



**SENATE COMMITTEE ON CURRICULAR AFFAIRS**  
**COURSE SUBMISSION AND CONSULTATION FORM**

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**Principal Faculty Member(s) Proposing Course**

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Name	User ID	College	Department
JONATHAN MARKS	jhm20	Liberal Arts (LA)	Not Available
CHRISTOPHER ZORN	cuz10	Liberal Arts (LA)	Not Available

Academic Home: Liberal Arts (LA)

Type of Proposal:  Add  Change  Drop

Message for Reviewers:

**Course Designation**

(BIOET 401Q) Science, Ethics, Policy, and Law

**Course Information**

Cross-Listed Courses:

Prerequisites:

5th Semester standing

Corequisites:

Concurrents:

Recommended Preparations:

Abbreviated Title: Science, Ethics, Policy & Law  
Discipline: General Education  
Course Listing: Inter-Domain

**Special categories for Undergraduate (001-499) courses**

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**Foundations**

- Writing/Speaking (GWS)
- Quantification (GQ)

**Knowledge Domains**

- Health & Wellness (GHW)
- Natural Sciences (GN)
- Arts (GA)
- Humanities (GH)
- Social and Behavioral Sciences (GS)

**Additional Designations**

- Bachelor of Arts
- International Cultures (IL)
- United States Cultures (US)
- Honors Course
- Common course number - x94, x95, x96, x97, x99
- Writing Across the Curriculum

First-Year Engagement Program

First-Year Seminar

#### Miscellaneous

Common Course

#### GE Learning Objectives

GenEd Learning Objective: Effective Communication

GenEd Learning Objective: Creative Thinking

GenEd Learning Objective: Crit & Analytical Think

GenEd Learning Objective: Global Learning

GenEd Learning Objective: Integrative Thinking

GenEd Learning Objective: Key Literacies

GenEd Learning Objective: Soc Resp & Ethic Reason

#### Bulletin Listing

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Minimum Credits:	3
Maximum Credits:	3
Repeatable:	NO
Department with Curricular Responsibility:	Bioethics (UPLA_BIOET)
Effective Semester:	Upon Approval
Travel Component:	NO

#### Course Outline

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##### A brief outline or overview of the course content:

This course explores the ethical, policy, and legal implications of science, and the implications of science for ethics, policy, and law.

##### A listing of the major topics to be covered with an approximate length of time allotted for their discussion:

###### PART I: INTRODUCTION AND INTERSECTIONS

Introduction to Science (Week 1: 2 hrs 30 mins): scientific norms and practice

Introduction to Ethics (Week 2: 2 hrs 30 mins): theories and methods in ethics

Science and Ethics (Week 3: 2 hrs 30 mins): toward a more comprehensive ethics for scientists

Introduction to Law and Policy (Week 4: 2 hrs 30 mins): taxonomy of law, law and society, patent law, policy processes

Science in the Courts (Week 5: 2 hours 30 mins): law of evidence, death penalty, DNA and neuroscience in the courts

Scientists in Policy Debates (Week 6: 2 hrs 30 minutes): scientists as advocates or "honest brokers"

Science Education, Communication, and Public Trust (Week 7: 2 hrs 30 mins): science literacy, and scientific hype

Science as a Profession, and Citizen Science (Week 8: 2 hrs 30 mins): roles and responsibilities

Science in Regulatory and Policy Processes (Week 9: 2 hours 30 mins): risk and scientific uncertainty

The Influence of Social Science on Ethics, Policy, and Law (Week 10: 2 hrs 30 mins)

###### PART II: SPECIAL TOPICS (Week 11 - 15: topics may vary according to instructor expertise):

Big Data: Privacy, Politics, and Business

Science and War: Ethical and Legal Constraints

Climate Science, Denial, and Doubt

Forensic Science: The Promise and Perils

Food Science, Nutrition Policy, and Obesity

Environment, Toxins, and Health

The Ethics of "Nudging"

