

FIRST-YEAR SEMINAR COURSE PROPOSAL
UNIVERSITY OF MARY WASHINGTON

Use this form to submit **FSEM 100 topics** courses for review **or** any **other existing course** that you wish to have designated to meet the first-year seminar requirement.

COURSE NUMBER:	HN FSEM 100		
COURSE TITLE:	SCIENCE AND TECHNOLOGY: BECAUSE WE CAN SHOULD WE?		
SUBMITTED BY:	April Wynn	DATE:	1.8.16
<i>This course proposal has the department's approval. (Put a check in the box to the right.)</i>			✓

COURSE DESCRIPTION. In the space below, provide a one- to two-sentence description of this course. The description will be entered in Banner and will also be used in other publications about the first-year seminar program (such as the “Eagle Essentials” booklet).

With science and technology come great advances - cloning, nuclear power, and chemotherapeutics, as well as a large price to pay - eugenics, climate change, and drug resistant pathogens. During the 20th century scientists operated under the mantra "We can therefore we do" but is that appropriate?

RATIONALE. Include short statement addressing how this course meets the FSEM's basic components, explaining *specifically* how it will meet the common FSEM student learning outcomes (see FSEM call above), and arguing why this course should be approved to meet the FSEM General Education requirement. Please point to specific readings, assignments, and exercises and show how they will meet the learning outcomes.

This course will meet the FSEM's basic components by requiring student to utilize a variety of scientific and non-scientific sources to examine how scientific or technological advances developed and the ethical and scientific considerations involved in these advances. This articulation of evidence-based arguments will be demonstrated in the advancement paper analyzing the science and ethics of a past scientific/technological advancement. Furthermore, a second paper looking forward into a future potential breakthrough will also have students utilize a variety of research techniques and synthesize information effectively to support their written arguments. Both papers as well as the primary article annotation assignment, and smaller paper summaries, and resume construction will provide highly detailed feedback to allow students to edit and revise their written work and process. Students will have many opportunities to provide feedback for each other, both with article annotation revisions and through the in class debates over controversial scientific/technical advancements. The debate as well as a short “elevator speech” and a more formal 8 minute presentation will give the students chances to practice public speaking and work on their oral communication skills in addition to in daily class discussions. The librarians will discuss types of informational sources, primary article searching, and reference management. Both the speaking and writing center will come speak to the class as well as be a required visit for students during the semester, while QEP modules will be utilized to reinforce concepts taught in class. Academic and Career Services will come twice to discuss registration, picking a major and internships preparation.

SYLLABUS. *Attach a complete course syllabus.*

SUBMIT this form and attached syllabus **electronically as one document** to Will Mackintosh (wmackint@umw.edu) by 5 PM on February 1, 2016. All submissions **must** be in electronic form.

**HN FSEM 100.XX: Science and Technology - Because we can, should we?
Proposed Fall 2016 Syllabus**

Instructor	Dr. April Wynn Jepson Science Center 333	awynn@umw.edu 540-654-1421		
Office Hours	Mon. & Wed. 3:00-5:00; Tues. & Thur. 9:30-10:30; or by appointment			
Librarians	Peter Catlin, Reference Librarian and Coordinator of First-Year Programs, pcatlin@umw.edu ; 540-654-2438 Erin Morris Wyson, Reference and Sciences Librarian, emorris4@umw.edu ; 540-654-1748			
Peer Mentor	Upper-class honors student and/or orientation leader – come a several times a semester to meet with the students to discuss topics like course registration, integrating into campus culture, picking a major and advisor, etc.			
Writing Center	The Writing Center offers free writing consultations for students at all levels and in all disciplines. No matter what you're writing and no matter where you are in the process (generating ideas, drafting, revising or proofreading), the peer tutors can assist you. The writing center is located in room 430 of the HCC. You may reach the writing center through their website at http://academics.umw.edu/writing-fredericksburg/ or by calling 540-654-1036.			
Speaking Center	The Speaking Center offers help to plan and practice presentations a variety of oral presentations as well as other speaking assignments. The Speaking Center is located in room 437 of the HCC. You may reach the speaking center through their website at http://academics.umw.edu/speaking/speaking-center/ or by calling 540-654-1347 or via email at spkc@umw.edu .			
Academic & Career Services	Located on the second floor of Lee Hall. You may reach the Academic and Career Services by calling 540-654-1010.			
Class Meetings	TR	XX:XX-XX:XX	Section XX	JEPSON
Prerequisites	None			
Course Description	Science is a discipline about discovery and pushing the boundaries of our understanding. With science and technology come great advances - cloning, nuclear power, and chemotherapeutics, as well as a large price to pay - eugenics, climate change, and drug resistant pathogens. During the 20th century scientists operated under the mantra "We can therefore we do" but is that appropriate? Is science going too far? Is it pushing the boundaries of what should be done by what can be done? This HN FSEM course will examine some of the greatest scientific advances in the last 50 years, the impacts they had on society, and the cost of these advancements. Individually and as a group we will think critically about the impact of past advances as well as future potential advances, examine multiple sources of information to fully understand the ramifications of each advancement, and utilize both written and oral expression to communicate our findings.			

