

Bethany Lutheran College
Spring 2010 Syllabus for

SCIENCE 330

Ethics in Science

(3 credits; no pre-requisites)

Instructor: Dr. Ryan MacPherson
309 Meyer Hall

Schedule:

Section A:
Tue./Thu., 10:30-11:45 a.m.
MH 202

Catalogue Description:

Students will examine the ethical dimensions of contemporary science, including standards of professional research and principles of biomedical ethics. Informed by both theological and secular moral philosophies, students will explore how the meaning of the human person is challenged by current scientific trends.

Relation to Students' Curricular Needs:

- *elective* for a B.A. in Biology, Chemistry, Liberal Arts, or Physical Sciences (3/2 Engineering)
- *elective* for a Minor in Biology, Chemistry, or Western Philosophy
- *elective* for a Liberal Arts Concentration in Natural Science or Philosophy

Required Texts:

- Egendorf, Laura K., ed. *Medical Ethics*. Current Controversies series. Rev. ed. San Diego, CA: Greenhaven, 2005. ISBN 0-7377-2213-4. \$23.70.
- Eyer, Richard C. *Holy People, Holy Lives: Law and Gospel in Bioethics*. St. Louis: Concordia Publishing House, 2000. ISBN 0-570-05255-6. \$17.49.
- Kovac, Jeffrey. *The Ethical Chemist: Professionalism and Ethics in Science*. Upper Saddle River, NJ: Pearson Education, 2004. ISBN 0-13-141132-2. \$30.40.
- MacPherson, Ryan C., ed. *Distinguishing between a Person and a Thing: Selected Documents on Science and Ethics*. An anthology for students enrolled in "Science 330: Ethics in Science" at Bethany Lutheran College. Spring 2010. (Available in the college bookstore.)
- Shafer-Landau, Russ. *Whatever Happened to Good and Evil?* New York: Oxford University Press, 2004. ISBN 0-19-516873-9. \$27.95.
- Turabian, Kate L. *A Manual for Writers of Research Papers, Theses, and Dissertations*. 7th ed. Chicago: University of Chicago Press, 2007. ISBN 0-226-82337-7. \$17.00 —OR— Hacker, Diana. *A Pocket Style Manual*. 4th ed. Boston: Bedford/St. Martin's, 2004. ISBN 0-312-40684-3. \$19.99.

Additional Readings Placed on Reserve at the College Library:

- Clark, Kelly James, and Anne Poortenga. *The Story of Ethics: Fulfilling Our Human Nature*. Upper Saddle River, NJ: Prentice-Hall, 2003.
- Norman, Richard. *The Moral Philosophers: An Introduction to Ethics*. 2d ed. New York: Oxford University Press, 1998.
- Rachels, James. *The Elements of Moral Philosophy*. 4th ed. Boston: McGraw-Hill, 2003.
- Veith, Gene Edward, Jr. "How God Works through Human Beings" and "The Ethics of Vocation." Chaps. 2 and 9 in *God at Work: Your Christian Vocation in All of Life*. Wheaton, IL: Crossway Books, 2002. Pp. 24-35, 133-142.

Specific Objectives of This Course:

1. By surveying—through student reports to the class—the history of Western moral philosophy from the Greek Sophists to contemporary postmodernists, students will gain an understanding of the variety of ways that influential persons have grappled with questions of human nature, human morality, and human fulfillment, and place these discussions within their respective historical, philosophical, political, and theological contexts.
2. By exploring—through assigned readings and class discussions—key issues in professional ethics, research ethics, and biomedical ethics, students will recognize the irreducibly ethical essence of scientific pursuits.
3. By reading, writing, and discussing matters of ethical inquiry, students will develop skills in analytical reading and writing, critical thinking, and moral reasoning that will provide a foundation for responsible private and public living in service to others, especially within scientific vocations.
4. By drawing upon their own theological heritage, students will engage ethics from a standpoint that is situated both in historical time and also in eternity. Students will be encouraged to recognize ethical philosophies as finite human attempts to deal with the fundamental conditions of human existence, particularly in relation to the conscience’s revelation of personal and group responsibilities toward God, others, and oneself.

