**CONNECTIONS 1**

**IST 120-103 CRN 2788**

**COURSE OUTLINE**

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| Course Title/Number | IST 120  120 Connections 1 |
| Semester/Year  Credit hours | Fall 2014 3 |
| Days/Time | TR 12:30 pm-1:45 pm |
| Location | ML Commons |
| Instructor  Textbooks | Menashi Cohenford, BSc., MT, Ph.D.  1. Risk: A Practical Guide for Deciding What’s Really Safe and What’s Really Dangerous in the World Around You. Boston: Houghton Mifflin Co.  Authors: Ropeik & Gray (2002)  2. Introduction to Bioethics  Authors: John Bryant, Linda Bagott la Velle, John Searle  Publisher: Wiley & Sons Inc. 2005 ( Hoboken, NJ) ISBN:978-0-470-02198-9  3. My Beautiful Genome: Exposing Our Genetic Future, One Quirk at a Time    Author: Lone Frank  Handouts given in class  It is required that students keep current on events related to the course using new sources, particularly, news papers. |
| Office | BBSC Room 241 H |
| Phone& E-mail | 304-696-2697  [cohenford@marshall.edu](mailto:cohenford@marshall.edu) |
| Office/Hours | M-F 11 am to 12pm and M 2pm-3pm and W 2pm-3pm  Or by appointment |
| University Policies | By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy be going to [www.marshall.edu/academic-affairs](http://www.marshall.edu/academic-affairs) and clicking on “Marshall University Policies.” Or, you can access the policies directly by going to <http://www.marshall.edu/academic-affairs/?page_id=802> Academic Dishonesty/ Excused Absence Policy for Undergraduates/ Computing Services Acceptable Use/ Inclement Weather/ Dead Week/ Students with Disabilities/ Academic Forgiveness/ Academic Probation and Suspension/ Academic Rights and Responsibilities of Students/ Affirmative Action/ Sexual Harassment. |

**Course Description**

Introduction to the connections between science, technology and society. Emphasis will be specifically placed on particular cases related to risk and how historical events and ethical concepts influence the perceptions of science and technology in society. Assignments will be focused on some of the recent technological breakthroughs in biotechnology and the risks and dilemmas associated with the implementation of these developments.

**Course Philosophy & Summary**

With advancements in science and technology, man has been empowered with a greater control over life - diminishing risk to a multitude of diseases, misfortunes, and adversities. While these advancements have been welcomed with tremendous enthusiasm, they have also generated deep concerns. For example:

* Should these innovations be extended for other applications including the augmentation of human intelligence, longevity, and physical characteristics?
* Should we confer new characteristics to plants and animals?

This course begins with an introduction to the connections between science, technology and society and will deepen your understanding of the ethical issues that might arise from the risks associated with certain biotechnological breakthroughs.

**Course Objectives**

By the end of this course students should be able to:

* Understand the connections present in our society;
* Find and evaluate sources from the library, internet and contemporary news reports;
* Read, interpret and discuss analytically and critically major issues related to the course theme;
* Work with others to present an effective oral evaluation using visual aids and multimedia;
* Engage in informed participation in class exercises and discussion.
* In the development of a research project, to scientifically analyze data, evaluate and incorporate relevant research, and describe potential implications.
* Effectively communication in relating findings and recommendations resulting from projects.

**Class Participation**

Participation in class activities and discussion is central to this course. To get full credit for class participation (25 points) you must do more than just show up in class. You have to demonstrate that you have read the assignments for the day, and be ready to talk about the coursework in an intelligent manner. Student’s participation in class will be tracked throughout the semester.

Participation includes: Asking questions, discussing issues raised by the instructor and classmates; being attentive and demonstrating interest in whatever is being discussed and communicated; taking notes actively; and taking part in individual/ group activities.

**Individual Weekly Assignments**

You will be responsible for completing weekly 1-2 page papers that argue a position relating to that week’s topic. These papers should use the readings and presentations as a starting point to argue a position on the issue. Suggested topics are indicated in the syllabus, but *may change.*

Evaluation of these shorter assignments will be based on three factors:

1) Does the paper address the topic of the assignment and integrate reading, lecture, and class room discussions?

