**Marshall University**

**Syllabus**

|  |  |
| --- | --- |
| Course Title/Number | IST 120 CONNECTIONS I (CT) |
| Semester/Year | **FALL SEMESTER 2015** |
| CRN |  |
| Days/Time | T/Th 2:00 pm - 3:15 pm |
| Location | BBSC 125 |
| Instructor | Elizabeth E. Murray, Ph.D. |
| Office | 241G Byrd Biotechnology Science Center (BBSC) |
| Phone | 304-696-3515 |
| E-Mail | murraye@marshall.edu |
| Office/Hours | Office hours: T/Th 9-11; M/W 9-10 and by appt. I may be in BBSC 211 (lab) so call or text my cell phone (304-617-6198). Please give your name and class if you text me so I know who you are. |
| 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:** From Course Catalog: “A Critical Thinking course that makes connections among science, technology, and society. Students learn to do research, summarize popular and scientific articles, and design an experimental or observational study.” |
| In this class, we will practice critical thinking by evaluating evidence in a variety of areas of controversy over science policy including toxicology of asbestos and lead, vaccinations, herbal remedies, genetically modified food, global warming, and extinction of endangered species. We will specifically discuss the phenomenon of scientific denialism and conspiracy theories. We will examine current controversies by debating the cost/benefit of enacting specific public policies or laws such as requiring body cameras for police, limiting trophy hunting of big game, and decriminalizing marijuana use. We will evaluate a these cases from diverse fields by identifying our assumptions, checking them for evidence or support, and applying that information to making thoughtful decisions. We will draw connections across disciplines and examine how involving multiple perspectives presents a more clear picture of a problem, allowing us to make more informed decisions about how to solve it.  This should be a fun, but challenging class. You will be asked to step outside of your comfort zone, challenge your deeply-held assumptions about controversial issues, and see things from a variety of different perspectives. You will *not* be expected to agree with me (or anyone else in the class) on every issue, or change your ideals. All that is expected is that you think critically, examine evidence and support for your claims, and be able to defend your positions. Since complex issues require collection of new data to evaluate hypotheses, students will research and write a grant proposal to address a scientific question. |

**Desired Objectives/Outcomes:**

Learning Objectives: By the end of this course the student should be able to apply concepts to think critically in the various core domains that comprise critical thinking.

Specifically, students should have an understanding of the following domains of Critical Thinking: Integrative Thinking; Inquiry-based Thinking; Information Literacy; Ethical and Civic Thinking; Creative Thinking; and Communication Fluency.

**Required Texts, Additional Reading, and Other Materials**

|  |
| --- |
| 1. Required Text: *The Sixth Extinction: An Unnatural History*. Elizabeth Korbett Macmillon 2014 2. Required Text: *Do You Believe in Magic? The Science and Nonsense of Alternative Medicine*. Paul A. Offit Harper Collins 2013 3. Keep up with what is happening in world, read The New York Times or similar newspaper online 4. Additional book chapters, handouts, technical papers and videos from instructor |

**Course Requirements / Due Dates**

|  |
| --- |
| 1. Reading quizzes/online chapter discussions will be given to assess that students are keeping up with reading. A reading quiz may be given any day a reading is assigned. 2. Random Fun Activities (RFA)- in class assignments for which you will be awarded participation points. 3. Participation is critical for this class. The instructor will assess participation in a number of ways including daily attendance. You cannot participate if you miss class. Instructor may call on you, request answers to questions in the group or break the group into smaller groups for discussion and presentation. Instructor also encourages students to ask questions about the reading and topic for discussion and to bring in relevant topics from the news. 4. There are three major assignments- a researched team debate, a written summary of a scientific paper and a scientific study proposal. The scientific study proposal is broken into six parts, with each part assessed points and having a distinct due dates. Specific dates are in the course schedule below and may change if circumstances dictate. Detailed assignment sheets will be posted as well as grading rubrics. 5. There are two speaking assignments- a debate and a short formal presentation of the grant proposal. A presentation requires an audience, so you will lose points if you skip these classes when others are presenting. Please see the specific assignment sheet for the grading matrix and participation information for the assignments. 6. There will be a short written essay exam in final exam time slot. The essay question will be provided in advance of the time. 7. Students will be allowed to complete up to 50 points of extra credit assignments. These assignments are all due by |