Assessment:

Class Participation	<u>8</u>	
	8	8
Moral Philosophy Report	6	
Document Report I	6	
Document Report II	6	
Case-Study Presentation	<u>6</u>	
	24	24
Exam I	16	
Exam II	16	
Exam III	<u>16</u>	
	48	48
Research Paper	<u>20</u>	
	20	20
Total		100

93.34 – 100.00	A
90.00 – 93.33	A-
86.67 – 89.99	B+
83.34 – 86.66	B
80.00 – 83.33	B-
76.68 – 79.99	C+
73.34 – 76.66	C
70.00 – 73.33	C-
66.67 – 69.99	D+
63.34 – 66.66	D
60.00 – 63.33	D-
00.00 – 59.99	F

Attendance and Class Participation:

Students are required to earn a “class participation grade” by maintaining punctual attendance with assigned texts at hand, completing assigned study questions and worksheets prior to class, actively participating in class discussions, and being absent no more than twice during the semester. Absences may be excused if a valid reason is supplied (such as a sports event for student athletes, or a prolonged illness). **However, student athletes, speech team members, or others who miss a substantial number of classes should realize that their grade likely will suffer as a consequence of not being present to learn alongside their classmates. Thus, even “excused” absences can result in lower grades.** The professor reserves the right to drop students from the class for excessive absences or habitually tardy attendance.

Importance of Turning in Assignments on Time:

Assignments are due at the beginning of class on the dates indicated below. *If a student anticipates difficulty completing an assignment on time, he or she should request a deadline extension well in advance of the due date.* This policy is intended to encourage planning and communication skills that will be helpful later

in life. Generally, the less often and the longer in advance that a student requests a deadline extension, the more willing the professor will be to grant the request.

Unless a student has received a deadline extension, then the following late penalties will apply:

- a 5% grade deduction for submitting an assignment after the start of class, but prior to 5 p.m. on the due date; and,
- an additional 10% grade deduction for *each* additional school day that the assignment is late. ("School day" means Monday through Friday, excluding school holidays.)

Written assignments must be submitted in hard copy, not electronic format. An unstapled multi-page assignment will not be accepted; the standard late penalty will apply once the paper is stapled.

Moral Philosophy Reports

Each student will write a brief abstract concerning an assigned moral philosophy, such as utilitarianism or natural law theory. After a revised draft has been accepted by the instructor, the reports will be duplicated as a packet for distribution to the class as a resource that can be drawn upon later in the course. See Doc. 1B for further instructions.

Document Reports:

Each student will read two specialized articles, not assigned to the rest of the class, and present an analysis to fellow students so that the class as a whole may be exposed to a broader selection of documents than any single student will have time to read. A list of eligible articles and criteria concerning the oral presentation and one-page handout will be provided in the course packet.

Case-Study Presentations

Each student will prepare one case-study presentation concerning an assigned reading in Kovac's *The Ethical Chemist* in order to demonstrate the student's ability to apply moral principles to specific case facts and thereby recommend a moral course of action. A list of eligible case studies and criteria concerning the oral presentation and one-page handout will be provided in the course packet.

Research Paper and Presentation:

Each student will write a research paper on a topic chosen in consultation with the professor. Your professor can generally supply an initial bibliography, but some additional hunting for sources will be required on your part. **Students enrolled in the 3/2 Engineering Program must write their paper on a theological topic** pertaining to the ethics of science in consultation with a Religious Studies faculty member, a requirement that compensates for the fact that their senior year will be spent off campus, and therefore the senior-year Religious Studies requirement will be waived. (*continued...*)

Specifications: 8 to 12 pages numbered and stapled; 1-inch margins; double-spaced text; 12-point Times Roman or equivalent (such as 11-point Book Antiqua); footnote citations (9-point, single-spaced), with full citations in a bibliography (*Chicago Manual of Style* standards).

Use of Sources: Students are expected to draw from and evaluate appropriate source materials, analyzing quotations in detail. The source materials and the subject matter should be treated in view of their respective historical contexts. Students should not merely summarize the source materials, but analyze them and present an independent interpretation or evaluation.

Presentation: Refer to the guidelines for Document Reports. In this case, you will have about 15 minutes for your presentation and the question/answer period (depending upon how many students enroll for the course). Be sure to speak extemporaneously, rather than merely read your paper or your handout.

Structure: Individual topics may require some modification to the proposed structure, but the following may serve as a general guideline. Note that this general structure may be applicable to essays written for other classes, and also to writing that you will do beyond college.

- I. *Introduction (1 to 2 pages)*
 - A. Grab the reader's attention. (Perhaps begin with a surprising quotation?)
 - B. Indicate the general topic.
 - C. Pose an interesting question (the thesis question).
 - D. Suggest how the remainder of the paper will explore that question. (For example, you might divide the question into three parts.)
- II. *Body (6 to 8 pages)*

Follow the structure previewed in Section I.D. For example:

 - A. Explore part one of your thesis question; then, transition to...
 - B. Part two of your thesis question; then, transition to...
 - C. The final part of your thesis question.
- III. *Conclusion (1 to 2 pages)*
 - A. Summarize your findings from Section II, indicating how these answer the question posed in I.C.
 - B. Draw some implications from III.A. for the general topic introduced in I.B.
 - C. Leave the reader satisfied. (For example, you might encourage further research on a topic that you have now shown to be highly interesting.)