Gun Violence and Gun Control

Research Transparency, Reproducibility, and Replication

Academy-Industry Relations and the Commercialization of Science

The Neuroscience of Moral and Criminal Responsibility

Pharmaceutical Licensing and Access to Essential Medicines

##### Course Description:

This course explores the ethical, policy, and legal implications of science, and the implications of science for ethics, policy, and law. The course provides an introduction to scientific norms and practice; an introduction to the theories and methods employed in ethical analysis; an overview of ethics for scientists (including, but not limited to, falsification, fabrication, and plagiarism, and the protection of human and non-human animal participants); and an introduction to law and policy. In addition, the course will explore the use of science in the courts; the role of scientists in policy debates (whether they should be advocates or "honest brokers"); science education policy; science communication and scientific hype; the roles and responsibilities of professional scientists and citizen scientists; science in regulatory and policy processes; the assessment and management of risk; policymaking in the face of scientific uncertainty; and what ethics, policy, and law might learn from recent developments in social and behavioral science. In its examination of law and policy, the course will explore international and comparative perspectives. The course will also explore a variety of special topics (that may vary according to the expertise of the instructor and the interests of the students). These topics may be drawn from a variety of spheres: medicine and public health, food and nutrition science, neuroscience, agricultural science,

climate science, and the social sciences. Special topics may include the ethical and policy implications of "big data"; the ethics of science in war and as a instrument of harm; climate science, climate change denial, and ethical decision-making in the face of scientific uncertainty; the promises and perils of forensic science; the role of food science in nutrition policy; the regulation of environmental toxins; the use of behavioral science and "nudging" in public health policy; gun violence and gun control policy; contemporary challenges related to transparency, reproducibility and replication in science; the commercialization of science, and an ethical and policy assessment of the so-called "Triple Helix" of government-academy-industry relations; and the neuroscience of moral and criminal responsibility.

**The name(s) of the faculty member(s) responsible for the development of the course:**

| Name: CHRISTOPHER ZORN (cuz10)

Title:

Phone:

Address:

Campus: UP

City:

Fax:

| Name: JONATHAN MARKS (jhm20)

Title:

Phone:

Address:

Campus: UP

City:

Fax:

## Course Justification

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**Instructional, Educational, and Course Objectives:**

**This section should define what the student is expected to learn and what skills the student will develop.**

Students will be able to:

explain ethical, policy, and legal implications of scientific research and development;  
explain understanding of the ethical, policy, and legal implications of new technologies and applications;  
apply ethical theories and methods to scientific practice, processes, and products;  
construct ethical, policy, and legal arguments that engage with science.

A suite of evaluation methods (listed below) will assess these competencies.

**Evaluation Methods:**

**Include a statement that explains how the achievement of the educational objective identified above will be assessed.**

**The procedures for determining students' grades should be specifically identified.**

Evaluation methods may include assessment of: oral presentations; participation in class discussion; participation in moot court / mock trials; participation in mock policy fora; written responses to case studies; policy paper assignments; essays, and research papers. Although the precise percentages may vary according to instructor, a sample breakdown would be:

Attendance and participation in class discussion = 15%

Participation in Policy Debates and Moot Court Trials = 15%

Midterm assignment (Written Response to Case Study) = 30%

Final assignment (Research Paper) = 40%

Total = 100%

**Relationship/Linkage of Course to Other Courses:**

**This statement should relate the course to existing or proposed new courses. It should provide a rationale for the level of instruction, for any prerequisites that may be specified, or for the course's role as a prerequisite for other courses.**

This course was supported by a Gen Ed seed grant. We have proposed the course at the 400 level instead of the 300 level for several reasons:

- (1) The course would satisfy both the 400 level elective course and ethics course requirement in the Bioethics and Medical Humanities Undergraduate Minor.
- (2) As a 400 level course, this class could be taken by graduate students in the dual-title Ph.D. in Bioethics whose expertise straddles humanities and social sciences.
- (3) Honors students would benefit from the participation of these interdisciplinary graduate students in the class.
- (4) The course would meet the 400 level course requirement for the an option in legal studies, government service, and public policy in the B.S. Science major.
- (5) The 400 level is warranted but the complexity of the topics, the length of the weekly readings, and the written evaluation methods.
- (6) The Bioethics Program does not currently offer 300 level courses.

**Relationship of Course to Major, Option, Minor, or General Education:**

**This statement should explain how the course will contribute to the major, option, or minor and indicate how it may function as a service course for other departments.**

The course will serve as an elective course for the Bioethics and Medical Humanities Minor, and for the Bioethics Dual-Title Ph.D.

