

“I do not feel obligated to believe that the same God who endowed us with sense, reason, and intellect had intended for us to forgo their use...”

- Galileo Galilee (1564 – 1642)

*“Tiger got to hunt, bird got to fly;
Man got to sit and wonder 'why, why, why?'
Tiger got to sleep, bird got to land;
Man got to tell himself he understand.”*

- Kurt Vonnegut, *Cat's Cradle*

• **Philosophy 204 – Philosophy of Science**

Section 01 - #40957

Fall 2022

T/Th 4:35 PM – 6:20 PM

In-Person Modality - Kalmanovitz Hall 363

Course satisfies graduation requirement for core *Area D: Philosophy, Theology, and Religious Studies*

• **Instructor Info**

Instructor: J. P. Carboni

E-mail: jcarboni@usfca.edu

Mailbox: Philosophy Department Office – Kalmanovitz Hall 161

Office Hours: **Thursday 10:30 AM – 11:30 AM: Office Hours for the Fall 2022 term will be held over Zoom. Please use the link provided in CANVAS Modules. You will be placed in a waiting room until my office is empty; meaning, please wait to be admitted once you log in.**

• **Important Dates**

- Semester Start Date (Faculty Due Back): 8/18
- First Course Date: 8/23
- Last Day to Add Course: 8/29 (Monday)
- Last Day to Drop Course: 11/4 (Friday)
- Final Day of Class: 12/7
- Final Exam Period: 12/9 - 12/15
- Final Grades Due: 1/3

• **No Classes Held**

- Labor Day Holiday 9/5
- Fall Break 10/17 – 10/18 (Monday & Tuesday)
- Thanksgiving Break: 11/24 – 11/25 (Thursday & Friday)

• Course Description

Course Catalogue: “A critical examination of conflicting interpretations of scientific practice. Major issues include the nature of scientific explanation, the development of instrumentation and experimental techniques, how scientific knowledge is validated, whether theories are to be interpreted as literally true or as instrumentally adequate, scientific revolutions, and the rationality of science.”

• Required Textbook

Worldviews: An Introduction to the History and Philosophy of Science, 3rd Edition
by Richard DeWitt. ISBN - 9781119118893

Note: There may be some additional readings which I will post to CANVAS in the folder “Additional Required Readings.” See reading schedule below for complete breakdown of all readings and assignments.

• Philosophy 204 Learning Outcomes

- 1) Accurately summarize the central questions and debates facing philosophers of science today
- 2) Compare and contrast the predominant philosophical positions on such questions and debates
- 3) Explain the importance of such issues by appeal to specific episodes from the history of scientific thought
- 4) Exercise an improved ability to think philosophically about today’s scientific research and findings
- 5) Understand the historical progress of scientific exploration of the cosmos

• Philosophy 204 General Learning Outcomes

- 1) Understand the value of thinking philosophically by reflecting on the meaning of one’s own life, the conceptual foundations of human actions and beliefs, the nature of the self and of human responsibility
- 2) Understand and discuss coherently the central philosophical issues, such as the problem of evil, the existence of God, free will, the mind/body relation, human knowledge, and the question of being
- 3) Demonstrate an ability to identify and articulate, both orally and in writing, the primary philosophical themes and issues found in the writings of the major philosophers
- 4) Demonstrate an ability to evaluate philosophical arguments critically, both orally and in writing, using philosophical methods that have been developed by either historical or contemporary philosophers

See the following link for all Area D: Philosophy, Theology, and Religious Studies learning outcomes: <https://catalog.usfca.edu/content.php?catoid=22&navoid=3079>

See the following link for a detailed explanation/rubric for D1. Philosophy Higher Order Learning Goals (HOLGS):

<https://myusf.usfca.edu/sites/default/files/D1PhilosophyHOLGRubric-3.pdf>

See the following link for the most recent Learning Outcome Assessment for Area D1 Learning Outcomes: <https://myusf.usfca.edu/arts-sciences/faculty-resources/academic-effectiveness/usf-core-curriculum/assessment/report-set-1>

• Core Curriculum Learning Outcomes

The following general learning goals guide the development of the curriculum. Students should:

- 1) Be able to speak and write effectively
- 2) Be able to express ideas in an articulate and persuasive way
- 3) Be able to understand a mathematical problem and design a solution
- 4) Be exposed to a wide breadth of disciplines, as a foundation for a general liberal arts education
- 5) Understand the process of seeking truth and disseminating knowledge
- 6) Understand historical traditions
- 7) Appreciate and be able to critically evaluate the arts
- 8) Understand the nature of society and the relationships between individuals and groups
- 9) Understand the nature of the physical world, the uses of the scientific method, and the implications of technology
- 10) Comprehend the variations of people's relationship with God and develop respect for the religious beliefs of others
- 11) Understand the moral dimension of every significant human choice, taking seriously how and who we choose to be in the world
- 12) Understand and value cultural and ethnic differences in a multicultural society and globalizing world
- 13) Gain the skills and experiences necessary to link education to service
- 14) Be exposed to opportunities to work for social justice

• General Values Objective

As with all courses at the University of San Francisco, this course will adhere to and promote the general values promoted within a Jesuit Education. As stated on *USFCA.com*, Jesuit values focus on **“Taking action against the things that degrade human dignity; tending to the whole person; uniting the mind and heart; amplifying the voices of the underserved, disadvantaged, and poor — these humanistic ideals have guided Jesuits for centuries.”**

For more information regarding the core values of the University of San Francisco, please see the following link: <https://www.usfca.edu/about-usf/who-we-are>

• University Student Standards of Conduct

Students are expected to adhere to the University Honor Code as outlined in the **Fogcutter Student Handbook**. This handbook can be found at: <https://myusf.usfca.edu/fogcutter>. The University Honor Code includes the following definition of academic integrity and a breakdown of each of the required standards of conduct:

Academic Integrity: **“Adherence to standards of honesty and integrity precludes engaging in, causing, or knowingly benefiting from any violation of academic integrity. Without regard to purpose, the following violations are prohibited:”**

- Cheating
- Plagiarism
- False Citations
- Submitting the Same Work for Multiple Assignments
- Submitting False Data
- Falsifying Academic Documentation
- Abuse of Library Privileges
- Abuse of Shared Electronic Media

For a detailed description of each of these required standards of conduct, please see the following link:

<https://myusf.usfca.edu/academic-integrity/honor-code>

All violations of Academic Integrity will result in an automatic failing grade on any assignment associated with the violation and student's action will be reported to the Philosophy Department Chair as well as to the Academic Integrity Committee at the following link:

https://cm.maxient.com/reportingform.php?UnivofSF&layout_id=126

• Course Standards of Conduct

In addition to the above university wide requirements, there are some additional requirements specific to this course that all students will be required to adhere to:

- ***In-Class Participation:*** Purposely “obstructing” the view point of another student in the classroom during classroom discussions is prohibited. This class will involve many discussions concerning the material assigned for homework and the material presented during the classroom lectures. This being a philosophy course, many of these discussions may challenge certain beliefs that you hold. Open dialog and proper methods of argumentation (which will be discussed) are not only expected but required for this class.

- ***Attendance/Participation:*** Students are expected to attend each class session. This class should involve many in-class discussions and *randomly assigned* in-class work. Students are expected to have completed the readings and participate in all in-class discussions. **Note:** All in-class work assigned must be completed during the normal class time. As a side note: if you send me an email with the subject heading, “I read the entire syllabus” you will receive ten extra credit points automatically in the class. Now back to the subject: If you miss a class or are late to class and miss an assignment, then you may NOT make up that missed assignment.

- ***Email Correspondence:*** Monday through Friday I check my account a *minimum* of ONCE a day (usually afternoon/evening). **To ensure a prompt reply**, all emails should be structured according to the following university guidelines.

<https://myusf.usfca.edu/marketing-communications/resources/email-resources/email-style-guide>

In addition to these linked guidelines, all emails sent to one of your instructors should include: ***Your name, your class, a clear description of your issue, concern, or question.*** Any email that does not contain each of these will be answered last.

• Disability Accommodations:

If you have a disability and require accommodations, you will need to provide disability documentation to Gleeson LL 20, (415) 422-2613. General information, including the specific eligibility process and documentation guidelines, can be found at the following link:

<https://www.usfca.edu/student-disability-services>. Please discuss your accommodation needs with me after class or during my office hours *before* the end of the third week of the semester.

