Philosophy 3330: Philosophy of Science
Spring 2021

Basic Information

Instructor: Joel Velasco
E-mail: joel.velasco@ttu.edu
My Office: 265G Eng/Phil
Office Hours: Tue, Thur 3:30-5:00 or by appointment
Class meets Tue, Thu 2:00-3:20 in MCOM 359

Teaching Assistant: Shelby Hanna
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Office: Phil 262
Office hours: 12:30-1:30 Tue, Thu

Course Description

This course provides an introduction to the field of philosophy of science. This is a **reading-intensive, discussion-based** course. In other words, students are expected to come to class having read the assigned material and ready to discuss it. You are not expected to understand everything in the readings, but you are expected to raise questions about what you don't understand, engage in debate and dialog about the material, and raise objections to claims that seem questionable. Rather than sit passively, I want you to THINK FOR YOURSELF and ACTIVELY ENGAGE with the readings, other students, and the instructor. **You cannot do well in this course without doing the assigned readings.** Although there are no prerequisites, it is an advantage to have *some* background in philosophy.

The goal of this course is to philosophically examine science in general and medicine specifically. These questions include: What is science? How does it work? Do all sciences work in similar ways? Is medicine a science?

Expected Learning Outcomes

At the end of this course, students will have gained the following knowledge and skills

- Students will have a basic understanding of what science is, how it can be distinguished from other ways of knowledge, and how scientific explanation works. They will be able to explain why scientific theories change over time. They can sketch the development of science from pre-17th century natural philosophy to the empirical, specialized disciplines of today. They realize science is not an isolated endeavor, but that it is situated within a broader social and cultural context.

- Students understand key notions in philosophy of science, like paradigm, falsification, realism, Quine-Duhem thesis and hypothetico-deductive model.

Importantly, they are able to apply such concepts successfully to examples from scientific practice they have not encountered earlier.

- Students must be able to know the major authors in philosophy of science and their contributions to the field (e.g., Bacon, Popper, Hempel). They should be able to situate them within the history of philosophy. However, they need not know any biographical details about these authors.
- The readings will be discussed during the classes. Students should be able to critically reflect on the reading materials and give evidence of this in class (e.g., classroom exercises, in-group discussion).
- Students are able to think critically about various questions in philosophy of science, as reflected in their assigned paper, classroom exercises, midterm and final exam.

Class Participation

Philosophy is a communal enterprise: the ability to make valuable contributions to philosophical discussions can be as important as the ability to write well. Moreover, since the written assignments will force the students to think carefully about very specific topics, participation in class discussion is an important way for students to demonstrate a broader competence with the material than is possible in the papers alone. Students are encouraged to continue class discussions immediately after the class is over, by meeting with me in person some other time, or continuing the discussion over e-mail with me. Of course discussion with each other outside of class is strongly encouraged as well. Students who for any reason have difficulty speaking up in class are especially encouraged to (and must!) pursue these options. It should go without saying that attendance is an absolutely essential component of class participation.

Academic Integrity:

Cheating and plagiarism are, of course, prohibited in this class just as they are in all university classes. They will be taken particularly seriously in this class, and any cases that may arise will be treated in a manner consistent with University policy. These two violations of academic integrity are each defined in the section of the Texas Tech online official publications titled "Academic Integrity." Plagiarism is there described as follows: "'Plagiarism' includes, but is not limited to, the appropriation of, buying, receiving as a gift, or obtaining by any means material that is attributable in whole or in part to another source, including words, ideas, illustrations, structure, computer code, other expression and media, and presenting that material as one's own academic work being offered for credit."

http://www.depts.ttu.edu/studentconduct/academicinteg.php

You can find excellent explanations of what specifically constitutes plagiarism as opposed to proper citation, and also tutorials on how to avoid plagiarism at the following websites: http://www.dartmouth.edu/~writing/sources/ http://www.indiana.edu/~wts/pamphlets/plagiarism.shtml Note: If, at any time, you are at all unclear about what counts as plagiarism, or about whether you are properly citing

sources in any of your written work, please just come by and ask me about it. You do not want to be confused or careless about this serious matter.