**A description of any special facilities:**  
ITEC Room.

**Frequency of Offering and Enrollment:**

This course will be offered twice per year. Consistent with other upper level courses in bioethics and upper level honors courses with an ethics or philosophy emphasis, this course will be taught as a seminar course capped at 25. This size promotes student participation in ethical discussion, as well as role-playing and other forms of experiential learning. If both faculty members proposing the course each teach one section per year, this will provide slots for 50 Honors students.

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**Alignment with General Education Objectives**

**EFFECTIVE COMMUNICATION** – the ability to exchange information and ideas in oral, written, and visual form in ways that allow for informed and persuasive discourse that builds trust and respect among those engaged in that exchange, and helps create environments where creative ideas and problem-solving flourish.

**KEY LITERACIES** – the ability to identify, interpret, create, communicate and compute using materials in a variety of media and contexts. Literacy acquired in multiple areas, such as textual, quantitative, information/technology, health, intercultural, historical, aesthetic, linguistic (world languages), and scientific, enables individuals to achieve their goals, to develop their knowledge and potential, to lead healthy and productive lives, and to participate fully in their community and wider society.

**CRITICAL AND ANALYTICAL THINKING** – the habit of mind characterized by comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating a conclusion. It is the intellectually disciplined process of conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action.

**INTEGRATIVE THINKING** – the ability to synthesize knowledge across multiple domains, modes of inquiry, historical periods, and perspectives, as well as the ability to identify linkages between existing knowledge and new information. Individuals who engage in integrative thinking are able to transfer knowledge within and beyond their current contexts.

**CREATIVE THINKING** – the capacity to synthesize existing ideas, images, or expertise in original ways and the experience of performing, making, thinking, or acting in an imaginative way that may be characterized by innovation, divergent thinking, and intellectual risk taking.

**GLOBAL LEARNING** – the intellectually disciplined abilities to analyze similarities and differences among cultures; evaluate natural, physical, social, cultural, historical, and economic legacies and hierarchies; and engage as community members and leaders who will continue to deal with the intricacies of an ever-changing world. Individuals should acquire the ability to analyze power; identify and critique interdependent global, regional, and local cultures and systems; and evaluate the implications for people's lives.

**SOCIAL RESPONSIBILITY AND ETHICAL REASONING** – the ability to assess one's own values within the social context of problems, recognize ethical issues in a variety of settings, describe how different perspectives might be applied to ethical dilemmas, and consider the ramifications of alternative actions. Individuals should acquire the self-knowledge and leadership skills needed to play a role in creating and maintaining healthy, civil, safe, and thriving communities.

**What component(s) of the course will help students achieve the General Education Learning Objectives covered in the course? Provide evidence that students in the course have adequate opportunities to achieve the identified learning objectives.**

Critical and Analytical Thinking: Readings in ethics, political theory, and legal theory will promote critical thinking, as will evaluation methods including essays and policy papers.

Integrative Thinking: In discussion of the assigned readings, students will apply ethical theory, political theory, and legal theory to the practice and methods of science.

Social Responsibility and Ethical Reasoning: The course materials directly address the social and ethical responsibilities of scientists, and structured class discussion will help students develop their ethical reasoning skills as they explore the ethical implications of scientific research and practice.

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**How will students be assessed to determine their attainment of the Learning Objective(s) of General Education covered in this course? This assessment must be included as a portion of the student's overall performance in this course.**

Class discussion, oral presentations, participation in mock trials and policy debates, the written analysis of case studies, drafting of policy papers, and essay writing will be used to assess critical and analytical thinking, integrative thinking, ethical reasoning skills and understanding of ethical and social responsibility of scientists. Examples of potential assessments:

Policy debate addressing (a) on whom the burden of proof should fall, and (b) what the standard of proof should be, when a community expresses concerns about adverse health effects that may be due to toxins from a former military base.

Mock trial in which students present arguments for and against the admission of scientific evidence, such as functional MRI evidence, in determining the guilt of a criminal defendant or in the sentencing phase of a criminal trial.

Case study exploring whether a food science department in a research university should accept funding or sponsorship from a food company that has a commercial interest in the outcome of the research and, if so, under what conditions.