2) Does the paper clearly articulate your position on the topic?

3) Is the paper well organized with a clear thesis, and is easy to read without mistakes in language or format?

Considering that you are allowed to drop the worst lowest grade on these papers, *they will not be accepted late*. As part of your portfolio, you are required to hold on to these papers.

**Group Presentations:**

The class will be separated into different groups with each group consisting of at least two students. During the semester, each group will be assigned at least one project that they will be presenting to the class in powerpoint format. The topic for each presentation will be selected by the instructor. Every student within each group must take an active role in these presentations.

Presentations must be delivered on the day they are scheduled. Any circumstance that will prevent you from doing so must be discussed with and approved by the instructor according to the University’s Excused Absence Policy.

**Evaluation of Group Presentations**:

All group presentations will be evaluated using a three part approach:

*Content*: What you say in your oral presentation (topic, focus, supporting materials, language and audience adaptation);

*Organization*: How you arrange your oral presentation (arrangement main points, introduction, conclusion, transitions);

*Delivery*: How you present your information (verbal and nonverbal components).

**Final Paper:**

The final paper will be an expansion of one of the shorter papers into a full exploration of a particular issue. This paper should describe a particular situation; focusing on the risks involved and their impact on science, technology and society. It will require significant outside research and documentation.

We will meet together to discuss your plan for the paper. You are expected to use the instructor and the course materials as resources in researching and preparing the project.

**Student Portfolios:**

Each student should submit a final portfolio that includes:

i) Copies of one’s weekly short papers.

ii) Class notes

iii) The final paper

iv) Print out copy of your Team’s Presentation

**Attendance:** Full attendance credit (25 pts) will be given to students who miss no more than two (2) total class periods (lectures or discussion sections). No attendance points will be awarded to any student who misses more than two (2) total class periods. Allowances may be made for students with extenuating circumstances who have a valid university approved excuse. If you miss a class, it is your responsibility to notify the instructor and to find out what was missed. Punctual attendance to lectures is mandatory.

**Grades**

Student **grades** will be calculated as follows: **Points**

\*Individual Weekly Assignments (1-2 pages typed) 100

Group Presentation 25

Class Participation 25 Final Paper 70

Final Portfolio 5

Attendance 25

**Total Points** 250

\*Denotes scores of the top 10 short assignments, with the bottom score dropped

**Final Grade Scale**

The following is presented as a guide only and may be subject to change at the instructor’s discretion.

A: 250-225 Represents excellent work

B: 224-200 Represents good work

C: 199-175 Represents average work

D: 174-150 Represents below average work

F: 149 or less Represents unacceptable performance failing to meet the minimum standards for the course

**Policies on Late Work**

Papers are due in class on the assigned day. Lack of time to prepare or computer failure is not an acceptable excuse for submitting late assignments. If you miss a class, you should submit the paper before class. The lowest three grades will be disregarded; a situation that allows for both planned absences and unavoidable emergencies.

**Students Requiring Special Needs**

Students with disabilities who require special accommodations should refer to this link <http://www.marshall.edu/disabled> which provides information for the educational and physical accessibility support at the university.

**Other Policies:**

The use of cell phones is prohibited in class. Any student using a cell phone will be asked to leave the lecture room.

**Final Paper Assignment**

For the final paper you should write a 6-9 page paper on one of the issues discussed in the course.

Each paper must include:

* A summary of the situation - well supported with a variety of sources.
* A brief background to put the issue of your research in perspective.
* A conclusion explaining why the topic is controversial and how it relates to science, technology and society

The final copy of the paper will be due on **Dec 4.** The paper will be worth 70 points. You should use in-text citation, and choose among MLA, APA, or CBE standards for both citations and your bibliography.

**Statement on Plagiarism:**

All assignments, whether written or oral, must be the student’s own work. This means the ideas and the words of other students, instructors and sources, whether published or unpublished must be properly acknowledged. Submitting an assignment which is not the student’s original and independent work is known as *plagiarism* and will result in either a reduced or a failing grade, recorded as a zero. Plagiarism may result in more serious sanctions, up to and including failure for the course, and expulsion from Marshall. Plagiarism will be taken very seriously as knowing how to use sources appropriately is essential for a passing the course.