|  |  |  |
| --- | --- | --- |
| **Course Student Learning Outcomes** | **How Practiced in this Course** | **How Assessed in this Course** |
| Students will perform assignments as a multi-stage process incorporating drafts, feedback, and revision. | Assignment of Research Proposal in six parts: Meet with professor to discuss topic of study; Annotated bibliography; Literature Review; Outline study proposal; Oral summary of study;  Written study proposal | Final project assessment will be based on Content, Organization, Delivery and Style (discussed in more detail below.) |
| Students will demonstrate mastery of informational literacy by identifying unfamiliar terms and concepts and summarizing scientifically established and perceived risks. | Assigned readings from Kolbert and Offit, other assigned readings, films, in-class examples, discussions with other students, research methods assignments, written summary, Research Proposal. | Reading Quizzes and final reading quiz, evaluation of discussion participation by professor, Research Proposal assignment, written summary assignment. |
| Students will analyze ethical, historical, multicultural and/or international aspects of risk by applying concepts from Sagan and Offit to think more critically. | Assigned readings from  Kolbert and Offit, other assigned readings, films, in-class examples, discussions with other students. | Reading Quizzes, evaluation of discussion participation by professor. |
| Students will demonstrate written, oral and visual communication skills through written and oral assignments and presentation of a proposal for a scientific or social scientific study using appropriate visuals. | In-class examples, discussions, handouts for assignments, class presentations. | Final Presentation of Research Proposal, Written Research Proposal, Written summary assignment. |
| Students will evaluate the assumptions of sources and the reasoning of arguments about risk, applying critical thinking arguments relating to risk (inductive and deductive reasoning, evidence and fallacies). | In-class examples, discussions, assigned readings from Kolbert and Offit, other assigned readings, films, internet search assignment, and Research proposal assignment. | Research Proposal assignment, written summary assignment, Reading Quizzes, evaluation of discussion participation by professor, internet search assignment. |
| Students will use scientific and statistical principles to propose a scientific or social scientific study, critically evaluate previous studies, and design a new experimental or observational study. The student’s paper will link knowledge and skills derived from their research activities with knowledge acquired in class; students will define research goals and objectives for the proposed research based on relevant scholarship. | In-class examples, discussions, written summary, assigned readings from Kolbert and Offit, other assigned readings, films, Research Proposal assignment. | Research Proposal assignment |
| Students will discuss risk, demonstrating critical thinking and reflective judgment about risk, including historical, ethical, multicultural and international perspectives and assumptions. | In-class examples, discussions, written summary, Research Proposal. | Research Proposal assignment, Reading Quiz, evaluation of discussion participation by professor |
| Students will explain diverse perspectives on a contested issue and evaluate insights gained from different kinds of evidence reflecting scholarly and community perspectives. | In class examples, discussions, Team debate, annotated debate source bibliography | Team debate participation and annotated debate source bibliography |

**Grading Policy**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Evaluation of Learner Outcomes**: Major assignments will be evaluated using a three-part approach:  **Content, the substance of what you say or write.** This includes the topic, focus, how well the paper or presentation answers the assignment, the use and integration of supporting materials, understanding of principles and their application. Outside references should be properly cited.  **Organization, how you arrange what you say or write.** This includes effective introductions and conclusions, paragraphing, main points being clearly indicated and arranged and transitions logically connecting those points. Written work should be neat, succinct, clear, and use the appropriate terms.  **Delivery/Style, how you present the information in a speech or paper.**  For oral assignments, delivery will include both verbal aspects (vocal rate, clarity and variety, use of pauses, absence of distractions) and nonverbal aspects (professional manner, dress, eye contact, posture, use of gestures and movement and effective use of visuals).For written assignments, style will include sentence structure, use of language, proper grammar, spelling, syntax and preparation of paper.  All written course assignments (e.g., Course Project) should be typed in Times New Roman, 12-point font, double-spaced, with 1-inch margins and use APA format. In-class assignments are to be neatly written, signed by all group members, and submitted at the end of the class period. Team assignments will be given a team grade, but students will also be able to assess teamwork of the group.  **Point Breakdown:**   |  |  |  | | --- | --- | --- | | **Assignment** | **Points** | **Due Date** | | Reading Quizzes/Discussions | 100 | Weekly | | Final Essay Exam on Books | 50 | December 10 | | Attendance/Random Fun Activities | 100 | Daily | | Team Debate | 100 | 9/22 | | Team Debate Annotated Bibliography | 50 | 9/29 | | Written scientific article summary | 100 | 10/15 | | Meet with Dr. Murray about study topic | 50 | By appointment by 10/22 | | Annotated Bibliography | 75 | 11/3 | | Outline | 75 | 11/13 | | Oral presentation of study proposal | 50 | 12/1-12/3 | | Written Study Proposal | 250 | 12/3 | | Total | 1000 |  |   Final Grade scale:  A = 901-1000 pts Excellent work, goes significantly beyond class requirements.  B = 801-900 pts Very good work, meets or exceeds all class requirements.  C = 701-800 pts Average work, meets class requirements.  D = 601-700 pts Below average work, fails to meet one or more class requirements.  F = 600 pts or less Unacceptable work, fails to meet the minimum class standards. |
|  |