Special Note: All instructors employed by the University of San Francisco are ‘mandatory reporters’ of suspected child abuse or neglect according to the *California Child Abuse and Neglect Reporting Act*. As such, I am bound to the requirements established by the Department of Education and the University of San Francisco. Documents outlining this requirement can be found at:

<https://myusf.usfca.edu/sites/default/files/USFAcknowledgmenttoReportChildAbuseForm.pdf>

• Evaluation/Homework Assignments

- **In-Class Assignments:** There will be a number of randomly assigned in-class assignments throughout the term. These assignments will be worth a total of 5 points each). At the end of the term, a total of 30 points will be possible. These assignments must be completed in-class – no make-ups for missed assignments will be allowed.

- **Quizzes:** As outlined on the weekly course breakdown below, there will be three types of quizzes in this class.

- (1) **Reading Quizzes:** Prior to each *new section* lecture/new topic, there will be a quiz to be completed prior to the lecture on that reading/subject (see weekly breakdown below for details). **These quizzes must be completed in CANVAS and must be completed prior to the scheduled class time.** Each Reading Quiz will be made available by 11:59 PM on the date stated in the weekly breakdown and will be available until that scheduled class begins. **NOTE: No make-ups will be given for missing a quiz.** These quizzes will be multiple choice and/or true and false. Each quiz will be worth 10 points. Once you begin a quiz, you will have 20 minutes to complete it.
- (2) **Lecture Quizzes:** This course is scheduled to meet Tuesday and Thursday evening. As illustrated in the weekly breakdown below, each class session will involve a lecture/class discussion on the material assigned for that class. At the end of each week (after Thursday’s lecture each week) students will be required to complete a short quiz on the lecture material provided during that week. This quiz will be available in CANVAS on **Friday by 11:59 PM** and must be completed no later than 4:35 PM on the following Tuesday (meaning, quiz must be completed before the start of the next class). Once you begin a quiz, you will have 20 minutes to complete it. Like each Reading Quiz, the Lecture Quizzes will be multiple choice and/or true and false. Each Lecture quiz will be worth 10 Points.
- (3) **In-Class Quizzes:** All in class quizzes (10 in total) will be taken during class. In-Class Quizzes will not be announced until administered (they are, effectively, pop-quizzes). You will have no more than 10 minutes to complete any given In-Class Quiz. **No make-ups will be given for any missed In-Class Quizzes.** If a class period has an In-Class Quiz (not all will) you will be provided with a one-time code that must be submitted in CANVAS and will allow you to begin the quiz. All In-Class quizzes will consist of no more than 2 multiple choice and/or true and false questions. Each quiz will

be worth a total of 5 points (totaling 50 points at the end of the term). All in-class quizzes (and all one-time codes) will be open from the point given in class for a total of ten minutes only.

Additional IMPORTANT Quiz Notes:

- 1) There will be no make-up quizzes if you miss a quiz (any type) unless there are *really good* reasons! **Please do not ask unless you have that *really good reason!***
Note: Not feeling like it or not paying attention to the syllabus is NOT a *really good reason!*
 - 2) To do well on these quizzes and thus to do well in the class, you should make sure to attend class, to actively participate in the lecture (as much as our present situation allows), and to complete the assigned readings
 - 3) The quiz breakdown can be a little confusing at first. **Thus, if you are confused in any way about the detailed quiz schedule, it is your responsibility to come and speak to me – ideally during my office hours.**
 - 4) If you have any issues during the quiz (like, for example, a system freeze) please **DO NOT email me.** Simply speak to me after the next class and we will resolve the issue.
 - 5) **LASTLY:** At the end of the term, I will drop the lowest score on each type of quiz
- **Writing Assignments:** There will be two writing assignments in this class. For each assignment, you will be provided with assignment topics, structural details, and a grading rubric two weeks prior to the due date for each essay. Assignments must be submitted to CANVAS no later than the date and time given in the prompt. Late essays will be docked 5 points for every day that they are late.

