

SYLLABUS

SPRING 2015

GEMS 104 - TOPICS IN SCIENCE, TECHNOLOGY AND SOCIETY

Credits: 3

Grading Method: Regular

General Education Categories: DSHS or DSHU or DSSP, and SCIS (I-Series Signature Course)

Lecture: Tuesday 5:00 – 6:15 pm; 1202 Engineering Classroom Building

Discussion Sections: various times; 0100 Ellicott Hall

Course web site: <http://myelms.umd.edu>

Instructor: Dr. Frank J. Coale

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Course Description

GEMS 104 is a three-credit course for first-year Gemstone students designed to examination of how cultural, economic, political and social forces shape scientific and technological systems and, conversely, how scientific and technological systems have affected the culture, economies, organization and politics of societies. Students in the course will form small teams to carry out semester-long research on socio/technical topics related to the course themes chosen for the specific semester. Advanced Gemstone students serve as Section Leaders (SLs) who manage and facilitate learning in the discussion sections.

Course Objectives

The objective of GEMS 104 is to expose first-year Gemstone students to the opportunities and challenges associated with the team research experience that is the cornerstone of the Gemstone Honors Program. Working as teams and focusing on an array of contemporary issues in science, technology and society, students will gain valuable experience in the consumption and evaluation of published literature, creating and defending research-defensible position statements, and presenting team research results in written, oral and visual presentation formats.

Course Expectations

The success of this course relies heavily upon interaction and exchange of ideas among students, the SLs and the instructors. Therefore, class attendance and participation are essential and required. Students are required to keep up with all written and reading assignments so they can provide informed contributions to their team and enrich the discussion components of the course. Students are required to communicate effectively which includes reading and responding to course-related email.

University of Maryland Honor Pledge

Academic dishonesty is a serious offense, which will not be tolerated in this class and may result in suspension or expulsion from the Gemstone Honors Program as well as the University. The University has a nationally recognized Honor Code, administered by the Student Honor Council. Unless you are specifically advised to the contrary, the University of Maryland Honor Pledge statement MUST be handwritten or typed on the front cover or first page of all written assignments; MUST be projected at the beginning or conclusion of all visual

presentations; and MUST be clearly stated during the course of all oral presentations. The Honor Pledge will apply to all contributors, authors or team members who participated in a group project or assignment.

The University of Maryland Honor Pledge:

"I (we) pledge on my (our) honor that I (we) have not given or received any unauthorized assistance on this assignment/examination."

More information on the honor pledge can be found at: <http://studentconduct.umd.edu/aca/honorpledge.html>.

Spiritual/Religious and/or Cultural Observances

The University System policy on religious observances provides that students should not be penalized because of observances of their religious beliefs; students shall be given an opportunity, whenever feasible, to make up within a reasonable time any academic assignment that is missed due to individual participation in religious observances (<http://www.president.umd.edu/policies/iii510a.html>). Some class times are in close proximity or concurrent with spiritual/religious or cultural observances. We will make every attempt to avoid any conflicts. However, if a class date or assignment does create a conflict, please inform the instructors in advance and in writing so we can make appropriate arrangements.

ADA Statement

In both compliance with and in the spirit of the Americans with Disability Act (ADA), we would like to work with you if you have a disability that is relevant to your work in this course. If you have a documented disability, please contact the instructors within the first two weeks of the semester to discuss academic accommodations.

More information on academic accommodations for students with disabilities can be found at: <http://www.counseling.umd.edu/DSS/registration.html>

Course Evaluation

Your participation in the evaluation of courses through CourseEvalUM is a responsibility you hold as a student member of our academic community. Your feedback is confidential and important to the improvement of teaching and learning at the University. Please go directly to the website (www.courseevalum.umd.edu) to complete your evaluations for GEMS 104 beginning in late April 2015. By completing all of your evaluations each semester, you will have the privilege of accessing online evaluation reports for the thousands of courses for which 70% or more of enrolled students submitted their evaluations.