Suggested Research Topics:

- Animal Experimentation
- Artificial Morality (i.e., does an entity possessing artificial intelligence have moral responsibility?)
- Birth Control
- Ecofeminism
- Environmental Risk Assessment
- Environmental Stewardship
- Euthanasia ("Mercy Killing")
- Fraudulent Research Reporting
- Gaia Hypothesis
- Gay Gene Hypothesis
- Genetic Screening
- Human Embryonic Stem Cell Research
- Human Personhood
- Human Reproductive Cloning
- Human Research Subjects
- Human Therapeutic Cloning
- Informed Consent (Research; Health Care)
- Institutional Review Boards
- Intellectual Property Rights
- In Vitro Fertilization
- Medical Insurance
- Organ Transplantation
- Peer Review
- Physician-Assisted Suicide
- Psychological Counseling
- Public Health
- Statistical Significance
- Surrogate Motherhood
- Terri Schiavo
- Whistle Blowing

Exams:

This course is divided into three topical sections, each with an open-book, open-notes take-home exam consisting of few essay questions. The exams for Parts II and III of the course may include comprehensive questions that require students to draw from materials studied earlier in the semester. You will have one week to complete each exam. The best answers will draw not only from the assigned readings, class lectures, and class discussions, but also from your fellow students' reports on supplementary readings. Additional research is permissible but unnecessary.

When citing sources, follow the Chicago style for footnotes. No bibliography is required. (Refer to Hacker's style guide and the "Plagiarism" section, below.) The course packet may be referenced in a footnote as follows (here simulating a citation to page 4 of Doc. 13B, followed by a citation to pages 6 through 8 of the same document, followed by a citation to page 2 of Doc. 18A – note that the article title and the course packet information are each abbreviated after the first citation):

1. California State University, "Fair Use: Overview and Meaning for Higher Education," in

Distinguishing a Person from a Thing, ed. Ryan C. MacPherson (Mankato, MN: Bethany Bookstore, 2007), 13B.4.
2. California State University, "Fair Use," 13B.6-8.
3. U.S. Dept. of Health and Human Services, "Tips on Informed Consent," in *Distinguishing a Person from a Thing*, 18A.2.

Because this is an open-resource exam, special standards of honor apply. **Although you are free to use your book, your own notes, and any class handouts, and you also are encouraged to discuss the issues of this course with your classmates, it will be considered a plagiarism violation if you collaborate with anyone to formulate answers to exam questions.** The exam essays that you submit for a grade must be genuinely your own work.

Plagiarism Policy:

Plagiarism may be defined briefly as the presentation of another's original work as if it is one's own, whether by copying exact wording, using similar phrasing, or pursuing a similar course of argument. Avoiding plagiarism in essays generally requires nothing more than giving credit where credit is due, by referring the reader to the original source and placing quotation marks around any copied language. (See *The MLA Style Manual* for citation formats.) Students who commit an act of plagiarism risk a failing grade for the assignment or exam and for the entire course, and even expulsion from the college. The instructor will follow whatever due process policies are established by the college, both for the sake of the student and for the integrity of the college as an academic institution that respects the intellectual property rights of others.

This policy is not an idle statement. The professor has previously enforced it, with the result of one student failing an entire course and other students receiving zero credit for major writing assignments, which resulted in their final course grades dropping from the B and C range into the D range.

Patriotic Use of Cell Phones:

America's founding fathers recognized that the republican form of government embodied in the U.S. Constitution would secure the blessings of liberty and security only so long as the people of America acted responsibly. The founders thus spoke often of "civic virtue"—moral character that empowers a people to act with the best interests of their neighbors in mind. In the spirit of civic virtue, it is expected that students enrolled in this class will turn off their cell phones before class begins. If a cell phone rings during class, then the student possessing that phone will be expected to serve his or her fellow classmates by reciting, from memory, one of the ten amendments to the U.S. Constitution at the beginning of the next class period. The professor will begin by assigning the First Amendment when the first cell phone rings. If, due to unfortunate negligence on the part of the students, the class is interrupted by a cell phone as many as ten times during the semester, at least everyone will receive the consolation of hearing all ten amendments recited from memory. Students who feel nervous about the prospect of reciting an amendment from memory in front of their peers should be especially cautious not to become responsible for the fifth cell phone disturbance of the semester, since the Fifth Amendment—the longest of them all—contains 104 words. Those who believe that this consequence is too severe should be careful not to leave their cell phone turned on until after the seventh infraction, since the Eighth Amendment, the shortest of them all, consists of a mere 16 words. It is, after all, the Eighth Amendment that protects citizens from "cruel and unusual punishments."

