

PHIL 20632/STV 20233  
Robot Ethics  
TTh 2:00-3:15  
202 DeBartolo

Fall 2013

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Office Hours: TTh 1:00-2:00, 308 Malloy

**Texts:** There are two required books for this course:

Ronald C. Arkin. *Governing Lethal Behavior in Autonomous Robots*. CRC Press, 2009.

Patrick Lin, Keith Abney, and George A. Bekey, eds. *Robot Ethics: The Ethical and Social Implications of Robotics*. MIT Press, 2012.

A few additional readings will be distributed directly to the class in electronic form.

**Requirements:** There will be three components in the computation of your final grade for the course:

(1) **Discussion Papers** (60 %). Each student will be required to submit four discussion papers, each a minimum of five pages, on topics to be worked out in consultation with the instructor. Each of the four discussion papers will be worth 15 % of the final course grade. Papers will be graded on the basis of both content and mechanics, the latter counting for approximately 20% of the grade on each paper.

(2) **Journals** (25 %). You will be required to keep a journal for recording your critical reactions to the assigned readings. At a minimum, you should write a one-page ( $\geq 300$  words) critical response to each reading assignment, though you are encouraged to write more, taking advantage of this opportunity to record your thoughts on any topic related to the course and the readings. Journal entries will be collected on a random, unannounced basis several times over the course of the semester. In addition, the entire journal will be collected at mid-term and at the end of the semester so that I can check to be sure that all required entries are included. To facilitate the collection of journal entries, you will be asked to keep the journal in some kind of loose-leaf or ring binder. Also, you should get in the habit of bringing the journal with you to class every day, so that you will be ready with your journal entry on the days when I collect journal entries. You will be graded rigorously on the extent to which you use your journal, the minimum of one page (300 words) per reading being strictly enforced. But it will be the quality of thinking manifest in your journal that will chiefly determine your grade. For more on how to keep a good journal, see the extra handout on that topic.

(3) **Class Participation** (15 %). The remaining fifteen percent of your final grade will be determined on the basis of the quality and extent of your enthusiastic and constructive participation in class discussion.

**One-minute Papers:** Every class session will end a few minutes early to permit you to write a so-called “one-minute paper,” in which you will write no more than two- or three-sentence answers to two questions: (a) What was the most important point covered in today’s class? (b) What issue or question was left most unclear in your mind at the end of today’s class? These one-minute papers will be required of every student at the end of every class session and will be collected at the end of class, but they will not be graded.

**Attendance:** No more than two unexcused absences will be permitted during the semester; for every additional unexcused absence, the student’s final course grade will be reduced by one step on a plus/minus basis. Thus, for example, for a student with three unexcused absences, a final grade of B+ becomes a B, and for a student with four unexcused absences, a final grade of B becomes a C+. A student more than fifteen minutes late for class is assumed to be absent. If you must miss a class for any reason, be sure to let me know beforehand, or as soon after the fact as possible, so as to enable me to determine whether or not to excuse the absence. I promise to be generous in allowing excused absences for legitimate purposes.

**Schedule:**

<b>Date:</b>	<b>Topic:</b>	<b>Readings:</b>
27 Aug.	Introduction - What is Robot Ethics?	
29 Aug.	Should We Do It?	Arkin, "The Case for Ethical Autonomy in Unmanned Systems." Human Rights Watch, "Losing Humanity: The Case against Killer Robots."
3 Sep.	The Push for Autonomy in Weapons Systems	Arkin, "Introduction" and "Trends toward Lethality," Chs. 1 & 2 of <i>GLBAR</i> .
5 Sep.	Autonomy in Weapons Systems: Why and Whether	Arkin, "Human Failings in the Battlefield," "Related Philosophical Thought," and "What People Think: Opinions on Lethal Autonomous Systems," Chs. 3-5 of <i>GLBAR</i> .
10 Sep.	Building Lethal Autonomous Robots, I	Arkin, "Formalization for Ethical Control," and "Specific Issues for Lethality: What to Represent," Chs. 6 & 7 of <i>GLBAR</i> .
12 Sep.	"I, Robot"	Film in Class
17 Sep.	Building Lethal Autonomous Robots, II	Arkin, "Representational Choices: How to Represent Ethics in a Lethal Robot" and "Architectural Consideration for Governing Lethality," Chs. 8 & 9 of <i>GLBAR</i> .
19 Sep.	Building Lethal Autonomous Robots, III	Arkin, "Design Options" and "Example Scenarios for the Ethical Use of Force," Chs. 10 & 11 of <i>GLBAR</i> .
24 Sep.	Building Lethal Autonomous Robots, IV	Arkin, "A Prototype Implementation," Ch. 12 of <i>GLBAR</i> .
26 Sep.	Ronald Arkin's visit: Ethical Autonomy - Pro and Con	
1 Oct.	Technology and Ethics: The Lay of the Land <b><i>First Discussion Paper Due</i></b>	Patrick Lin, "Introduction to Robot Ethics" and George Bekey, "Current Trends in Robotics: Technology and Ethics"