Absence, Tardiness, and Missed Assignment Policy

Students are expected to attend all scheduled lecture and discussion section classes. Students who need to be absent from class need to notify their SL or course instructors in advance to ask for an approved excused absence. Absences will only be excused for the following reasons: health-related issues (see the University policy below), officially representing the University at an event (must have a note from the authorizing official), religious observances, or family emergency. Students who are unexcused from class on the day of a "major scheduled grading event" will not be allowed to make up the assignment and will receive a zero for the missed assignment. Please remember that GEMS 104 is a regularly-scheduled, for-credit course and "outside the schedule" activities for other courses, including exams, that conflict with the GEMS 104 scheduled lecture or discussion section meeting times do not constitute an excused absence from GEMS 104. University policy states that instructors who offer exams during non-class time are required to offer make up exams for students who have other classes during the exam time period.

Any student who wishes to be excused for an absence from a single lecture, recitation, or lab that is not a "major scheduled grading event" because of illness shall:

- a. Make a reasonable attempt to inform the instructors of his/her illness prior to the class; and
- b. Upon returning to class, present their instructor with a self-signed note attesting to the date of their illness. Each note must also contain an acknowledgment by the student that the information provided is true and correct. Providing false information to University officials is prohibited under Part 9 (h) of the Code

of Student Conduct (V-1.00(B) UNIVERSITY OF MARYLAND CODE OF STUDENT CONDUCT) and may result in disciplinary action.

Students who experience more than one absence because of illness or experience illness during a “major scheduled grading event” are required to provide written documentation of the illness from the Health Center or from an outside health care provider. In cases where written verification is provided, the Health Center or outside health care provider shall verify dates of treatment and indicate the time frame that the student was unable to meet academic responsibilities. No diagnostic information shall be given.

Required Readings

The Immortal Life of Henrietta Lacks by Rebecca Skloot. Broadway Paperbacks: New York, 2011.

**Note: additional publication by Crown Publishers, 2010 and others.*

Selected readings may be assigned and will be posted to the course Canvas site prior to assignment.

Test and Exams

There are no tests or exams in this course. There is no final exam for this course. A series of written and presentation assignments will serve as learning evaluations for this course.

Schedule of Lecture and Discussion Sections

Month	Day	Lecture #	Lecture	Discussion Section
January	27	1	Intro, syllabus, goals, topics, groups, teamwork, topic selection & Introduction to <i>The Immortal Life of Henrietta Lacks</i>	Brainstorm research topic, create outline Henrietta Lacks Prologue- Chapter 2
February	3	2	Interpreting Scientific Claims	Chapters 3-11 Crafting a position statement Discussion of Topic
February	10	3	HeLa Cells & Ethics	Library Pre-Test Chapters 12-17 Discussion <i>Due in Discussion: Position Statement Paper</i>
February	17	4	Library Session #1	Literature Review Article Discussion/Share Chapters 18-22 Discussion <i>Due in Discussion: Reflection on position statement writing process.</i>
February	24	5	Vulnerability in Research	Literature Review Chapters 23-27
March	3	6	Library Session #2	Finalizing Literature Review Chapters 28-31 Discussion
March	10	7	Evolution and History of Mental Institutions in US	Begin Research Poster construction Chapters 32-38 Discussion <i>Due: Literature Review</i>
March	17	Spring Break	Spring Break - No class	Spring Break - No class
March	24	8	Law & Order "Immortal"	Read: Javittt, G. Why Not Take All of Me? Reflections on <i>The Immortal Life of Henrietta Lacks</i> and the Status of Participants in Research Using Human Specimens. <i>Minn. J. Law, Sci & Tech.</i> 2010: 11: 713-755. Poster layout Overview of Human Subjects Research
March	31	9	Research Methodology & Abstracts	Begin Poster Construction Methodology discussion
April	7	10	Briefing #1	Poster Construction
April	14	11	Current STS Topic	Due: Draft poster uploaded onto Dropbox Poster Critique <i>Due: Technical Policy Briefing #1</i>