Learning Outcomes

This FSEM will include the following basic components:

- Utilize active, discussion-based, participatory learning,
- Be exploratory in nature, rather than just presenting conclusions;
- Revolve around reading primary literature;
- Synthesize material from multiple sources to aid student development of his/her own views on the topics covered.

This HN FSEM (in addition to the completion of HONR100) will have students:

- Formulate an academic argument with appropriate research documentation.
- Articulate the value of the goals of the honors program as it relates to the liberal arts as a multidisciplinary, systematic approach to knowledge.
- Apply specific academic solutions to broader, interdisciplinary fields of study.
- Integrate multiple viewpoints involving different cultures and/or perspectives.

All students will:

- Utilize a variety of research techniques to retrieve information efficiently, evaluate retrieved information, and synthesize information effectively to support his/her messages or arguments;
- Improve development and organization of written arguments;
- Demonstrate the ability to edit and revise in the writing process;
- Apply the basic theories and principles of oral communication;
- Communicate effectively in a variety of settings, including public speaking and group discussion.

Course Objectives

1. Develop the ability to acquire appropriate scholarly resources for different tasks.
 - a. Distinguish between types of information sources
 - b. Select information sources relevant to topic/work
 - c. Identify and Use library resources
 - d. Critically examine validly of all sources
2. Demonstrate the ability to communicate results in both written and oral formats.
 - a. Informal and formal oral presentations
 - a. Capacity to clearly articulate a coherent and compelling lines of thought
 - b. Class discussions and debates
 - c. Writings on readings
 - a. Capacity to clearly articulate a coherent, creative and compelling line of thought (even when not personal viewpoint)
 - d. Develop and revise an argument paper arguing for or against a scientific or technical advance.
3. Form productive peer networks and study groups.
4. Master processing skills such.
 - a. Problem solving in the seminar setting
 - b. Critical thinking about technological advances
 - a. Recognize the context of a line of thought
 - b. Evaluate the consistency and coherency of a line of thought
 - c. Create a consistent, coherent and compelling line of thought
 - c. Reflective learning
5. Demonstrate skills in information organization and management.
 - a. Google Docs
 - b. Zotero

Required Readings *The Immortal Life of Henrietta Lacks*

Brutes or Angels: Human Possibility in the Age of Biotechnology by James T. Bradley, University of Alabama Press, 2013. ISBN-13:9780817317881.

Articles and readings as assigned. They will be posted on Canvas throughout the semester. **All assigned readings for a particular day should be read prior to that day's class and are “fair game” for discussion, pop quizzes, exams and presentations.**

Evaluation Grades will be assigned on the basis of the student's performance in each of the following:

Writing Assignments (including revisions)	250 pts
QEP & Learning Outcome Module Assignments	100 pts
Oral Presentations	250 pts
Debate/Trial	100 pts
4 th Hour Activities	50 pts
<u>Participation</u>	<u>250 pts</u>
Total	1000 pts

Writing Assignments These assignments will include such assignments as small writings about readings, annotations of papers, library research method write-ups over scientific advances and assigned readings, as well as a larger 5-6 page argument paper. Both drafts and revised work will be assessed.

Learning Outcomes Module Assignments There are several specific QEP modules that address the learning outcomes for the course. These modules will include information retrieval, source evaluation, citation management, the writing process and theory/principles of oral communication.

Oral Presentations You will give both brief (~2 minute) and longer oral presentations (5 & 10 minutes). Some will be formal including the use of visuals (such as PowerPoint), while others will be extemporaneous.

Debate/Trial In the latter part of the semester the class will participate in a debate or trial of an ethically controversial scientific advancement. For this activity members of the class will be asked to defend a position on an ethical issue (the position will not necessarily reflect the personal stance of the participant). This activity is designed to allow for examination of a sensitive issue from multiple viewpoints in a respectful and constructive manner.

4th Hour Activities These are activities outside of the class time for which attendance will enrich the learning environment, provide connection with faculty and students across campus.

Class Participation The learning environment in every class is set by the students and the instructor. It is crucial for the success of this course that all students participate in activities and class discussions. There will be many different forms of participation and students are expected to remain actively engaged while in class. The use of technology is requested for some activities, but otherwise, should be put away unless being used directly for a class activity.