Important Assignment Dates:

Essay #1 Assigned: Tuesday 9/20
Essay #2 Assigned: Tuesday 11/1

Essay #1 Due: Thursday 10/6
Essay #2 Due: Tuesday 11/29

A detailed grading rubric and philosophic research/analysis guidelines will be provided alongside the assignment prompt. However, below are some general links that you should consult prior to beginning the writing process for this class or any class that you take:

- USF Writing Center:

<https://myusf.usfca.edu/lwsc/writing-center/philosophy>

- USF Editorial Style Guide:

<https://myusf.usfca.edu/marketing-communications/resources/editorial-resources/editorial-style-guide>

- USF Writers' Guide:

<https://myusf.usfca.edu/marketing-communications/writers-guide>

- External Resources Guide (good research links):

<https://myusf.usfca.edu/arts-sciences/philosophy/external-resources>

- **Examinations:**

There will be two examinations in this class (a midterm and a final exam). There will be a comprehensive review held during the class session before each exam. There will be no make-ups on exams except with “extraordinary” circumstances, so schedule outside

activities accordingly. **Note:** Extraordinary circumstances do not include *personal* athletic activities, vacations, car not starting (not that any of these are really relevant in our situation) ... so, not feeling like it, was not prepared, etc. A doctor's note (or something similar) will be required to schedule a make-up exam.

Midterm Exam: See Week 8 Schedule Below

Final Exam: Tuesday, December 13 from 5:30 PM – 7:30 PM

• Grading Scale

All essays will be graded based on a 100-Point scale according to the following breakdown:

A Outstanding (100 - 95 pts)	A- Very Good (94 - 90 pts)
B+ Above Satisfactory (89 - 86 pts)	B Satisfactory (83 - 85 pts)
B- Below Satisfactory (82 - 80 pts)	C+ Above Average (79 - 76 pts)
C Average (75 - 73 pts)	C- Below Average (72 - 70 pts)
D+ Poor High (69 - 66 pts)	D Poor Low (65 - 60 pts)
F Unacceptable (59 and lower pts)	

• Total Points Breakdown

- **Quizzes:**
 - 1) Reading (16 x 10) 160 Points (150 after dropped quiz)**
 - 2) Lecture (12 x 10) 120 Points (110 after dropped quiz)**
 - 3) In-Class (10 x 5) 50 Points (45 after dropped quiz)**
- **Essay #1: 100 possible pts**
- **Essay #2: 100 possible pts**
- **Examinations: 220 possible pts (110/per exam)**
- **In Class Group Work: 50 possible points**

Total Points Possible: 800 (775 after dropped quizzes)

Final Grade Breakdown: A 800/790 – 750; A- 749 – 716; B+ 715 – 684; B 683 – 652; B- 651 – 632; C+ 631 – 597; C 596 – 580; C- 579 – 556; D+ 555 – 525; D 524 – 500; D- 499 – 476; F 475 or Lower Points

• Detailed Weekly Reading/Assignment Schedule: Reading/Assignment Schedule

Note: (1) All **Reading Quizzes** will be posted to CANVAS and must be completed before 4:35 PM on the due date given.

(2) All **Lecture Quizzes** will be posted to CANVAS on or before each Friday by 11:59 PM (when assigned). All given Lecture Quizzes are before class the following Tuesday – no later than 4:35 PM

(3) **Note: If any particular quiz fails to be posted on or before 11:59 PM on the date indicated, you will receive full credit on that quiz**

Week 1: (8/22 – 8/26)

For Tuesday Class Introduction – In-Class Exercise

For Thursday: **In Class Assignment #1: Are We Entitled to Our Opinions? (Short Reading Posted to Canvas – See Additional Readings Folder in**

Modules) – And – briefly - what is Philosophy of Science (Read Dewitt Introduction – See Additional Readings Folder in Modules)

- No Reading Quiz Due Today
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Week 2: (8/29 – 9/2)

For Tuesday: **The Nature of Truth** - Dewitt, Chapter 2: *Truth*
• **Due before class begins at 4:35 PM: RQ#1**

For Thursday: **The Nature of Facts** – DeWitt, Chapter 3: Empirical Facts and Philosophical/Conceptual Facts

DUE: Tuesday 8/30 Reading Quiz #1 (Posted to CANVAS on 8/26)

Week 3: (9/5 – 9/9)