If you are ever unsure about how to credit a source, or whether something constitutes plagiarism, you should consult with your instructor *before* the assignment is graded.

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| **Course Student Learning Outcomes** | **How Practiced in this Course** | **How Assessed in this Course** |
| Students will gain an understanding of:   * What is meant by the “Scientific Method”. * The difference between Science and Pseudoscience. * What is risk and what components did you need to consider when determining risk * Scientific Misconduct and Risks Associated with Misconduct in Science * Some of the elementary principles of bioethics. * How bioethical principles apply to:   + Environment   + Animal and human research   + Issues and risks relating to genetic modification   + The Human Genome Project   + Genetic patenting, genetic piracy, and genetically modified crops * Risks and concerns relating to:   + Cloning and stem cells   + Current reproductive technologies   + Unethically derived research   + Variable causes including accidents, tobacco, heart disease, STDs etc. | In-class examples, discussions, videos, reading materials, and papers written for class. | * Your ability to grasp the connections between science, technology and society will be assessed by monitoring: 1) the progression in the quality of your participation, papers, and presentations, 2) in the development of your final research project, your skills to scientifically analyze data, evaluate and incorporate relevant research, and describe potential implications, and 3) your communication skills in relating findings and recommendations resulting from class projects.   . |

**Dates: \*Lectures and Reading Assignments**

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| Aug 25th –Aug 29th  Week 1 | **Topic of the Week:** *Science and Society*’  **Reading Assignments**:  i) Steps of the Scientific Method (See Paper in Web CT) or go to URL site:  <http://www.sciencebuddies.org/science-fair-> projects/project\_scientific\_method.shtml?gclid=Cj0KEQjwvLGfBRDfkrr19KDS-7YBEiQA8CoFJ2lQgVWNAYjp1YbkQXJv8Z7RrnThLWojXfM1jw1pXVcaAgui8P8HAQ#overviewofthescientificmethod  Bottom of Form  Please enter a search term in the text box.  ii) Chapter 1 ‘*Science and Society*’ in Introduction to Bioethics by John Bryant et al.  iii) Article entitled ‘Distinguishing Science and Pseudoscience’ by Rory Coker, Ph.D. located at the URL site <http://www.quackwatch.org/01QuackeryRelatedTopics/pseudo.html>  **Homework**  Ist paper’s topic: What is Science and Pseudoscience?  Explain how you define *Science*, and how your understanding of *Science* has changed?  **Due Date: Aug** 31st |
| Sept 1st | **Labor Day Holiday** |
| Sept 1st –Sept 5th  Week 2 | **Topic of the Week***: Misconduct in Science*   * [Types of Scientific Misconduct](http://www.files.chem.vt.edu/chem-ed/ethics/vinny/ethix_1.html) * [What are the Rules of the Game?](http://www.files.chem.vt.edu/chem-ed/ethics/vinny/ethix_2.html) * [Which is worse for Science: Negligence or Deliberate Misconduct?](http://www.files.chem.vt.edu/chem-ed/ethics/vinny/ethix_3.html) * [Do Scientists Need a Professional Code of Ethics?](http://www.files.chem.vt.edu/chem-ed/ethics/vinny/ethix_4.html)   **Reading Assignments**:  1. Article entitled Misconduct in Science: Do scientists need professional code of ethics? By: [Vincent. Hamner](http://www.files.chem.vt.edu/chem-ed/ethics/vinny/vin_vita.html) Web CT.  **Homework**  2nd paper’s Topic: Find and describe an example of misconduct in research  **Due Date:** Sept 7th |