Contact Each student must regularly check their **UMW e-mail address as well as Canvas**. Announcements and assignments will be made or posted via email or on Canvas. In addition all students are required to **check Blackboard** regularly, as this is where we will post class related material including readings.

Inclusive Learning and Disability Resources I feel strongly that the classroom and laboratory should be inclusive environments where people from different backgrounds, temperaments, experiences, and life circumstance can all participate in shared learning. Listening, respectfulness, and civility are cornerstones of inclusive learning and will be expected from everyone.

Any student with particular needs should contact the Office of Disability Resources; 401 Lee Hal or at 540-654-1266. This office is committed to guide, counsel and assist student with disabilities. If you receive services please meet with me as soon as possible to discuss your approved accommodation needs. Accommodation services cannot be made until we have met and are not retroactive, but all information will be kept confidential.

Honor Code You are expected to **abide by the UMW Honor Code**. All tests and assignments must be completed independently, unless specified by me. Lab data may be shared with fellow students, but the synthesis and analysis of that data should be completed individually. Violations of the honor code could result in failure of the course and suspension from the university. **All written work will include the following pledge “I hereby declare, upon my word of honor, that I have neither given nor received any unauthorized help on this work. (Signature)”**

DAILY SCHEDULE

Dates	Units and Topics	Assignments Due
Week 1 – Introductions and Resources – Read Chapter 1 & 2 (B&A)		
9/	Introductions, Overview and Expectations Scientific & Technology Interests Types of Online Information Sources – librarian	Bring in phone, laptop, tablet
9/	Popular Press Articles Scientific Breakthroughs – nuts and bolts	Popular press article & writing
Week 2 – Resources and Scientific Advances – Read Chapter 6 & 7 (B&A)		
9/	Definition of Scientific Breakthrough Introduce <i>Brutes or Angels</i> 5 th Hour Activity – explanation of guidelines	<i>Checking for CRAAP QEP module</i>
9/	Finding Information Sources – librarian Search Terms Discussion	Breakthrough Research and Justification Search Results Assignment
Week 3 – Scholarly Articles & Ethics –Read (HeLa)		
9/	Introduce <i>Immortal Life of HeLa</i> Brief Discussion of Ethical & Cultural Viewpoints	Readings and Search Results
9/	Primary Articles – librarian	Primary Article Search
Week 4 – Oral Communication and Ethical Decisions – Read (HeLa)		
9/	Oral Presentation of Breakthroughs Writing Center Visit	Oral Presentation (elevator speeches)
9/	Where the rubber meets the road – Ethics in the World	<i>Communication Apprehension QEP module</i>
Week 5 – Data Presentation and Information Synthesis – Read (HeLa)		
9/	Primary Article Sharing & How to Read Scientific Articles	Breakthrough Paper Hypothesis <i>Deconstruction Citations QEP module</i>
10/	Zotero Module – librarian	Annotation Activity
Week 6 – Science and Society – Read (HeLa)		
10/	Paper Annotation Editing and Evaluation	Article Hunt
10/	Speaking Center Introduction	Zotero References
Week 7 – Science and Society – Read (HeLa)		
10/	Fall Reading Day, No class	Ethics Readings
10/	Ethics in Science – HeLa	Breakthrough Paper Draft Due
Week 8 – Perceptions of Science – Read Chapter 8 &9 (B&A)		
10/	Academic and Career Services Introduction	
10/	Ethics Discussion of HeLa	
Week 9 – Ethics now and in the Future		
10/	Ethics Discussion of <i>Brutes or Angels</i>	Ethics Readings
10/	Introduction of Future Advancements	Writing Center Revision Appt.

DAILY SCHEDULE

Dates	Topics or Modules	Readings
Week 10 – Science, Ethics and You!		
11/	Academic and Career Services Visit	CV or Resume
11/	Your Personal Ethics and Debate Prep	Opinion Article
Week 11 – Debates		
11/	Debate Part I	Speaking Center – Presentation Appt.
11/	Debate Part II	
Week 12 – Looking Forward		
11/	Learning from the Past to Look at the Future	Breakthrough Paper Final Draft
11/	Breakthrough Presentations	
Week 13 – Breakthrough Presentations		
11/	Breakthrough Presentations	
11/	Thanksgiving Recess, No class	
Week 14 – Learning from the Past to Help the Future		
12/	Future Advancements Discussion	
12/	Enrichment Day	Future Advancement Draft
Week 15 – Learning from the Past to Help the Future		
12/	To Boldly Go Forward	
12/	Wrap-Up and Evaluations	
Final Exam Period		Future Advancement Paper Revisions Due

Note: Topics, dates, and assignments are subject to change. Please check Canvas for the most up to date information.