Grades
The grades will be based on reading questions, homeworks, and take-home essays.

- Reading questions (20%): For each week I will have prepared reading questions ahead of time usually consisting of a few questions where you will have to do the reading in order to understand and answer the questions and you will have to put some thought and reflection into answering. Your total score will max out at 20 points (they are worth 2 points each) so if you are doing well, you may be able to skip some. Reading responses should be uploaded into Blackboard before the beginning of class on the day they are due.

- Take-home assignments (80%): We will have a total of four take-home assignments due throughout the semester. These will be a combination of take home exams and short essays.

Rough Grading Scale:
98—100% → A+
92—100% → A
90—91% → A-
88—89% → B+
82—87% → B
80—81% → B-
78—79% → C+
70—77% → C
65—70% → C-
50—64% → D
0—49% → F

Late Assignments Policy
In the absence of a documented excuse, late assignments will be docked 20% per day.

Religious holy days: a student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. A student who is absent for the observance of a religious holy day shall be allowed to take an exam or complete an assignment scheduled for that day within a reasonable time after the absence.

ADA Statement: Any student who, because of a disability, may require special arrangements in order to meet the course requirements should contact the instructor as soon as possible to make any necessary arrangements. Students should present appropriate verification from Student Disability Services during the instructor's office hours. Please note: instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Student Disability Services has been provided.

For additional information, please contact Student Disability Services in West Hall or call 806-742-2405.

Required books:
Understanding Philosophy of Science by James Ladyman (Routledge 2002). A pdf is available on blackboard.

All other readings will be found on the course website:
http://joelvelasco.net/teaching/3330

Rough Course Outline:
Week 1: Introduction
Week 2: Naive Inductionism
Week 3: The Problem of Induction
Week 4: Falsificationism
Week 5: Evidence in Medicine
Week 6: Kuhn and Scientific Revolutions
Week 7: Discovery in Medicine
Week 8-9: Scientific Realism
Weeks 10-12: Scientific Explanation
Weeks 13-15: Issues in Medicine

Syllabus Inserts for Spring 2021

Potential for Course Modality Change
If Texas Tech University campus operations are required to change because of health concerns related to the COVID-19 pandemic, it is possible that this course will move to a fully online delivery format. Should that be necessary, students will likely need a webcam and microphone and will be advised of additional technical and/or equipment requirements, including remote proctoring software.

Illness-Based Absence Policy
If at any time during this semester you feel ill, in the interest of your own health and safety as well as the health and safety of your instructors and classmates, you are encouraged not to attend face-to-face class meetings or events. Please review the steps outlined below that you should follow to ensure your absence for illness will be excused. These steps also apply to not participating in synchronous online class meetings if you feel too ill to do so and missing specified assignment due dates in asynchronous online classes because of illness.

1. If you are ill and think the symptoms might be COVID-19-related:

   a) Call Student Health Services at 806.743.2848 or your health care

provider.

b) Self-report as soon as possible using the ttucovid19.ttu.edu management system. This website has specific directions about how to upload documentation from a medical provider and what will happen if your illness renders you unable to participate in classes for more than one week.

c) If your illness is determined to be COVID-19-related, remaining documentation and communication will be handled through the Office of the Dean of Students, including notification to your instructors.

d) If your illness is determined not to be COVID-19-related, please follow steps 2.a-d below.

2. If you are ill and can attribute your symptoms to something other than COVID-19:

a) If your illness renders you unable to attend face-to-face classes, participate in synchronous online classes, or miss specified assignment due dates in asynchronous online classes, you are encouraged to visit with either Student Health Services at 806.743.2848 or your health care provider. Note that Student Health Services and your own and other health care providers may arrange virtual visits.

b) During the health provider visit, request a "return to school" note;

c) E-mail the instructor a picture of that note;

d) Return to class by the next class period after the date indicated on your note.

Following the steps outlined above helps to keep your instructors informed about your absences and ensures your absence or missing an assignment due date because of illness will be marked excused. You will still be responsible to complete within a week of returning to class any assignments, quizzes, or exams you miss because of illness.