**Attendance Policy**

|  |
| --- |
| **Classroom Expectations**  Please be considerate of the other students in the class. It is up to you whether or not you choose to attend class and if you choose to pay attention. It is unfair, however, for you to negatively impact the ability of others students to learn. Please take care that your actions are considerate and do not detract from the learning environment. Once class has begun, please refrain from sending text messages, reading newspapers, or otherwise distracting from the class discussion.  **It is also expected that the opinions and backgrounds of all class members will be welcomed and respected.** All students are encouraged to participate in class discussion, but please address others with respect**.**  **Accessing Course Information**  Power-point slides, assignments, and other necessary class information will be posted on Blackboard. The website for Blackboard is marshall-bb.blackboard.com. It is imperative that you have access to Blackboard and that you check your MU email regularly**.**  **Academic Integrity**  Please be aware that academic integrity is taken very seriously at this university and in this class. Any type of cheating or plagiarism will not be tolerated. Plagiarism includes citing anyone else’s words or ideas in your own writing without giving credit. Additionally, self-plagiarism will not be tolerated in this course. This includes turning in assignments that have previously been used for another class or purpose. All assignments must be completed specifically for this course. More information regarding plagiarism is provided in the Marshall University handbook. However, if you have a question about any academic integrity issues, please contact me.  **By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy by 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**](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  **Class Participation**: A central part of this course is class participation. In order to participate effectively in the course, a shared body of knowledge is necessary, meaning that reading and other assignments will need to be completed before class so you are ready to discuss the day’s topic and participate in Random Fun Activities  **Attendance**: Is essential given the interactive nature of this course and the importance of class discussions.  There will be frequent in-class assignments and quizzes on the reading. Missing these will only be allowed with a university approved absence. Habitual lateness will also be penalized. Do not come to class and sleep, read the newspaper or text.  **Reading Assignments**: Students are expected to complete the reading for each class before class starts. There will be reading quizzes based on the content of the readings. I will be posting some discussion questions of the readings from the books in MU Online as well- and outline what level of participation is required for full participation points.  **Lateness Policy**: This class is preparation for the professional world you will all be entering. You will be expected to turn in assignments and complete presentations on the day you are scheduled. Students should turn in written work in MU Online by midnight on the day it is due. Unless the absence is a University-excused one, late assignments will be penalized by 10% for every week it is late.  **Extra Credit**: Quality extra credit opportunities will be posted. Some are in the syllabus but there will be others announced throughout the semester. Students can get up to 50 points of extra credit. |

**Course Outline:**

**Unit one: Making sense of science**

Discussion of critical thinking process

Discussion of case studies of scientific research controversies

Library/Internet research and evaluation of sources

Debate preparation and debate

**Unit two: Summarizing and synthesizing sources**

Evaluating quality of science

Summarizing research articles

How to review the scientific literature

**Unit three: Scientific and Social Scientific Studies**

How is Science Funded and regulated?

Hypotheses and proposals

Understanding scientific studies and statistics

Designing and presenting a scientific or social scientific study

**Course Schedule**

**IST 120 Connections I – Fall 2014 – Semester Schedule :**This schedule and the topics may change during the course of the semester. The reading assignments may be supplemented with other readings.

