The Origin*
  - Readings
    - Gregory Chapter 19
    - Hatton and Plouffee, Part II, Introduction, Wynn, and Gould

Unit 2: Analysis

- Thursday
  - Copernicus and Galileo and Earthly and Celestial Motions
  - Reading
    - Hatton and Plouffe Part III, Introduction, Alvarez, & Fox Keller

- Gregory Chapter 4 (starting at page 80), 5, & 6
- Galileo, *Letter to the Grand Duchess Christina of Tuscany*

Week Five : September 21&23

- Tuesday
  - Newton and the Unification of Motions
  - Readings
    - Gregory, Chapters 8 & 9
    - Newton's *Rules of Reasoning*
- Thursday
  - Enlightenment Science: The *Encyclopédie*
  - Readings
    - Gregory, Chapters 14
    - Selections from Jean d'Alembert's *"Preliminary Discourse" to the Encyclopédie*
    - Selections from Adam Smith's *On the Wealth of Nations*

Week Six : September 28 & 30

- Tuesday
  - Counting Things and People
  - Reading
    - No readings

Unit 3: Experiment

- Thursday
  - On Scientific Method
  - Making New Effects
  - Readings
    - Hatton and Plouffee, Part I, Introduction, Pirsig and Bauer
    - Gregory, Chapter 7
    - Selections from William Harvey's *De Motu Cordis*,
      - Read "Letter to the King, Prefatory Remarks, Dedication & Chapters 1-5
    - Selections from Rene Descartes, *Principia Philosophiae*,
- **Deadline for discussing paper topic with instructor**

Week Seven : October 5&7

- Tuesday
  - Making New Creatures
  - Readings
    - No readings

- Thursday
  - The New Chemistry
  - Getting the Word Out
  - Readings
    - Gregory, Chapter 10 & 11

Unit 4: Technoscience

Week Eight : October 12 &14

- Tuesday
  - Lecture and Discussion: Global Science
  - Readings
    - Gregory, Chapter 3, Review sections on exploration, natural history, and Darwin
- Thursday: **Mid-Term Exam, Through the end of Unit 3**

Week Nine: October 19 & 21

- Tuesday: Lesson Plan 1
- Thursday
  - Lesson Plan 2
  - Research and Development
  - Readings
    - Gregory chapters 25 & 26
    - Selections from: Robert Oppenheimer, *The Open Mind*
- **Paper Prospectus Due by Noon October 22**

Week Ten : October 26 & 28

- Tuesday
  - Lesson Plan 3
- Thursday
  - Lesson Plan 4
  - Big Science and the Atomic Bomb

Week Eleven : November 2 and 4th

- Tuesday: Lesson Plan 5
- Thursday:
  - The Great Robot Race
  - **No Class** Outside Assignment on the Great DARPA Robot Race
  - Readings
    - Selection from Jacob Brownoski's *Science and Human Values*

Week Twelve : November 9 & no class on Nov 11th (Veteran's Day)

- Tuesday: Lesson Plan 6
- Thursday: **No Class**

Unit 5: World Readings or Hermeneutics

Week Thirteen : November 16 & 18

- Tuesday: Lesson Plan 7
- Thursday:
  - Lesson Plan 8 & 9

Week Fourteen : November 23 and no class on Nov. 25th (Thanksgiving)

- Tuesday:
  - Lesson Plan 10
- **Paper First Draft Due by noon November 24th**
- Thursday: **No Class**

Week Fifteen: November 30 & December 2

- Tuesday
  - 7th Century Hermenuetics, Before, and Beyond
  - Readings
    - Gregory, Chapters 2 and review chapter 3
- Thursday:
  - Eugenics
  - Making Up People
  - Readings
    - Darwin, Chapters 6 & 14

Week Sixteen : December 7

- Final Discussion & Review for Exam

❖ **Final Draft Due By Noon December 10th**

Final Exam, December 16th

Important Dates and Deadlines

- September 30: Deadline for discussing paper topic with instructor
- October 14: Mid-Term Examination
- October 22: Paper Prospectus Due by Noon
- November 24: First Draft of Paper Due by Noon
- December 10: Final Draft of Paper Due by Noon
- December 16: Final Exam, 3:00 - 5:00 pm