University at Buffalo
College of Arts and Sciences

DEPARTMENT OF PHILOSOPHY
GRADUATE COURSE DESCRIPTIONS

Fall Semester August 26 – December 9, 2024

PHI 579 Introduction to Ontological Philosophy

Dr. Barry Smith
ONLINE
Class #: 23603

This course provides an introduction to central themes in the history of philosophy viewed from an ontological perspective. The course is designed to be of interest to both philosophers and those with a background in computer and information science. Topics treated will include:

1. A brief history of ontology from Aristotle to the Human Genome Project
2. The ontology of social reality
3. Ontology leaving the mothership of philosophy
4. Why computer science needs philosophy
5. The Semantic Web
6. Towards a standard top-level ontology
7. Ontology and the Federal Government Data Integration Initiative (anno 2009)
8. The meaning of life

PHI 598 Evolution: Concepts and Applications

Dr. Justin Bruner
Wednesday, 1:00 PM – 3:40 PM
Class #: 24491

In the first half of this course, we examine the philosophical underpinnings of the theory of evolution. Questions include, what does it mean for a population to evolve by natural selection? What are the 'units of selection'? In what sense – if any – is 'cultural evolution' a Darwinian process? The second half of the course will utilize evolutionary theory (and a wee bit of evolutionary game theory) to tackle various topics in philosophy. We'll touch upon issues in social and political philosophy, ethics, and epistemology.

Suggested (and likely required) readings include: Darwinian Populations and Natural Selection (Peter Godfrey-Smith), The Philosophy of Social Evolution (Jonathan Birch), The Pleistocene Social Contract (Kim Sterelny), The Evolution of the Social Contract (Brian Skyrms), Signals (Brian Skyrms).

PHI 634 Dispositions and Powers

Dr. Neil Williams and Dr. Toby Friend
Tuesday, 1:00 PM – 3:40 PM
Class #: 20808

Dispositions are an incredibly common part of our scientific picture of the world. They are also prevelant in our day-to-day navigation in the world. They are so common that it's fair to say that we'd have a much harder time making our way through the world if dispositions weren't part of our description of it. Given that were wont do to describe it this way, we ought to be very interested in what it means to say that something has a disposition. The most successful response to this question says it has something to do with conditionality, that is, that to ascribe a disposition to something says something about what could, would, or will be the case should certain conditions obtain. But the devil, as they say, is in the details, as nearly every version of this proposed analysis runs into problems of one sort or another. It will be our job to wander through this medium-sized philosophical cottage industry and see where it has been and where it is headed.

PHI 637 Special Topics: Logic of Ontology

Dr. John Beverley
Thursday, 1:00 PM – 3:40 PM
Class #: 23823

Humans are perplexing. Many engage effortlessly in discourse without violating conversational norms. Some accurately diagnose treatment options for medical conditions, based on minimal information. Some identify lemmas needed to prove theorems too complex for automated approaches. Humans are *perplexingly* good at solving complicated tasks. Artificial Intelligence communities have, for decades, worked to design computing systems able to solve complicated tasks as well as humans can. Siri, autonomous vehicles, Computer-Aided Diagnosing systems, and automated theorem provers, are examples of the fruits of such labor. For such feats of computing ingenuity to work properly, however, relevant knowledge must be represented in formalisms interpretable by computing systems.
One goal of this course is to provide students with a deep understanding of formalisms underwriting contemporary knowledge representation. We will examine several 'Description Logics' which reflect decidable fragments of First-Order Logic and provide formal foundations for widely used semantic web languages. Semantic web languages – such as the Resource Description Framework – in turn provide concrete vocabularies used to represent information across the web. Another goal of this course is to provide students with a deep understanding of these semantic web languages, emphasizing their importance to the development of ontologies – structured vocabularies comprised of human and computer interpretable terminological content representing entities in some domain. Students will gain competency in the application of semantic web languages to represent the philosophical commitments of one of the most important ontologies in the world: Basic Formal Ontology (BFO).

Ontology modeling of this sort is just a first step towards capturing the perplexity of human intelligence. Students will take a further step towards that goal in this course by exploring how exactly ontologies like BFO are used in the real world. To that end, students will learn to use the Protégé ontology editor to represent BFO hierarchies, automated reasoners native

to Protégé to check for logical consistency, the SPARQL semantic web querying language to extract important information from BFO-conformant data sets, and the SHACL semantic web language to validate dynamic updating of BFO-conformant ontologies. Throughout, students will learn to use Github – a common version control environment in the ontology developer toolkit, and in doing so gain insight into how knowledge represented using semantic web standards is revised and maintained across a wide range of stakeholders, users, and contributors.

Will, at the end of this course, students be able to capture the perplexing human ability to solve complex tasks? Probably not. Students will, however, be able to recognize how far contemporary Artificial Intelligence research has progressed towards that goal, viewed through the intersecting lenses of logic and ontology.

PHI 637 Special Topics: Life and Death
Dr. David Hershenov
Friday, 1:00 PM – 3:40 PM
Class #: 20984

This seminar will look at attempts to provide definitions and criteria of "life" and "death" in order to help us discover when we human beings come into and go out of existence. We will examine a number of empirical, modal, and identity-based considerations that challenge the common sense claim that our lives began at fertilization. Once we are clearer about our actual origins, we will inquire into whether they are essential to us or we could have had very different origins than we did. We will next explore why even with a good account of life, we cannot define death as its loss. One reason is that the existence of cryptobiotic organisms suggests the possibility that we could exist in state of suspended animation, neither alive nor dead. We will consider adding some sort of irreversibility condition to the definition of death to distinguish the cessation of life processes that are fatal from those which are not. We next will investigate whether certain brain functions prevent the cessation of life or whether the brain death criterion is false. We will consider the possibility that the bodily integration characteristic of life can be accomplished without a functioning brain in adults as it was in early embryos. We will end the seminar with a foray into the terminator/anti-terminator debate about whether we cease to exist at death or persist as a corpse.

PHI 637 Special Topics: Ontology of Economics
Dr. Barry Smith
Monday, 1:00 PM – 3:40 PM
Class #: 24147

The goal of the course is to give the students conceptual tools to understand and evaluate critically the philosophical assumptions of different schools of thought in economics. Debates between different approaches in economics may be viewed in part as ontological debates as to the nature of social entities such as prices, markets, economic actors. Hence, the course aims at introducing the core categories that determine the world of economics and exploring how different interpretations of these categories can support different economic claims and systems.

Part One of the course introduces topics in social ontology with an eye on economic applications: agency, complexity, information, collectivity, speech acts, claims and obligations. Part Two analyzes themes underlying the works of the main contemporary economic schools of thought, including classical and neoclassical economics. Keynesian economics, institutional economics, Austrian economics, complexity economics, and Marxist economics. Austrian economics will be given special prominence because it is arguably the economic school of thought that makes the most open use of philosophical categories in its theories. Part Three will introduce AI technology as a bearer of new possibilities and a new understanding of the working of economic processes and of society as a whole.

Individual Tutorial Course Sections

See HUB Registration site for Individual Tutorial Course Sections with Philosophy Department Faculty, to be arranged with permission of instructor:

PHI 599 Graduate Tutorial
PHI 605 Supervised Teaching
PHI 701 MA Thesis Guidance Tutorials (Arranged with Professor)
PHI 703 Dissertation Guidance Tutorials (Arranged with Professor)