| Sept 8th –Sept 12th  Week 3 | **Topic of the Week**: Introduction to Bioethics  **Reading Assignments**  i) Chapter 2 entitled ‘*Ethics and Bioethics’* in Introduction to Bioethics by John Bryant et al.  ii) Handout entitled Ethics for Everyone by Arthur Dobrin iii) Read article at URL site http://www.iep.utm.edu/bioethic/  **Team 1**:In the book entitled Risk: A Practical Guide for Deciding What’s Really Safe and What’s Really Dangerous in the World Around You. You cover the topics “**Accidents**-pages 23-33 and **Air Bags** pages 34-39.  **Homework**  3rd Paper’s Topic: What is Bioethics? What areas does it involve? Name and describe at least three types of ethical theories and give *one* example for each.  **Due Date:** Sept 14th |
| Sept 15th –Sept 19th  Week 4 | **Topic of the Week**: Environmental Ethics and Business Ethics  **Reading Assignments**  i) Chapter 3 entitled ‘*Humans and the Natural World’* in Introduction to Bioethics by John Bryant et al.  See the documentary entitled “*A Dangerous Business*” at the URL Site: <http://www.pbs.org/wgbh/pages/frontline/mcwane/view/>  **Team II :** In the book entitled Risk: A Practical Guide for Deciding What’s Really Safe and What’s Really Dangerous in the World Around You. You cover the topics “**Water Pollution** pages 308-317 and **Solar Radiation** pages 299-308.  **Homework**  4th paper’s topic: How should we balance environmental ethics and business needs?  **Due Date:** Sept 21st |
| Sept 22nd –Sept 26th  Week 5 | **Topic of the Week**: Ethics of Human and Non human Animals  **Reading Assignments**  Chapter 4 entitled ‘*Humans and Non human Animals’* in Introduction to Bioethics by John Bryant et al.  **Team III:** In the book entitled Risk: A Practical Guide for Deciding What’s Really Safe and What’s Really Dangerous in the World Around You. You cover the topics “**Cellular Telephones and Radiation**-pages 76-81 and **Cellullar Telephone and Driving** pages 70-75.  **Homework**  5th paper’s topic: Animal Research- Necessary or Not? Take a position on the necessity of using animals for research.  **Due Date:** Sept 28th |
| Sept 29th- Oct 3rd  Week 6 | **Topic of the Week**: Biotechnology and Ethics  **Reading Assignments**  Chapter 5 entitled ‘*Biotechnology and Bioethics”* in Introduction to Bioethics by John Bryant et al.  Chapter 6 entitled ‘*Applications of Genetic Modification”* in Introduction to Bioethics by John Bryant et al.  Handout entitled ‘Ethics for Everyone’ by Arthur Dobrin (A Previous Reading Material)  In **Team VI :** In the book entitled Risk: A Practical Guide for Deciding What’s Really Safe and What’s Really Dangerous in the World Around You. You cover the topics “**Motor Vehicles** pages 127-135 and **School Buses** pages 135-139.  **No Papers are due** |
| Oct 6th-Oct 10th  Week 7 | **Topic of the Week**: Genes and Bioethics  **Reading Assignments**  Chapter 7 “Human Genes and the Human Genome Project” *”* in Introduction to Bioethics by John Bryant et al.  Chapter 8 “Genes-*The Wider Issues*” in Introduction to Bioethics by John Bryant et al.  **Team V:** In the book entitled Risk: A Practical Guide for Deciding What’s Really Safe and What’s Really Dangerous in the World Around You. You cover the topics “**Alcohol**-pages 39-47 and **Artificial Sweeteners** pages 48-53.  **Homework**  6th Paper’s Topic- Why is it important to protect genetic information?  **Due Date**: Oct 12th |