For Tuesday: **Good Science and Bad Science** – DeWitt, Chapter 4 Confirming and Disconfirming Evidence and Reasoning
• **Due before class begins at 4:35 PM: LQ#1 (Posted on 9/2)**
• **Due before class begins at 4:35 PM: RQ#2 (Posted on 9/2)**

For Thursday: **What Do You Mean It's False?** – DeWitt, Chapter 7, Falsifiability
• **Due before class begins at 4:35 PM: RQ3 (Posted on 9/5)**

DUE: Tuesday 9/6 Lecture Quiz #1 & Reading Quiz #2 (Posted to Canvas Friday 8/28)
Thursday 9/8 Reading Quiz #3 (Posted to Canvas Tuesday 9/5)

Week 4: (9/12 – 9/16)

For Tuesday: **Method, Man: What is this Method You Keep Talking About? - What is the Scientific Method and is it Reliable?** – DeWitt, Chapter 5: The Quine–Duhem Thesis and Implications for Scientific Method
• **Due before class begins at 4:35 PM: LQ2 & RQ4**

For Thursday: **Humpty Dumpty Had a Great Fall, Probably** – Chapter 6: *Philosophic Interlude: Problems and Puzzles of Induction*
• **Due before class begins at 4:35 PM: RQ5**

Due Before Class On:

- 1) **Tuesday 9/13 Lecture Quiz #2 & Reading Quiz #4 (Posted to Canvas Friday 9/9)**
 - 2) **Thursday 9/15 Reading Quiz #5 (Posted to Canvas Tuesday 9/13)**
 - 3) **Tuesday 9/20 Lecture Quiz #3 (Posted to Canvas Friday 9/16)**
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Week 5: (9/19 – 9/23)

For Tuesday: **Philosophic Interlude: Is the *Matrix* a Documentary Film?**
Reading: *Are We Living in a Computer Simulation?* By Nick Bostrom
(Reading Posted to CANVAS in Additional Readings Folder)
• **Due before class begins at 4:35 PM: LQ3 & RQ6**
• **Provided: Essay Prompt #1**

For Thursday: **Philosophic Interlude: A Short Discussion of Alternative Facts Or ... How I Stopped Worrying and Came to Love the Truth (No Reading Due)**

Due Before Class On:

1) Tuesday 9/20 Lecture Quiz #3 & Reading Quiz #6 (Posted to Canvas Tuesday 9/16)

2) Provided: Tuesday 9/20 - Essay Prompt #1 Provided

Week 6: (9/26 – 9/30)

For Tuesday: ***Say What You Will, But Togas Are Just Darn Comfortable: Science qua Teleology – DeWitt, Chapter 9:*** The Structure of the Universe on the Aristotelian Worldview
• **Due before class begins at 4:35 PM: LQ4 & RQ7**

For Thursday: **Aristotle Continued – Teleology: It's all in Your Understanding of the End Game, Man! – No New Reading**
• **Due before class begins at 4:35 PM: RQ8**

Due Before Class On:

1) Tuesday 9/27 Lecture Quiz #4 & Reading Quiz #7 (Posted to Canvas Friday 9/23)

2) Thursday 9/29 Reading Quiz #8 (Posted to Canvas Tuesday 9/27)

Week 7: (10/3 – 10/7)

For Tuesday: ***Just Who Did Aristotle Think He Was? – DeWitt, Chapter 10*** The Preface to Ptolemy's *Almagest: The Earth as Spherical, Stationary, and at the Center of the Universe & Chapter 13: The Ptolemaic System*
• **Due before class begins at 4:35 PM: LQ5 & RQ9**
• **Provided in class: Midterm Exam Study Guide**

For Thursday: ***Catch – Up If Needed (It Usually Is!) & Midterm Review***
• **Due before 11:59 PM on Friday 10/7: Essay #1 – Submit as PDF using link in CANVAS**

Due Before Class On:

1) Tuesday 10/4 Lecture Quiz #5 & Reading Quiz #9 – RQ9 On Chapter 10 Only (Posted to Canvas Friday 9/30)

2) Friday 10/7 before 11:59 PM → Essay #1 Due in CANVAS (See Essay #1 Prompt for Submission Instructions)

Week 8: (10/10 – 10/14) – **Midterm Week**

For Tuesday: *In-Class Assignment* (Materials provided in-class) & further review for Midterm Exam if needed