April	21	12	Dr. Duvinage: Poster Critique and Professional Conference Etiquette & Poster Presentation Skills	Henrietta Lacks & the research enterprise <i>Due: Final Poster Edits and Final poster uploaded onto Dropbox by Friday, April 24th at 5:00pm</i> <i>Due: Henrietta Lacks Summary Paper (Individual)</i>
April	28	13	Lecture Canceled for Undergraduate Research Day MANDATORY: <i>Undergraduate Research Day attendance (April 29th)</i>	Discussion Sections CANCELED: Work on final Team Research Paper construction MANDATORY: <i>Undergraduate Research Day attendance (April 29th)</i>
May	5	14	Briefing #2 (by Gemstone team)	Final Team Research Paper editing
May	12	15	Briefing #3 (by Gemstone Team)	No discussion sections <i>Due May 12th by 5:00pm: Final Team Research Paper</i> <i>Due May 12th by 5:00pm: Technical Policy Briefing #2</i> <i>Due May 19th by 4:00pm: Technical Policy Briefing #3</i>

Graded Assignments (“major scheduled grading events”)

All of the assignments listed below will be graded as section grades. All members of the section will receive the same number of points for a given graded assignment. All graded assignments are due to your Section Leader by 11:59pm on the night prior to your discussion section meeting time. There will be a 10% reduction in points for every calendar day that an assignment is late. Assignments will not be accepted more than five (5) days past the due date.

Position Statement (Section Assignment)

Craft a brief position statement for your assigned team topic. Clearly express your teams’ position. This should be no more than three sentences.

Reflection on Position Statement Writing Process (Individual Assignment)

In a one-page reflection discuss the process of writing as a group. Reflect on the experience: what worked, what did not work, and lessons learned. How did all members of the group participate?

Literature Review (Section Assignment)

Develop a thorough, yet concise, review of the published primary literature that defends your team’s Position Statement. Primary literature sources should be cited using a standard referencing procedure and style. Include at least 20 primary sources that are cited in the text and fully referenced in an appended listing. This should be approximately 5 to 7 pages, not including appended list of references.

Technical Policy Briefing Presentation (Random group/future Gemstone team assignment)

There will be three Technical Policy Briefing activities during lecture. Group membership will be assigned randomly with a total of ten students per group and by newly formed Gemstone teams later in the semester. Topics will be assigned based on current events. Groups will be assigned a short period of time (approximately twenty minutes) to organize their argument and research supporting data. Groups should utilize PowerPoint to enhance their presentation to the class (ten minutes).

Draft Position Poster (Section Assignment)

Create a research presentation poster suitable for a professional research conference. The poster size is 36 inches tall (vertical dimension) by 48 inches wide (horizontal dimension). Your poster should present a comprehensive and informative summary of your Position Statement, Literature Review and Future Research Methodology assignments. Posters should present the essential information in a professionally attractive and visually pleasing layout that makes the “bottom line” conclusions readily absorbable by the casual reader while yet providing sufficient technical information to satisfy the curiosities of a knowledgeable reader. Instructions regarding draft poster printing will be provided.

Final Poster (Team Assignment)

The poster size is 36 inches tall (vertical dimension) by 48 inches wide (horizontal dimension). Your poster should present a comprehensive and informative summary of your Literature Review, methodology considerations and future directions. Posters should present the essential information in a professionally attractive and visually pleasing layout. You must present a concise unified conclusion. Again, the “bottom line” conclusion should be readily absorbable by the casual reader while yet providing sufficient technical information to satisfy the curiosities of a knowledgeable reader. Your final product should be in the form of one single PowerPoint slide of the poster. Instructions regarding final poster printing will be provided.