Writing Success Center:

Talented juniors and seniors provide free consultations for students seeking to produce the best possible essays for any class assignment. The faculty has nominated these students based on their previously demonstrated skills in writing, revising, and polishing essays. They meet Mondays and Wednesdays from 7:00 to 9:00 p.m. in the Communication Center. Come at your convenience; no appointment is necessary.

SCHEDULE OF ASSIGNMENTS

The instructor reserves the right to modify this schedule during the course of the semester should unusual circumstances arise. Generally, students can be confident that this schedule will be followed closely.

INTRODUCTION

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| 1. | Discussion I: | What is science? What is Ethics? | Tue. 12 Jan. |
| | Discussion II: | Syllabus | |
| | Discussion III: | Assignment of Student Reports for Part I (Doc. 1A) | |
| | Discussion IV: | Assignment of Moral Philosophy Abstract for Day 3 (Doc. 1B) | |

PART I: FOUNDATIONS FOR ETHICS, SCIENCE, AND ETHICS IN SCIENCE

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| 2. | Meta-Ethics | | Thu. 14 Jan. |
| | Readings: | Doc. 2A (Intro); Eyer, chaps. 1-2;
Shafer-Landau, Preface, chaps. 1-3;
<i>Optional Resource:</i> Kovac, chap. 1 | |
| 3. | Overview of Moral Theories | | Tue. 19 Jan. |
| | Reading: | Eyer, Appendix; Kovac, chap. 2; Doc. 3A (Moral Philosophies)
(Study questions are due with each document assignment.) | |
| | Due: | 200-word abstract of an assigned moral philosophy | |
| 4. | Moral Skepticism: Moral Equivalence; Dogmatism; Tolerance | | Thu. 21 Jan. |
| | Reading: | Shafer-Landau, chaps. 4-7 | |
| | In Class: | Doc. 4A (Propos. Logic) | |

No Class:	(Instructor will be speaking at a conference.)	Tue. 26 Jan.
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| 5. | Moral Skepticism: Arbitrariness; Contradiction; Relativism; and Self-Refutation | | Thu. 28 Jan. |
| | Reading: | Shafer-Landau, chaps. 8-11 | |
| 6. | Ethical Objectivity: Universality vs. Absolutism; Moral Disagreement; Theism | | Tue. 2 Feb. |
| | Readings: | Shafer-Landau, chaps. 12-15; Docs. 6A (SC) and 6B (CCC) | |
| | Optional Reading: | Doc. 6C (How Christians Should Regard Moses) | |
| 7. | Ethical Objectivism: The Source of Morality; Values and Science; Moral Knowledge | | Thu. 4 Feb. |
| | Reading: | Shafer-Landau, chaps. 16-19 | |
| 8. | Ethical Objectivism; Professional Codes of Ethics | | Tue. 9 Feb. |
| | Readings: | Kovac, chap. 3; Doc. 8A (Hippocrates);
Shafer-Landau, chap. 20, Conclusion, and Synopsis | |
| | Due: | Bring a Professional Code of Ethics for Discussion | |
| 9. | Institutional Review Boards | | Thu. 11 Feb. |
| | Readings: | Docs. 9A, Pts. A, C, E, F, G, and H (IRBs), 9B (BLC),
and 9C (Nuremberg) | |
| | Guest Presenter: | Bethany Lutheran College IRB board member | |
| | Discussion: | Assignment of Student Reports for Part II | |

President's Day	No Class	Mon. 15 Feb.
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10. Interpretations and Conclusions Tue. 16 Feb.
 Discussion I: Assignment of Case-Study Analyses for Part II (Doc. 10A)
 Discussion II: Review of Part I
Handout: **Take-Home Exam on Part I**