For Thursday: *Midterm Exam 10/13 (Normal Class Time – Exam Posted to CANVAS in the “Examinations Folder” – Please follow all instructions listed on the Midterm Exam Review Guide)*

DUE: No Quizzes Assigned Week 8 (Except for Lecture Quiz #6 which is due on Thursday 10/20 – Week 9 – Will be posted to Canvas on Friday, 10/14)

Week 9: (10/17- 10/21) – No Class Monday or Tuesday of Week 9

For Tuesday: *No Class Held*

For Thursday: *What Happens When *^#%@# Gets Crazy, Yo: The Copernican Revolution Blew People’s Minds! – DeWitt, Chapter 14 The Copernican System*
• *Due before class begins at 4:35 PM: LQ6 & RQ10*

Due Before Class On:

1) Thursday 10/20 Lecture Quiz #6 & Reading Quiz #10 (Posted to Canvas Friday 10/14)

Week 10: (10/24 - 10/28)

For Tuesday: *Copernicus Continued: The Philosophic Implications of Copernicus*
• *Due before class begins at 4:35 PM: LQ7 & RQ11*

For Thursday: *Two Totally Rad Dudes – Dude 1: Tycho Brahe – DeWitt, Chapter 15 The Tychonic System; Dude 2: Johannes Kepler – DeWitt, Chapter 16: Kepler’s System*
• *Due before class begins at 4:35 PM: RQ12*

Due Before Class On:

1) Tuesday 10/25 Lecture Quiz #7 & Reading Quiz #11 (Posted to Canvas Friday 10/21)
2) Thursday 10/27 Reading Quiz #12 (Posted to Canvas Tuesday 10/25)

Week 11: (10/31 – 11/4)

For Tuesday: *Mystery: Who killed Johannes Kepler? - Finish Johannes Kepler – No New Reading Due*

Another Philosophical Interlude - Science vs. Pseudo-Science
Read Section 2, 3, and 5 in
<https://plato.stanford.edu/entries/pseudo-science/#PurDem>
• **Due before class begins at 4:35 PM: LQ8**
• **Provided during class: Essay Prompt #2**

For Thursday: **Finish Science vs. Pseudo-Science if needed**

Due Before Class On:

- 1) Tuesday 11/1 Lecture Quiz #8 (Posted to Canvas Friday 10/28)**
 - 2) Provided: Tuesday 11/1 - Essay #2 Prompt**
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Week 12: (11/7 – 11/11)

For Tuesday: ***Eppur Si Muove*** – DeWitt, Chapter 17: Galileo and the Evidence from the Telescope and start DeWitt Chapter 18: A Summary of Problems Facing the Aristotelian Worldview (Please begin Reading Chapter 18)

- **Due before 4:35 PM: LQ9 & RQ13**

For Thursday: ***Finish A Summary of Problems Facing the Aristotelian Worldview*** –& DeWitt, Chapter 21: Philosophical Interlude: What Is a Scientific Law?

- **Due before class begins at 4:35 PM: RQ14**

Due Before Class On:

- 1) Tuesday 11/8 Lecture Quiz #9 & Reading Quiz #13 (Posted to Canvas Friday 11/4)**
 - 2) Thursday 11/10 Reading Quiz #14 (Posted to Canvas Tuesday 11/8)**
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Week 13: (11/14 – 11/18)

For Tuesday: ***Newton: The Man With The Plan*** – DeWitt, Chapter 20: Overview of the New Science and the Newtonian Worldview & Chapter 22: The Development of the Newtonian Worldview, 1700–1900

- **Due before class begins at 4:35 PM: LQ10 & RQ16**

For Thursday: ***Did Einstein Want to Be a Stand-Up Comedian? He Already Had the Funny Hair!*** – DeWitt, Chapter 23: The Special Theory of Relativity **and** ***START: Einstein Gets a Hair Cut*** – DeWitt, Chapter 24: The General Theory of Relativity

Due Before Class On:

- 1) Tuesday 11/15 Lecture Quiz #10 & Reading Quiz #16 (Posted to Canvas Friday 11/11)**
-

Week 14: (11/21 – 11/25) – No Class on Thursday and Friday for Thanksgiving Break