Policy paper addressing individual and/or institutional financial conflicts of interest. The paper would propose a policy, and justify the proposal with reference to academic literature and relevant empirical research.

Research essay exploring prize funds and other alternatives to patents that would create incentives for pharmaceutical research while ensuring that the products of this research are available to economically disadvantaged populations.

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# General Education Domain Criteria

General Education Designation: Inter-Domain

## GH Criteria

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- Explain the methods of inquiry in humanities fields and describe how the contributions of these fields complement inquiry in other areas
- Demonstrate competence in critical thinking about topics and texts in the humanities through clear and well-reasoned responses
- Critically evaluate texts in the humanities— whether verbal, visual, or digital— and identify and explain moral or ethical dimensions within the disciplines of the humanities
- Demonstrate knowledge of major cultural currents, issues, and developments through time, including evidence of exposure to unfamiliar material that challenges their curiosity and stretches their intellectual range
- Become familiar with groups, individuals, ideas, or events that have influenced the experiences and values of different communities

**What components of the course will help students achieve the domain criteria selected above?**

Assigned readings in ethics, legal theory, political theory, history, and STS (science, technology, and society) will enable the students to develop an understanding of the methods of inquiry in humanities, and apply these methods to both critique and enhance scientific practice. The ethical analysis of these readings and the assignments (including essays, case studies, and policy papers) will enable students to demonstrate competence in critical thinking about science and the ways it intersects with ethics, law, and policy—as will in-class role-playing exercises such as town hall meetings, and moot court trials.

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## GS Criteria

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- Explain the various methods of inquiry used in the social and behavioral sciences and describe how the contributions of these fields complement inquiry in other areas
- Identify and explain major foundational theories and bodies of work in a particular area of social and behavioral sciences
- Describe the ways in which many different factors may interact to influence behaviors and/or institutions in historical or contemporary settings
- Explain how social and behavioral science researchers use concepts, theoretical models and data to better understand and address world problems
- Recognize social, cultural, political and/or ethical implications of work in the social and behavioral sciences

**What components of the course will help students achieve the domain criteria selected above?**

Social and behavioral science will be covered by the components of the course addressing political theory, and the theory and practice of policymaking. It will also be covered by the exploration of what ethics might learn from recent research on ethical reasoning, behaviors, and the influence of external factors on both. Case study analysis will include an exploration of situational, systemic, and environmental factors that influence ethical decision-making, scientific practices, and the development of law and policy.

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## Integrative Studies

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**Explain how the intellectual frameworks And methodologies of the two Knowledge Domains will be explicitly addressed in the course and practiced by the students.**

By its very nature, a course in science, ethics, policy, and law will necessarily explore the intellectual frameworks and methodologies of both the humanities, and the social and behavioral sciences. To provide just a couple of examples, students enrolled in the course will have opportunities to explore the implications of ethics for scientific practice, and to consider what ethics might learn from recent work in social and behavioral sciences about the nature of ethical reasoning and the influence of external factors on human behavior.

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**Demonstrate that each Of the two domains will receive approximately equal attention, providing evidence from course topics, assignments, or other course components, and that students will integrate material from both domains.**

Given the topic of the course (the intersections of science, ethics, policy, and law), students will necessary integrate material from both humanities and social and behavioral sciences. Since it is impossible to consider the ethical, policy and legal implications of science without developing an understanding of the science itself, the domains will necessarily receive balanced attention and consideration.

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**Briefly explain the staffing plan. Given that each Inter-Domain course is approved for two Knowledge Domains, it will be taught by an instructor (or instructional team) with appropriate expertise in both domains.**

The course will initially be taught jointly by the two faculty members proposing the course. These faculty have expertise in ethics, law, and policy. They will invite guest instructors from across the university to share their expertise in topics related to medicine and public health, food and nutrition science, neuroscience, agricultural science, climate science, and the social sciences. After the first year the course is offered, the two faculty members proposing the course will each teach a separate section of the course. Other faculty and graduate students in the dual-title Ph.D. program in bioethics may also teach the course when the faculty members proposing the course are unable to do so.

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**Describe the assessments that will be used to determine students' ability to apply integrative thinking.**

Participation in Class Discussion.

