University at Buffalo
College of Arts and Sciences

DEPARTMENT OF PHILOSOPHY
GRADUATE COURSE DESCRIPTIONS

Spring Semester January 30 – May 12, 2023

PHI 579 Epistemology and Experimental Philosophy

Dr. James Beebe
Thursday, 1:00 PM – 3:40 PM
Class #: 23547

In this seminar we will examine a number of important debates in mainstream epistemology from the last half century and various ways that experimental philosophers have contributed to these debates. Topics will include the following:

- Does knowledge require truth or merely approximate truth?
- Does knowledge require full belief, partial belief, or implicit belief?
- If you are epistemically justified in believing something, is it always evident to you that you are?
- Is being epistemically justified a subjective matter or a more objective one?
- Are the requirements for knowledge more demainding when the cost of being wrong is high?
- Does the raising of skeptical doubts have much of an impact on people's beliefs or convictions? How much impact should it have?
- Do philosophers, ordinary people, and scholars in other fields have the same concept of knowledge?
- Do ordinary individuals (non-philosophers) around the world share the same concept of knowledge?
- What's the point of having a concept of knowledge?

PHI 579 Exploring New Diversity Theory

Dr. Ryan Muldoon
Tuesday, 1:00 PM – 3:40 PM
Class #: 23549

The New Diversity Theory finds that diversity is good. More particularly, cultural, linguistic, religious, moral, and other forms of perspectival diversity are valuable resources for discovery, innovation, problem-solvoing, and dynamic adaptation in complex social systems. This course examines central New Diversity works to consider the nature of perspectives and diversity, the conditions in which diverse groups out- or under-perform

homogenous groups, and the challenges and potentials for robust social cooperation in an increasingly diverse, dynamic world.

PHI 637 Logic of Ontology

Dr. John Beverley
Monday, 1:00 PM – 3:40 PM
Class #: 23972

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 langauges. Semantic web langauages – 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 twards that goal in this course by exploring how exactly ontologies lke 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 datasets, 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 tookit, 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 interacting lenses of logic and ontology.

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 702 MA Thesis Guidance Tutorials (Arranged with Professor)
PHI 704 Dissertation Guidance Tutorials (Arranged with Professor)