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Topic** | **Reading due** | **Assignments Due** |
| **August 25** | **Introduction to Class** |  |  |
| **August 27** | **Relative Risk** |  |  |
| **September 1** | **Public Health and Risk** | **Offit 1-24** |  |
| **September 3** | **Risk Reduction Matrix Exercise and accidents** | **Offit 25-46** |  |
| **September 8** | **How to Debate**  **Topics Assigned** | **Offit 47-64** | **Debate topics assigned** |
| **September 10** | **How to Research Science Controversies** | **Offit 65-93** |  |
| **September 15** | **Asbestos** | **Offit 95-110** |  |
| **September 17** | **Lead** | **Offit 128-139** |  |
| **September 22** | **Debates** | **Offit 140-162** | **Debates** |
| **September 24** | **Debates** | **Offit 163-173** | **Debates** |
| **September 29** | **Autism and Vaccination Video** | **Offit 173-196**  **Believing in Treatments that do not work.** | **Articles for summaries assigned** |
| **October 1** | **How to read and summarize a scientific article** | **Offit 197-222** | **Extra Credit: Play Pandemic** |
| **October 6** | **Human Experimentation** | **Offit 223-257** | **Extra Credit- take the human experimentation course at CITI site** |
| **October 8** | **Prohibition- Alcohol and Marijuana** | **Kolbert Prologue 1-4; The Sixth Extinction 4-22** |  |
| **October 13** | **Major Project Assignment explained** | **Kolbert The Mastodon’s Molars 23-46** | **Decision Grid on global warming** |
| **October 15** | **Merchants of Doubt Film** | **Kolbert :The Original Penguin 47-69** | **Scientific Article Summary due** |
| **October 20** | **Science Denialism** | **Kolbert: The Luck of the Ammonites 70-91** |  |
| **October 22** | **Global Warming** | **Kolbert: Welcome to the Anthropocene 92-110** | **Topic Due** |
| **October 27** | **Global Warming** | **Kolbert: The Sea Around Us 111 -124** |  |
| **October 29** | **Discussion of Extinction** | **Kolbert: Dropping Acid 125-147** |  |
| **November 3** | **Eye witness testimony** | **Kolbert: The Forest and the Trees 148-172** | **Annotated Bibliography Due** |
| **November 5** | **Kennedy Assassination video and discussion** | **Kolbert: Islands on Dry Land 173-192** |  |
| **November 10** | **Aliens and conspiracy theories** | **Kolbert: The New Pangaea 193-216** |  |
| **November 12** | **Video Games and Violence** | **Kolbert: The Rhino Gets an Ultrasound 217-235** | **Outline Due** |
| **November 17** | **GMO foods- safety and labeling** | **The Madness Gene 236-258** |  |
| **November 19** | **Tomato Sauce and Processed Food** | **The Thing with Feathers 259-272** |  |
| **November 24** | **Thanksgiving Break** | | |
| **November 26** |
| **December 1** | **Presentations** | **Oral Presentation Round 1** | **Final date for extra credit** |
| **December 3** | **Presentations** | **Oral Presentation Round 2** | **Final project due** |
| **December 10** | **Final Quiz** |  |  |

**Dr. Murray’s class schedule Fall 2015**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Time** | **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** |
| **8** |  |  |  |  |  |
| **9** | **office** | **office** | **office** | **office** | **office** |
| **10** | **Lab** | **Lab** | **Lab** | **Lab** | **Lab** |
| **11** |  |  |  |  |  |
| **12** |  | **IST 120**  **12:30-1:45** | **Armstead Research Meeting** | **IST 120**  **12:30-1:45** | **Faculty Meeting** |
| **1** | **IST 340** | **IST 340** | **IST 340** |
| **2** | **1-2:45** | **IST 120** | **1-2:45** | **IST 120** | **1-2:45** |
| **3** |  | **2-3:20** |  | **2-3:20** |  |
| **4** | **HON 480** |  | **HON 480** |  |  |
| **5** | **4-5:15** |  | **4-5:15** |  |  |
| **6** |  |  |  |  |  |

**Possible Debate Topics:**

Should trophy hunting of African animals be permitted (like Cecil the Lion or ivory bans)

Should Recreational Marijuana Be Legalized in West Virginia?

Should all law enforcement officers use body cameras?

Should we label GMO food?

Other possible topics