Oral Presentations in Class.  
Participation in Mock Trials and Policy Debates.  
Written Responses to Case Studies.  
Drafting Policy Papers.  
Research Essays.

Examples of potential assessments:

Policy debate addressing (a) on whom the burden of proof should fall, and (b) what the standard of proof should be, when a community expresses concerns about adverse health effects that may be due to toxins from a former military base.

Mock trial in which students present arguments for and against the admission of scientific evidence, such as functional MRI evidence, in determining the guilt of a criminal defendant or in the sentencing phase of a criminal trial.

Case study exploring whether a food science department in a research university should accept funding or sponsorship from a food company that has a commercial interest in the outcome of the research and, if so, under what conditions.

Policy paper addressing individual and/or institutional financial conflicts of interest. The paper would propose a policy, and justify the proposal with reference to academic literature and relevant empirical research.

Research essay exploring prize funds and other alternatives to patents that would create incentives for pharmaceutical research while ensuring that the products of this research are available to economically disadvantaged populations.

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### Campuses That Have Offered ( ) Over The Past 4 Years

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semester	AB	AL	BK	BR	BW	CR	DS	ER	FE	GA	GV	HB	HN	HY	LV	MA	NK	PC	SH	SL	UP	WB	WC	WS	XC	XP	XS	YK
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### Potential Impact

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#### Pre-Requisites

is *listed as a pre-requisite or concurrent course* for the following courses:

Note: Not all courses may be listed here, due to lionpath requirement incompleteness.

No pre-requisites or concurrent courses found

# BIOET 401Q

## SCIENCE, ETHICS, POLICY, AND LAW

DRAFT SYLLABUS  
Spring 2018

**Instruct or:** TBD<sup>1</sup>

**Class:** TBD

**Office Hours:** TBD

**Prerequisite s:**

5<sup>th</sup> Semester Standing

**Course Attributes:** GenEd Inter-Domain Course GH/GS  
(Humanities, and Social and Behavioral Sciences)

### **Relationship to Other Courses and Programs:**

This course satisfies both the Ethics Course requirement and the 400-level course requirement in the undergraduate Bioethics and Medical Humanities Minor. The course also counts as an elective course for the Bioethics Dual-Title Ph.D. in Bioethics.

### **Outline:**

This course explores the ethical, policy, and legal implications of science, and the implications of science for ethics, policy, and law. The course provides an introduction to scientific norms and practice; an introduction to the theories and methods employed in ethical analysis; an overview of ethics for scientists (including, but not limited, to falsification, fabrication, and plagiarism, and the protection of human and non-human animal participants); and an introduction to law and policy. The course also explores the use of science in the courts; the role of scientists in policy debates (whether they should be advocates or "honest brokers"); science education policy; science communication and scientific hype; the roles and responsibilities of professional scientists and citizen scientists; science in regulatory and policy processes; the assessment and management of risk; policymaking in the face of scientific uncertainty; and what ethics, policy, and law might learn from recent developments in social and behavioral science. In its examination of law and policy, the course will explore international and comparative perspectives. The course will also explore a variety of special topics that may vary according to the expertise of the instructor and the interests of the students in the course.

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<sup>1</sup> This syllabus was drafted by Jonathan Marks. The syllabus may vary depending on the instructor.

## General Education Learning Objectives

- Social Responsibility and Ethical Reasoning
- Critical and Analytical Thinking
- Integrative Thinking

## Course Learning Objectives

- (1) Students will develop an understanding of the ethics and norms of scientific practice.
- (2) Students will develop an understanding of the role that science can play in public policy and law.
- (3) Students will develop ethical problem-solving skills, and learn how to apply these skills to ethical problems related to science and technology.
- (4) Students will explore and gain a deeper understanding of a topic at the intersections of science, ethics, policy, and law by conducting independent research and writing a research paper.

## Course Texts

***Readings and materials for most weeks will be posted on Canvas.***

You should expect to do a substantial amount of reading each week. This will involve skimming some pieces in order to identify what is **important**—an essential skill for any informed participant in a deliberative democracy, not just for college graduates. In the initial weeks, the instructor will provide some instructions to help you with the readings. But in later weeks, you will be expected to develop reading and comprehension skills; to identify for yourself what may be significant in the readings; and to make connections among the readings—including readings assigned for previous classes in the course.