Poster Presentation at Undergraduate Research Day

All GEMS 104 sections are required to present their final Poster at Undergraduate Research Day. Undergraduate Research Day (URD), Maryland’s largest, most visible and diversified showcase for undergraduate research accomplishments will take place on Wednesday, April 29, 2015, from 1 to 4 pm, with registration and set up opening at 12 noon. URD will take place in the Grand Ballroom of the Stamp Student Union. Course instructors and SLs will coordinate URD registrations for GEMS 104 teams and organize and

facilitate printing the hardcopy of your team poster for display at URD. The final version of each team's URD poster file is due to the instructors by 11:59pm on April 20, 2014. All GEMS 104 students are required to attend all or a portion of URD. Each GEMS 104 poster must be attended by a team spokesperson at all times during URD.

Final Research Paper (Section Assignment)

Use all of the information compiled from previous paper and poster assignments to craft a comprehensive, cohesive and concise research paper that presents your arguments for your assigned topic. You must present a concise unified conclusion. The "bottom line" conclusion should be readily absorbable by the casual reader while yet providing sufficient technical information to satisfy the curiosities of a knowledgeable reader. Primary literature sources should be cited using a standard referencing procedure and style. Include at least 20 primary sources that are cited in the text and fully referenced in an appended listing. Maximum length = 10 to 15 pages, not including appended list of references.

Technical Policy Briefing (Three individual assignments)

After each in-class technical policy discussion, write a one-page briefing discussing your researching findings and recommendations in a technical abstract format. This will be submitted by 11:59pm to your Section Leader one week following each in-class debate. Completed slides from the briefing should be uploaded directly to Dropbox (link to be provided).

Henrietta Lacks Summary Paper (Individual Assignment)

Using the book as a guide, describe the process of scientific inquiry through the discussion of a timeline that begins with the removal of Henrietta's tissue sample and the resulting medical breakthroughs. Consider the following: contradictory forces of altruism and profit; tensions between ethics and science; societal perceptions and scientific understanding. This should be approximately 5 to 7 pages.

Class Participation

Class participation is a critical component of success in this course and will be determined through a number of different means including contributions to group assignments, involvement in discussion section activities, random engagement assessments during lectures, and peer evaluations. A quality learning experience rests heavily on a high degree of interaction and exchange of ideas among the students, SLs and instructors. All participation points will be awarded to individuals based on his or her individual performance on participation assessment tasks. Discussion section participation points will be determined by Section Leaders based on each student's participation and engagement in discussion section activities and assignments. Participation points may be deducted for nonparticipation in lecture and discussion sections, tardy arrival, leaving early, or disruptive classroom behavior.

Schedule of Assignments and Grade Points

Course Grades

The instructors reserve the option of uniformly lowering the required cumulative point total required for any final course letter grade but will not raise the cumulative point total required for any final course grade. However, such grade scale adjustments are extremely rare and should not be expected.

Month	Day	Assignments Due 11:59pm prior to Discussion Section unless otherwise noted	Grade
February	10	Position Statement Paper (Section Assignment)	50
February	17	Reflection on Position Statement Writing Process (Individual)	50
March	10	Literature Review (Section Assignment)	250
April	14	Draft Poster (Section Assignment)	100
April	14	Technical Policy Briefing #1 (Individual Assignment)	40
April	21	Henrietta Lacks Summary Paper (Individual Assignment)	200
April	24	Final Poster due by 5:00pm (Section Assignment)	250
April	29	Undergraduate Research Day attendance and participation	50
May	12	Final Team Research Paper due by 5:00pm	300
May	12	Technical Policy Briefing #2 due by 5:00pm	40
May	19	Technical Policy Briefing #3 due by 4:00pm	40
Ongoing		Discussion Participation (10 points per week)	130
TOTAL POINTS			1500

Final Course Grade	Final Cumulative Point Total
A+	1470 - 1500
A	1380 - 1469
A-	1350 - 1379
B+	1320 - 1349
B	1230 - 1319
B-	1200 - 1229
C+	1170 - 1199
C	1080 - 1169
C-	1050 - 1079
D	900 - 1049
F	0 - 899