

# **Philosophical, Ethical, and Religious Issues in Computer Science**

Course Number: Core 390/CSCI 317

Institution: St. John's University (MN)

Instructor: Noreen Herzfeld

*“The pursuit of truth is like picking raspberries. You miss a lot if you approach it from only one angle.”*

*-Randal Marlin, Carleton University*

*“Contrary to what people of science and religion long believed, questions, not answers, are the building blocks of the universe.”*

*-Kenneth Arnold, Cross Currents*

## **Course Description**

Should robots be baptized? Will artificially intelligent computers eventually replace human beings? Should scientists stop researching in fields such as artificial intelligence or nanotechnology in order to safeguard future lives? When a computer malfunctions, who is responsible? Do humans have a right to individual privacy? How will cyberspace change our relationships to each other or to God? This course will examine a variety of questions that arise within the field of computer science from the perspectives of scientific, religious, and ethical thought. Students will become familiar with methodologies in each of these areas and will apply these approaches to questions in several areas of computer science, including artificial intelligence, nanotechnology, software development, and cyberspace.

This course is designed to address the professional and ethical concerns of computer science majors. It is also designed to help students integrate their orientation as scientists with their personal belief system so that they can make better informed decisions as professionals and see their lives as an integrated whole.

## **Goals of the Course**

The goals of the course will be for each student:

1. to gain an understanding of the complexity of the religious and ethical issues that underlie computer use and development by engaging with a variety of philosophical and ethical questions
2. to see scientific, religious, and ethical reasoning as three valid ways to approach the variety of questions that arise in conjunction with the development and application of computer technology
3. to examine the work of computer science researchers and software developers in relationship to various concepts of the good of society

4. to develop a personal professional code that integrates the student's work as a computer scientist with his or her belief system.

## **Professor**

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## **Course Calendar** (subject to change as notified)

January 15: Introduction to the course  
What vital questions do computers raise in the 21st century?

January 22: Three approaches to these questions: Science, Religion, and Ethics  
Berry, *Life is a Miracle*, ch. 1-4  
Ermann, *Computers, Ethics, and Society*, ch. 4-6  
Kuhn, "The Historical Structure of Scientific Discovery"

January 29: Does Commander Data have a soul? Personhood and AI  
Barbour, "Neuroscience, Artificial Intelligence, and Human Nature: Theological and Philosophical Reflections," *Neuroscience and the Human Person*, 249-280.  
Herzfeld, "As Vessels of the Altar: Toward a Human/AI Ethic"  
Foerst, "Cog, a Humanoid Robot, and the Question of the Image of God", *Zygon* 33 (1998), 91-111.

February 5: Does Commander Data have rights? Personhood and AI, part 2  
Lillegard, "No Good News for Data," *Cross Currents*, Spring 1994  
"The Measure of a Man", Star Trek episode  
Miedaner, "The Soul of the Mark III Beast", *The Mind's I*.

February 12: Are we nothing but machines ourselves? Human Nature and Materialism  
Kerr, "The Modern Philosophy of Self in Recent Theology", *Neuroscience and the Human Person*, 23-40  
Ayala, "Human Nature: One Evolutionist's View", *Whatever Happened to the Soul*, ch. 2  
Damasio, "Body, Emotion and the Making of Consciousness", *Science and Spirit*, vol. 11, no. 2, May/June 2000  
Berry, ch. 3

February 19: Are computers the next step in evolution? Materialism's Logical End  
Noble, "The Immortal Mind: Artificial Intelligence", *The Religion of Technology*  
Kurzweil, *The Age of Spiritual Machines*, excerpts  
Herzfeld, "A Christian Response to Cybernetic Immortality"

March 5: Should we end research on robotics and nanotechnology? Future Consequences  
Joy, "Why the Future doesn't need us", *Wired*, April 2000

Lanier, "One-Half of a Manifesto", *Wired*, December 2000  
Dalai Lama, *Ethics for the New Millennium*, excerpts

March 12: When HAL Kills, who's to blame? Computers and Moral Agency  
Dennett, "When HAL Kills, Who's to Blame?", *Hal's Legacy*  
Weitzenbaum, *Computer Power and Human Reason*, ch. 9  
Ermann, *Computers, Ethics, and Society*, ch. 30-31

March 19: Midterm Exam

March 26: Dr. Frankenstein, Guilty or Innocent? Computers and Moral Agency, part 2  
Shelley, *Frankenstein*

April 2: Who is my neighbor? Cyberspace, Personal Relationships, and Spirituality  
Ermann, *Computers, Ethics, and Society*, chs. 15, 21  
Herzfeld, "Wall or Window: Cyberspace as a Venue for Spiritual Contemplation"

April 9: What is wisdom? Informing ourselves to Death  
Ermann, *Computers, Ethics, and Society*, chs. 12, 14  
*Proverbs, Wisdom*, excerpts  
Berry, "Why I am not going to buy a computer," *What are People For?*  
Postman, "Informing Ourselves to Death"

April 16: How, then, are we to live? Professional Ethics and Right Livelihood  
Ermann, *Computers, Ethics, and Society*, chs. 32-35  
Advises on Work, *Faith and Practice of the New England Yearly Meeting of Friends*  
Benedict, *The Rule of St. Benedict*, excerpts on work and tools

April 23: What questions do you still have? Leaving Academia for the World  
Review of Personal Professional Codes  
Summary and Evaluations

May 3 Final Exam

### **Course Format and Pedagogy**

Since this is an evening class which meets only once a week, much of the work for the course will be the student's responsibility outside of class time. Each week you will be responsible for approximately 100 pages of reading.

You will also be asked to subscribe to Meta, an on-line bulletin board for science and religion. Each student will be assigned to a three or four member group. These groups will meet outside of class and each group will be responsible for discussing the reading and Meta postings, preparing a one to two page reflection paper on the questions assigned for the week and a brief discussion of at least one Meta posting. Go to [www.metanexus.net](http://www.metanexus.net) to subscribe to Meta (subscribe to news, views, and clippings).

During the first half of each session we will use these papers as a springboard for discussion, in both small groups and as a class. During the second half we will engage in a variety of activities to further our understanding of the topic, including formal and informal debates, student presentations, video excerpts and discussion, and the occasional guest lecture. Each class will end with a short presentation of the material for the next session, given by the instructor.

### **Required Texts**

David Ermann, Mary Williams, & Michele Shauf. *Computers, Ethics, and Society*. Oxford, 1997.

Mary Shelley. *Frankenstein*. Penguin, 1983.

Wendell Berry. *Life is a Miracle*. Counterpoint, 2000.

Course Reader: Selected Papers and Chapters

### **Evaluation**

Because this class meets only once a week and its format depends on student discussion and participation, attendance at all classes is mandatory. One absence will be excused. After that, your grade will be lowered by three percentage points for each class that you miss. Class attendance also presumes that you come prepared and demonstrate completion of the reading assignments for each day. Lack of demonstrated preparation will lower your grade.

The following criteria will be used to assess your written work in the course:

- accuracy in representing an author's viewpoint or data
- clarity and coherence of your argument
- thoroughness in completing an assignment
- articulation of your thought using appropriate grammar, spelling, and organization
- creativity or evidence of mulling over the question
- work completed and submitted on time. Late papers will be accepted for up to one cycle but will lose points for each day they are late. Work that is more than one cycle late will not be accepted.

Your grade will be based on the following:

- Two exams: 20% each
- Group and individual reflection papers: 20%
- Class attendance and participation: 20%
- Book Review: 20%