You should bring assigned readings to class in either printed or electronic format, and you should be prepared to refer to them during class discussion. Some readings may not be discussed in detail in class. But they have all been assigned for a reason. For example, some readings will enhance your understanding of other readings.

## Course Assessment

- **Attendance and participation in class discussion = 15%**

The class will be run as a seminar. Students are expected to contribute substantially to class discussion. Your contributions should be well thought out, and should demonstrate a knowledge and understanding of the readings. You should do more than simply state your own view. You should critique the views of the authors you have read, guest presenters, your instructor, and classmates.

Where appropriate, you should define your position relative to theirs. As with any class discussion, you should be respectful of others with whom you disagree.

You will write a short response to at least six assigned readings. Each response will contain a sentence or two addressing each of the following in relation to at least one reading assigned for each week: (a) explain why you agree with one argument or other aspect of the reading, (b) explain why you disagree with one argument or other aspect of the reading, and (c) articulate one question about the reading or the material addressed in the reading. You will share this with your instructor and fellow students *before* class. The primary purpose of this response process is to prepare you to participate in class discussion, and to help the instructor assess your understanding of the readings. Although these will not be individually graded, the instructor will take them into account—along with your oral contributions to class—when calculating your total class participation grade.

Part of our discussion each week will be devoted to an analysis of science-related ethical, legal, or policy issues related in the news. You should read the *New York Times* daily, and search other reputable publications for stories to share in class.

Students can receive extra credit in two ways. First, you may earn extra credit for emailing relevant news stories to the instructor and your classmates in advance of class, and articulating in no more than one page the ethical issues that each story raises and how these issues might be addressed. Second, you may earn extra credit for attending lectures, conference sessions, or panels in bioethics or related fields, provided that you submit a two-page paper with your analysis of and response to each event. These events will be designated by or agreed with the instructor in advance. You can look for potential events on the Rock Ethics Institute's website at <http://rockethics.psu.edu/events>. Do not wait until the end of the semester to do extra credit responses. Students should produce (in total) at least 5 or 6 pages of extra credit work that make reference to readings, theories, and concepts from the class if they hope to make a difference to their grade. But do not expect extra credit to transform a C into an A! Extra credit is most likely to help if your overall grade is on the cusp of two grades, e.g., an A- and a B+.

- **Participation in In-Class Policy Debates and Moot Court Trials = 15%**

Every student will have the opportunity to participate in mock policy debate (e.g. a town hall meeting), moot court trial, or ethics consultation on an issue related to science. Each student will be required to write a short response paper (three to

four pages) within a week of participating in this event. The paper will review the ethical, policy, and legal issues that arise; defend the argument(s) the student made during the role-playing exercise; and address the major counter-arguments.

- **Midterm Assignment : Written Response to Case Study = 30%**

This written assignment will draw on the material studied thus far, and will be designed to assess your ethical reasoning skills. It will be distributed on **[insert date]**, and will be due by class on **[insert date]**. Students will be provided a rubric in advance that will help them satisfy the instructor's expectations. The rubric will be applied flexibly by the instructor to permit the grader to reward a student who excels in one category while falling short in another.

- **Final Assignment: Research Paper = 40%**

You are required to produce a capstone project approximately 10 – 12 pages in length (double-spaced) that addresses a significant topic at the intersection of science, ethics, policy, and law. You are expected to conduct substantial independent research for this paper. Your paper is due by **[insert date]**.

You should submit a two-page proposal/outline for your capstone project (in narrative, not note format) by **[insert date]**. You should describe your project clearly, articulating the core issues and arguments, and citing key publications that have inspired your project and on which you intend to draw. The outline will allow the instructor to provide feedback to you at an early stage.

Students will be provided a rubric in advance that will help them satisfy the instructor's expectations. The rubric will be applied flexibly by the instructor to permit the grader to reward a student who excels in one category while falling short in another.

## Course Policies

- **Submission of written work**

- Written work should be in Times Roman 12-font, double-spaced, and must have a bibliography or list of works cited. You may also use footnotes. Your bibliography and footnotes can be in any recognized format (such as APA, MLA, Chicago, Harvard Blue Book) as long as you are consistent. You should cite page numbers wherever possible so the reader can go straight to the relevant text and verify your interpretation of the text.
- Papers should be handed to the instructor in class or left in the instructor's mailbox in **[insert location]**. If you are unable to deliver a hard copy, you may make arrangements with the instructor for electronic submission.

