

# ETHICS FOR APPLIED MATHEMATICS (WM1028AM)

Mark Alfano

Delft University of Technology

Quarter 2 (November 2016 – January 2017; first lecture 15 November)

Lectures: Tuesdays 9:45-10:45 & Thursdays 15:45-16:45, EWI Lecture Hall D@ta

Tutorials:

- Wednesdays 16:00-17:00 with Mark Alfano
- Fridays 15:45-16:45 with Gert-Jan Lokhorst

Emails: [mark.alfano@gmail.com](mailto:mark.alfano@gmail.com), [G.J.C.Lokhorst@tudelft.nl](mailto:G.J.C.Lokhorst@tudelft.nl)

## COURSE DESCRIPTION

This course is a study of broadly normative issues that arise in relation to the field of applied mathematics. The following kinds of questions are examined: How can applied systems be built to promote, protect, preserve, and foster the pursuit of various values related to human wellbeing? What risks and uncertainties need to be accounted for in such systems? To what extent is it possible to empower individuals with applied systems while limiting the extent to which they can harm each other and themselves?

## READINGS

We will use one textbook, which can be purchased through the university, in this class:

Lynch, M. (2016). *The Internet of Us: Knowing More and Understanding Less in the Age of Big Data*. Liveright.

We will also read a number of articles, as indicated below.

## ASSESSMENT

This is a master's-level course, so I have two main goals for you: to establish a baseline of knowledge in the normative field of ethics, and to start to hone your philosophical skills. To that end, I will assign one paper and one (group) presentation. The breakdown of the value of assignments is as follows:

group presentation	35%
paper	50%
participation	15%

### TERM PAPER

A research paper is due at the end of the quarter. The paper should be approximately 2000 words (roughly 8 double-spaced pages). In week 5, you will submit a thesis statement for approval. In week 6, you will submit an abstract for approval (200-300 words, roughly 1 page double-spaced). Finally, at the end of the quarter, your paper is due.

### CLASS PRESENTATIONS

Over the course of the quarter, students will make in-class presentations in pairs. These presentations will be during the tutorials, and should be roughly 20 minutes long. Each presentation will do two things. First, it will identify a single crucial item (argument, concept, theme, etc.) in the assigned readings for that week. Second, it will delve more deeply into one of those items. It makes sense to use slides or a handout for this, but not

both. If you use slides, please ensure that they are not soul-crushingly boring (for tips, see <http://www.walernelson.com/dr/tedious-powerpoint>).

### PARTICIPATION

This includes showing up on time, speaking up in class, paying attention to what the other students have to say, taking notes, asking questions, etc. Participation also includes weekly responses, **due Monday evening to your tutor**, about the readings **for the upcoming week**. These responses should be between 200 and 400 words (1-2 pages double-spaced). The content of the response is up to you, but all responses should deal directly with the reading assigned for that week. You may want to choose a sentence or paragraph you found especially provocative, difficult, or remarkable, then explain why you found it provocative, difficult, or remarkable. Alternatively, you may want to argue that one of the authors is right or wrong in making some particular claim. Or you may wish to connect two passages in the reading that illuminate each other. You may even just pick a passage and ask questions about it.

### SCHEDULE OF ASSIGNMENTS AND LECTURE-RELATED READINGS

(Please arrive at class having already read and pondered the assigned material.)

Week & Topic	Day	Assignments
1: technological epistemology	15 November	Lynch, chapter 1
	17 November	Lynch, chapter 2 <i>Guest lecture by Georgy Ishmaev</i>
2: social Epistemology	22 November	Lynch, chapter 3
	24 November	Lynch, chapter 4 <i>Guest lecture by Georgy Ishmaev</i>
3: privacy	29 November	Lynch, chapter 5 <i>Guest lecture by Georgy Ishmaev</i>
	1 December	Douglas, "Doxing: A Conceptual Analysis" <a href="http://doc.utwente.nl/100614/1/art%253A10.1007%252Fs10676-016-9406-0.pdf">http://doc.utwente.nl/100614/1/art%253A10.1007%252Fs10676-016-9406-0.pdf</a>
4: distributive Justice	6 December	Lynch, chapter 6
	8 December	Lynch, chapter 7
5: understanding and the right to explanation	13 December	Lynch, chapter 8
	15 December	Lynch, chapter 8 Chiel, "Right to Explanation" <a href="http://fusion.net/story/321178/european-union-right-to-algorithmic-explanation/">http://fusion.net/story/321178/european-union-right-to-algorithmic-explanation/</a>
6: forgetting and remembering	20 December	Ambrose, "You are What Google Says you are: The Right to be Forgotten and Information Stewardship" <a href="http://philpapers.org/rec/AMBYAW">http://philpapers.org/rec/AMBYAW</a>
	22 December	CLASS CANCELED
7: values and the topology of	10 January	Stokes, "Deletion as Second Death: The Moral Status of Digital Remains"

ICT		<a href="http://philpapers.org/rec/STODAS">http://philpapers.org/rec/STODAS</a>
	12 January	Alfano, "The Topology of Communities of Trust"