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| Oct 13th- Oct 17th  Week 8 | **Topic of the Week**: Who Owns the Information? Intellectual Property: Patenting, and Piracy of Genes  **Reading Assignments**  Chapter 8 “Genes-*The Wider Issues*” in Introduction to Bioethics by John Bryant et al.(Previous Reading Material).  ” Ownership Rights in Science-On Evolving Norms of Intellectual Property” by H. Zuckerman  and ‘Intelligent Property and Diverse Rights of Ownership in Science” by H. Zuckerman located at the URL Site: <http://www.garfield.library.upenn.edu/essays/v12p178y1989.pdf>  **Video:** NBC's Pete Williams shares details on the Supreme Court's unanimous decision that says human genes cannot be patented, but Synthetic DNA is patentable.  <http://usnews.nbcnews.com/_news/2013/06/13/18935727-supreme-court-says-genes-cant-be-patented-patient-advocates-and-researchers-cheer?lite>  **Team VI:** In the book entitled Risk: A Practical Guide for Deciding What’s Really Safe and What’s Really Dangerous in the World Around You. You cover the topics “**Genetically Modified Foods**-pages 109-116 and **Breast Implants** pages 329-336.  **Homework**  **7th Paper Topic**: Should we allow the patenting of genes?  **Due date**: Oct 19th |
| Oct 20th- Oct 24th  Week 9 | **Topic of the Week**: Cloning and Stem Cells  **Reading Assignments**  Chapter 9 “Cloning and Stem Cells” in Introduction to Bioethics by John Bryant et al.  Discussion on Current Science and Policy  **Team VII:** In the book entitled Risk: A Practical Guide for Deciding What’s Really Safe and What’s Really Dangerous in the World Around You. You cover the topics “**Medical Errors**-pages 376-383 and **X-Rays** pages 410-418.  **Homework**  8th Paper Topic: What are the risks involved with cloning and stem cell research? Are these technologies appropriate to use, and if so, what should the limitations be?  **Due date**: Oct 26th |
| Nov 3rd-Nov 7th  Week 10 | **Topic of the Week**: Reproductive Ethics  **Reading Assignments**  Reproduction- Chapter 10 “*The New Reproductive Technologies ’* in Introduction to Bioethics by John Bryant et al.  **Team VIII:** In the book entitled Risk: A Practical Guide for Deciding What’s Really Safe and What’s Really Dangerous in the World Around You. You cover the topics “**Sexually Transmitted Disease**-pages 392-401 and **Mammography** pages 369-375.  **Homework**  9th Paper Topic: How should we balance the interests of parents and society?  **Due date:** Nov 9th |
| Nov 10th-Nov 14  Week 11 | **Topic of the Week**: Research Ethics  **Reading Assignment :** Article entitled “The Tuskegee Syphilis Experiment” located at the URL site: http://paulrucker.com/activism/tuskegee\_experiment  **Team IX:** In the book entitled Risk: A Practical Guide for Deciding What’s Really Safe and What’s Really Dangerous in the World Around You. You cover the topics “**Vaccines**-pages 401-410 and **Human Immunodeficiency Virus** pages 363-369.  **Homework:**  10th paper’s topic: How did the Tuskegee Syphilis Experiment Violate the Hippocratic Oath and the Nuremburg Code of Ethics  **Date Due:** Nov 16th |
| Nov 17th-Nov 21st  Week 12 | **Final Project: Reviewing the students’ topics for final paper**  **Team X:** In the book entitled Risk: A Practical Guide for Deciding What’s Really Safe and What’s Really Dangerous in the World Around You. You cover the topics “**Overweight and Obesity**-pages 384-392 and **Heart Disease** pages 348-362.  **Homework:**  11th paper’s topic: Draft of *Background Section* for Final Paper  **Due date:** Nov 23rd |
| Nov 24th-Nov 28th  Week 13 | **Thanksgiving Fall Break Class Dismissed** |
| Nov 24th-Nov 28th  Week 14 | **Topic of the Week**: Enabling Technologies and their on Biosciences and Medicine: Part 1  **Team XI:** In the book entitled Risk: A Practical Guide for Deciding What’s Really Safe and What’s Really Dangerous in the World Around You. You cover the topics “**Microwave Ovens**-pages 121-124 **Food Irradiation** pages 104-108.  **Homework:**  Work on Final Paper |
| Dec 1st-Dec 5th  Week 15 | **Topic of the Week**: Enabling Technologies and their on Biosciences and Medicine: Part II  **Team XII:** In the book entitled Risk: A Practical Guide for Deciding What’s Really Safe and What’s Really Dangerous in the World Around You. You cover the topics **Mad Cow Disease** pages 117-121, **Tobacco** and **Antibiotic Resistance**.  **Homework:**  Submission of final Project (Paper)  **Due date:** Dec 4th |

\* Denotes that this syllabus is presented as a guide only and may be subject to change at the instructor’s discretion.