- **Assessment of Written Work**

The grading of papers in ethics is more qualitative than mathematical. But a student wishing to get an A will need to do all of the following: (i) make a persuasive argument; (ii) refer closely to the relevant materials which include, in the case of the research project, relevant books and scholarly articles that the student identifies in the course of independent research; (iii) demonstrate an understanding of these materials; and (iv) show how the materials support the student's argument and, if the materials do not support the student's argument, show how the counter-arguments might be addressed. Quality of writing is important. You may think clearly but this will not be apparent to your instructor unless you write clearly. So please re-read written work before you hand it in.

- **Late Policy**

Papers and assignments may be lowered half a grade for every day (or part of a day) that they are late *unless* there are exceptional circumstances.

- **Attendance Policy**

Attendance is an essential component of class participation, and of the learning experience in this course. If you have good reason to miss a class, please seek approval from your instructor in advance whenever possible. The instructor will provide you with a short written assignment so you can make up for your absence. Such assignments may include writing a response to additional readings. In the event that you have three or more absences without good reason, your instructor will determine the appropriate penalty. Potential penalties range from requiring a substantial additional writing assignment to the posting of a fail grade.

- **Academic Integrity**

Penn State defines academic integrity as the pursuit of scholarly activity in an open, honest and responsible manner. All students should act with personal integrity, respect other students' dignity, rights and property, and help create and maintain an environment in which all can succeed through the fruits of their efforts (Faculty Senate Policy 49-20). Dishonesty of any kind will not be tolerated in this course. Dishonesty includes—buts not limited to—cheating, plagiarizing, fabricating information or citations, facilitating acts of academic dishonesty by others, having unauthorized possession of examinations or assignments, submitting work of another person, submitted work previously used or submitted without informing the instructor, or tampering with the work of other students. Students who are found to be dishonest will receive academic sanctions and be reported to the University's Judicial Affairs office for possible further disciplinary sanctions. If you have any doubt about what constitutes plagiarism or academic dishonesty, please ask the instructor *before* you submit any written work.

- **Students with Disabilities**

Penn State welcomes students with disabilities into the University's educational programs. If you have a disability-related need for modifications or reasonable accommodations in this course, please contact the Office for Disability Services, ODS, located at 116 Boucke Building at 1-814-863-1807 (V/TTY). For further information regarding ODS, please visit their website at [www.equity.psu.edu/ods](http://www.equity.psu.edu/ods). Instructors should be notified as early as possible about the need for modification or reasonable accommodations so that timely adaptations can be made.

## **Class Schedule**

### **Part I: Introduction to Science, Ethics, Policy, Law, and their Intersections**

Week 1: Introduction to Science: scientific norms and practice

Week 2: Introduction to Ethics: theories and methods in ethics

Week 3: Science and Ethics: toward a more comprehensive approach

Week 4: Introduction to Law and Policy

Week 5: Science in the Courts

Week 6: Scientists in Policy Debates: scientists as advocates or "honest brokers"

Week 7: Science Education, Communication, and Public Trust

Week 8: Science as a Profession, and Citizen Science

Week 9: Science in Regulatory and Policy Processes: risk and scientific uncertainty

Week 10: The Influence of Social Science on Ethics, Policy, and Law

### **PART II: Selected Special Topics**

Weeks 11-15: Topics may vary according to instructor expertise and student interest. These will be selected by the instructor in consultation with students enrolled in the class.

Big Data: Privacy, Politics, and Business

Science and War: Ethical and Legal Constraints

Climate Science, Denial, and Doubt

Forensic Science: The Promise and Perils

Food Science, Nutrition Policy, and Obesity

Environment, Toxins, and Health

The Ethics of "Nudging"

Gun Violence and Gun Control

Research Transparency, Reproducibility, and Replication

Academy-Industry Relations and the Commercialization of Science

The Neuroscience of Moral and Criminal Responsibility

*Research Paper Proposal Due: [Insert Date]*

*Midterm Assignment Due: [Insert Date]*

*Capstone Project Due: [Insert Date]*