3 Oct.	Technology and Ethics: The Lay of the Land	Keith Abney, "Robotics, Ethical Theory, and Metaethics: A Guide for the Perplexed"
8 Oct.	Design and Programming	Colin Allen and Wendell Wallach, "Moral Machines: Contradiction in Terms or Abdication of Human Responsibility" and James Hughes, "Compassionate AI and Selfless Robots: A Buddhist Approach"
10 Oct.	Design and Programming	Selmer Bringsjord and Joshua Taylor, "The Divine-Command Approach to Robot Ethics"
15 Oct.	Military Robots	Noel Sharkey, "Killing Made Easy: From Joysticks to Politics" and Marcello Guarini and Paul Bello, "Robotic Warfare: Some Challenges in Moving from Noncivilian to Civilian Theaters"
17 Oct.	Military Robots	Gert-Jan Lockhorst and Jeroen van den Hoven, "Responsibility for Military Robots"
21-25 Oct.	<b><i>Fall Break</i></b>	
29 Oct.	Law and Robotics	Richard O'Meara, "Contemporary Governance Architecture Regarding Robotic Technologies: An Assessment" and Peter M. Asaro, "A Body to Kick, but Still No Soul to Damn: Legal Perspectives on Robotics"
	<b><i>Second Discussion Paper Due</i></b>	
31 Oct.	Law and Robotics	M. Ryan Calo, "Robots and Privacy"
5 Nov.	Love, Sex, and Robots	Matthias Scheutz, "The Inherent Dangers of Unidirectional Emotional Bonds between Humans and Social Robots" and David Levy, "The Ethics of Robot Prostitutes"
7 Nov.	Love, Sex, and Robots	Blay Whitby, "Do You Want a Robot Lover? The Ethics of Caring Technologies"
12 Nov.	Medicine and Care	Jason Borenstein and Yvette Pearson, "Robot Caregivers: Ethical Issues across the Human Lifespan" and Noel Sharkey and Amanda Sharkey, "The Rights and Wrongs of Robot Care"
14 Nov.	Medicine and Care	Steve Petersen, "Designing People to Serve."
19 Nov.	Laurel Riek's visit	

21 Nov.	“Battlestar Galactica,” Episode 4.17	Video in class
26 Nov.	Rights and Ethics <i>Third Discussion Paper Due</i>	Rob Sparrow, “Can Machines Be People? Reflections on the Turing Triage Test” and Kevin Warwick, “Robots with Biological Brains”
28 Nov.	<i>Thanksgiving Holiday</i>	
3 Dec.	Rights and Ethics	Anthony Beavers, “Moral Machines and the Threat of Ethical Nihilism”
5 Dec.	Beyond the Advancing Edge of Technology: I. Driverless Cars	Patrick Lin, “The Ethics of Saving Lives With Autonomous Cars Are Far Murkier Than You Think”
10 Dec.	Beyond the Advancing Edge of Technology: II. Autonomy in Cyberconflict	Alessandro Guarino, “Autonomous Intelligent Agents in Cyber Offence”
12 Dec.	“Star Trek: The Next Generation,” episode 2.9, “The Measure of a Man”	Video in class.
16 Dec.	<i>Fourth Discussion Paper Due</i>	