I. ASCRC General Education Form

<table>
<thead>
<tr>
<th>Group</th>
<th>VIII Ethics and Human Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dept/Program</td>
<td>GEOS</td>
</tr>
<tr>
<td>Course Title</td>
<td>Science and Society</td>
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<tr>
<td>Prerequisite</td>
<td>none</td>
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<tr>
<td>Credits</td>
<td>3</td>
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II. Endorsement/Approvals

Complete the form and obtain signatures before submitting to Faculty Senate Office

| Instructor       | Rebecca Bendick             |
| Phone / Email    | 5774 bendick@mso.umt.edu    |
| Program Chair    | W. Woessner                |
| Dean             |                             |

III. Description and purpose of the course:

General Education courses must be introductory and foundational. They must emphasize breadth, context, and connectedness; and relate course content to students’ future lives: See Preamble: [http://www.umt.edu/facultysenate/gened/GEPreamble_final.htm](http://www.umt.edu/facultysenate/gened/GEPreamble_final.htm)

The purpose of this course is to introduce students to the history and philosophy of science through a historical exploration of the relationship between scientific ideas and their social context and implications through time, including the evolution of ethical concepts and the basis of reason. Concepts developed during this exploration are then used to explore pressing modern issues which incorporate combinations of science and ethics, including climate change, biotechnology, birth and death, and many others.

IV. Criteria:

Briefly explain how this course meets the criteria for the group. See: [http://www.umt.edu/facultysenate/ASCRCx/Adocuments/GE_Criteria5-1-08.htm](http://www.umt.edu/facultysenate/ASCRCx/Adocuments/GE_Criteria5-1-08.htm)

| Focus on specific traditions of ethical thought | Historical exploration of Western scientific philosophy |
| Focus on basic ethical topics                  | Application of philosophical concepts to modern ethical questions |
| Analyze forms of reasoning                     | Use critical thinking to assess historical developments in science-related ethical issues, as well as modern topics. |

V. Student Learning Goals:

Briefly explain how this course will meet the applicable learning goals. See: [http://www.umt.edu/facultysenate/ASCRCx/Adocuments/GE_Criteria5-1-08.htm](http://www.umt.edu/facultysenate/ASCRCx/Adocuments/GE_Criteria5-1-08.htm)

| Apply concepts and forms of reasoning to ethical issues | Combine scientific knowledge with ethics and social knowledge in discussing modern topics; Assess the historical relationship between scientific and ethical issues |
| Analyze and evaluate forms of reasoning               | Combine scientific knowledge with ethics and social knowledge in discussing modern topics; Evaluate the differences among scientific understanding, cultural understanding, and philosophical understanding |
VII. Syllabus: Paste syllabus below or attach and send digital copy with form. The syllabus should clearly describe how the above criteria are satisfied. For assistance on syllabus preparation see: http://teaching.berkeley.edu/bgd/syllabus.html

Science and Society

Course requirements: This course will be graded based on, in equal proportion, the midterm score, participation in class discussions including one class that you will moderate in the second half of the term, and a final project consisting of a position paper on a scientific topic of local significance plus participation in some local or national issue related to science. Examples of possible projects include: a letter to the newspaper, to your Congressional delegation, or to local government representatives; volunteer time with a local advocacy group; a presentation in a local school; or other participatory activity (approved by the instructor).

Course structure: The structure of the class is based on Socratic discussion. In the first half of the term, we will alternate between readings from the textbook, which give historical context, and important primary sources. You will be expected to discuss the readings in class in detail, so you should be familiar with the material before our meetings. In the second half of the term, we will use philosophical tools to discuss urgent modern issues. One class meeting on each topic will be moderated by the instructor and the other by a group of students. Readings or activities in student-run meetings will be chosen by the students.


Instructor: Rebecca Bendick, SC 331  
Bendick@mso.umt.edu  
406-243-5774  
office hours: MW 3:00-5:00

Part 1: history and philosophy of science

- Week 1: the ancients  
  26 August: Intro  
  28 August: E&C 1 + Aristotle handout

- Week 2: the early Christian era and Islamic scholarship  
  2 September: E&C 2  
  4 September: Avicenna handout; Islamic architecture

- Week 3: the revival of western science and philosophy  
  9 September: E&C 3  
  11 September: Thomas Aquinas handout  
  Roger Bacon handout

- Week 4: Renaissance, exploration, and scientific revolution  
  16 September: E&C 4
18 September: Galileo handouts

Week 5: Scientific revolution and modern methods
23 September: E&C 5
25 September: Newton handout
descartes handout

Week 6: Enlightenment: the commercial value of science and natural history
30 September: E&C 6
2 October: Declaration of Independence

Week 7: Modern Science
7 October: E&C Conclusion
9 October: MIDTERM

Part 2: modern issues of science and society

Week 8: Introduction to modern topics: evolution
14 October: E&C 8 (section)
16: Darwin handout + ID ruling

Week 9: genetic engineering
21 October: E&C 11 (section)
23 October: handouts TBA

Week 10: death, dying, and fertility
28 October & 30 October: handouts TBA

Week 11: climate change
6 November & 11 November: handouts TBA

Week 12: free will and modern neurobiology
13 November & 18 November: handouts TBA

Week 13-14: topic TBA (class choice from below based on interests)
20, 25, 27 November & 2 December
-global energy
-philosophy of quantum mechanics
-philosophy of relativity
-philosophy of astrophysics and deep time
-extraterrestrial life
-natural catastrophes and economics of risk

Week 15: Summary and conclusions
4 December: FINAL PROJECTS
*Please note: As an instructor of a general education course, you will be expected to provide sample assessment items and corresponding responses to the Assessment Advisory Committee.