Breakthrough Paper Assignment – Due

Write a 5-6 page paper on your Breakthrough. You need to synthesize information from at least 4 primary sources as well as at least 4 other sources. Be sure to incorporate all pertinent information about your breakthrough. You need to also incorporate updated information on your breakthrough in order to examine how this breakthrough has affected society. Be sure to address ethical issues relating to your breakthroughs and examine them from at least two perspectives.

You will need to make an appointment with the Writing Center to review your paper. You need to have made your appointment prior to (date) and have completed you appointment by (date). I will be checking with the Writing Center to ensure that you met with them.

You will be presenting on your breakthrough to the class in a 8 minute presentation. You will have 6 minutes for the presentation portion (must include a PowerPoint or similar presentation format) and 2 minutes for questions.

Future Advancement Paper Assignment – Due

You will write a 4 page paper about a potential breakthrough. You will pick one current scientific breakthrough that has the potential for greatness and disaster. You will discuss what the breakthrough is, why it has the capacity for greatness and what the potential pitfalls are. You will need to address which way you think the breakthrough will head – greatness or disaster. Be sure that you discuss ethical issues in great length. You will need to have at literature cited for this paper and you will need to keep your references in Zotero.

When you turn this paper in you will also email me a copy of your Zotero library so that I can see that your references are in Zotero. You will also need to attach all your references for my review.

Debate Assignment –

You will be assigned a topic to debate. You need to collect information as a group on your topic. You should come ready to argue for either side of the topic. You should examine the debate topic from a broad perspective first and then narrow into specifics that you can use to support either side. You will be informed of the side you will be arguing for the day of the debate. The debate will take place in class on November ?? or Nov. ??.

Lincoln-Douglas Debate Format - <http://www.csun.edu/~dgv61315/debformats.html#NDT>

Lincoln-Douglas (or L-D) debate began as a reaction to the excesses of team policy debate in high school. The idea was to have a debate focused on discussing the merits of competing ethical values in a persuasive manner. The famed debates between senatorial candidates Abraham Lincoln and Stephen A. Douglas in the 1850s inspired the name and format for this style of debate. L-D is a one-on-one debate, and as in team policy debate, the proposition and opposition teams are called the *Affirmative* (or *Aff*) and the *Negative* (or *Neg*), respectively.

Format. A round of L-D debate consists of five speeches and two cross-examination periods. The speeches and their times are as follows:

Speech:	Affirmative Constructive	Cross- Ex of Aff by Neg	Negative Constructive	Cross- Ex of Neg by Aff	Affirmative Rebuttal	Negative Rebuttal	Affirmative Rejoinder
Time:	6 min.	3 min.	7 min.	3 min.	4 min.	6 min.	3 min.

Notice that the Affirmative has more speeches than the Negative, but both have the same total speaking time (13 minutes).

Resolutions. Resolutions in L-D debate are usually stated as propositions of value. Although the propositions are sometimes related to issues of policy, this is not always the case. Typical resolutions include: "The spirit of the law ought to take precedence over the letter of the law to enhance justice," "Cooperation is superior to competition," "Violent revolution is a just response to oppression," etc. Unlike in team debate, the debaters are expected to debate the resolution *as a whole*, not just a particular example.

Style. Back when I did L-D debate (more than ten years ago now), it was true to its original mission of restoring persuasion and values to high school debate. Evidence was considered important, but it was not the be-all-and-end-all that it is in team policy debate. The emphasis was on speaking clearly, logically, and fluently.

Annotation activity:

1. Write your breakthrough topic at the top of your annotated article.
2. Switch your annotated article with another student
3. Read through their annotations
 - a. Look for following the annotation suggestion of the assignment
 - i. Read the introduction and highlight the question and the results.*
 - ii. Write out the main point of each paragraph in the introduction.*
 - iii. Write out a summary of each section of the results and conclusion sections.*
 - iv. If there is a separate conclusions section read and write out the 3 main conclusions – then list out the results that support each conclusion.*
 - v. Read through the methods and see if they used standard methods.*
 - vi. Write out any questions that you have and suggestions for improvement.*
4. On a separate sheet of paper
 - a. Comment on their annotations for the above suggestions
 - b. Make suggestions for annotation improvements
 - c. Write out how well you found their annotation for understanding what this article was about. (You should be able to figure that out from the abstract and conclusions.)
5. On yet another sheet of paper
 - a. Write down helpful ideas for your own annotation from the one you are reading

4th Hour Requirements

- You have to complete 3 outside activities
 - One has to be a colloquium or presentation (approved by me) in a science discipline
 - You will write a ½ analysis of the event and include at least 3 questions that you were left with

- Two are of your choosing and may range from social to sporting or academic events
 - First – write a reflection: ½ page about what interested you and what you took away from the event
 - Second – summarize event and write about how this event is a reflection of some aspect of your personality