PART II: ETHICS FOR SCIENTISTS IN THE PROFESSION

11. Frameworks for Analyzing Case Studies; Statistical Judgments Thu. 18 Feb.
 Readings: Kovac, chap. 4; Docs. 11A (Checklist), 11B (Sample),
 11C (Worksheets), 11D (Statistics)
12. Statistics and Honesty Tue. 23 Feb.
 Readings: Kovac, pp. 28, 29-30, 31-33, 34, 35, 40, 41; Doc. 12A (LeVay)
Due (Days 12-18): *Complete a Doc. 11C worksheet for any underlined Kovac readings.
 See Doc. 10A.2 for assignments of student reports.*
Due: **Take-Home Exam on Part I**
13. Plagiarism, Confidentiality, and Intellectual Property Thu. 25 Feb.
 Readings: Kovac, pp. 36-37, 38-39; 48-49, 50, 51-52, 53-54, 55, 56;
 Docs. 13A (Academic Honor Code), Doc. 13B (Fair Use),
 9A, Pt. D (IRBs); Hacker, section 40
14. Conflict of Interest; Co-Authorship Tue. 2 Mar.
 Readings: Kovac, pp. 57-58, 59, 60, 62-63, 70, 71-72, 73, 91-92
15. Science as a Vocation Thu. 4 Mar.
 Readings: Veith, chaps. 2 and 9 (on reserve);
 Doc. 15A (Outline/Bibliography)
Due: Thesis Question for Research Paper (complete Doc. 15B)

Spring Break	No Classes	Fri. 5 through Sun. 14 Mar.
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16. Laboratory Safety; Press Releases; Budgets Tue. 16 Mar.
 Readings: Kovac, pp. 42-43, 44-45, 46, 93; 64, 65-66; 67, 68, 69;
 Doc. 16A (Sample Budget Proposal)

Advising Day	No class	Wed. 17 Mar.
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17. Cheating and Fudging Thu. 18 Mar.
 Readings: Kovac, pp. 75-76, 77-78; 81, 94-95; 79-80, 85-86; 82, 83-84,
87-88; 89-90; 96-97
18. Discrimination, Safety, and Informed Consent Tue. 23 Mar.
 Readings: Kovac, pp. 98-99, 100-1, 102-3, 104, 105; 47
 Docs. 9A (Pt. B) and 18A (Informed Consent)
 Discussion: Assignment of Student Reports for Part III
Handout: **Take-Home Exam on Part II**
19. Interpretations and Conclusions Thu. 25 Apr.
 Discussion: Review of Part II

PART III: ETHICS FOR SCIENTISTS IN SOCIETY

20. Law, Gospel, and the “Holiness” Model of Ethics Tue. 30 Mar.
 Readings: Eyer, Introduction, chaps. 3-5
Due: **Take-Home Exam on Part II**

Easter Break	No Classes	Thu. 1 through Tue. 6 Apr.
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21. The Significance of Human Suffering and Death Thu. 8 Apr.
 Reading: Eyer, chaps. 6-7
Due: Preliminary Outline and Annotated Bibliography
(Late penalty: 10% decline in Research Paper grade)
22. The Origin and Purpose of the Human Person Tue. 13 Apr.
 Readings: Eyer, chaps. 8-10
23. The Ethics of Rationing Health Care and of Physician-Assisted Suicide Thu. 15 Apr.
 Readings: Egendorf, chap. 1; Docs. 23A (Brain Death),
 23B (Brain Damage), 23C (*Evangelium Vitae*)
24. The Ethics of Organ Transplantation Tue. 20 Apr.
 Readings: Egendorf, chap. 2; Doc. 24A (Double Effect)
25. Peer Editing Lab: Research Papers Thu. 22 Apr.
Due: Rough Draft of Essay (minimum of 6 full pages; 2 copies)
(Late penalty: 10% reduction of final essay grade.)
26. The Ethics of Contraceptive Technologies Tue. 27 Apr.
 Readings: Docs. 26A (History), 26B (Method Comparison)
27. The Ethics of Reproductive Technologies Thu. 29 Apr.
 Readings: Egendorf, chap. 3;
 Docs. 27A (Procreator), 27B (*Donum Vitae*)
28. The Ethics of Embryonic Stem Cell Research and Human Cloning Tue. 4 May
 Reading: Egendorf, chap. 4
Due: **Research Paper**
Handout: **Take-Home Exam on Part III**
29. Science and Pseudoscience amid the Homosexual “Marriage” Debate Thu. 6 May
 Reading: Doc. 29A (Genuine Marriage)

INTERPRETATIONS AND CONCLUSIONS

30. Discussion: Student Research Reports T.B.A., 11-14 May
Due: Exam on Part III
31. Optional: University Faculty for Life Contest Deadline for 15 May
 the 2010 Scholarly Achievement Award (*www.uffl.org*)