For Tuesday: ***At the Microscopic Level, It Just Gets Weird*** – DeWitt, Chapter 26: Introduction to Quantum Theory: Basic Empirical Facts and the Mathematics of Quantum Theory

- **Due before class begins at 4:35 PM: LQ11**

For Thursday: **No Class Due to Thanksgiving Holiday**

Due Before Class On:

1) Thursday 11/19 Lecture Quiz #11 (Posted to Canvas on Friday 11/18)

Week 15: (11/28 – 12/2)

For Tuesday: *DeWitt, Chapter 28 – What Was Kayne Thinking? ... sorry, I meant Quantum Theory and Locality: EPR, Bell's Theorem, and the Aspect Experiments*

- **Due before class begins at 4:35 PM: LQ12 & RQ17**
- **Due before 11:59 PM: Essay #2 – Submit a PDF copy using link in CANVAS**

For Thursday: **Is Evolution Real – Let's Evolve... an Answer** – *DeWitt, Chapter 29: Overview of the Theory of Evolution*

- **Due before class begins at 4:35 PM: RQ18**

Due Before Class On:

1) Tuesday 11/29 Lecture Quiz #12 & Reading Quiz #17 (Posted to Canvas Friday 11/25)

2) Thursday 12/1 Reading Quiz #18 (Posted to Canvas Tuesday 11/28)

3) Essay #2 Due 11/29 before 11:59 PM – See Prompt for Submission Instructions

Week 16: (12/5 – 12/9) - NOTE: December 7th is the final day of instruction for the semester

For Tuesday: ***Why I'm Always Right ... Can Science Tell Us What's Right and Wrong?*** – *DeWitt, Chapter 28: Reflections on Evolution, Section on Morality and Ethics Only*

For Thursday: **Finish Lecture from Tuesday and Final Exam Review**

DUE:

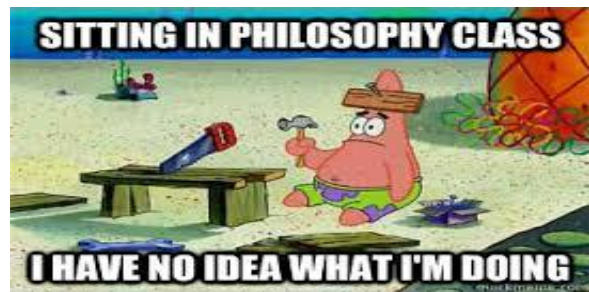
Tuesday 12/6 Lecture Quiz #13 (Posted to Canvas Friday 12/2)

Provided: Tuesday 12/6 Final Exam Study Guide Provided

Week 17: (12/9 – 12/15)

Final Examination Week: The Final Exam for this class will be taken in CANVAS (like the Midterm Exam) on Tuesday, December 13 from 5:30 PM – 7:30 PM

Welcome to Phil 125!



Note: Minor changes may be made to the syllabus as the semester progresses. Instructor will inform you if changes to the syllabus are made.

Addendum #1: How This Course Will Meet Area D-3 Learning Outcomes:

• Philosophy 204 Learning Outcomes

- 1) Accurately summarize the central questions and debates facing philosophers of science today
- 2) Compare and contrast the predominant philosophical positions on such questions and debates
- 3) Explain the importance of such issues by appeal to specific episodes from the history of scientific thought
- 4) Exercise an improved ability to think philosophically about today's scientific research and findings
- 5) Understand the historical progress of scientific exploration of the cosmos

Accurately summarize the central questions and debates facing philosophers of science today

This LO will be met in the following ways in this course:

- (1) Each of the readings to be completed in the course directly concern each of these learning objectives; however, there are some specific readings that directly confront issues addressed in LO1. These readings being: Week 2, 3, 4, 5 & 11 which will include readings on the concepts of epistemology and the relationship between facts and alternative facts, the infamous problems of Induction and a discussion of what science is versus what pseudo-science is
- (2) The students' ability to reach these outcomes will be measured in 3 key ways: (A) Readings, Lectures, and in-class quizzes for each of these readings/lectures; (B) two general essays concerning one or more of these topics; (3) Examinations to be completed during week 8 and week 17.
- (3) There will also be a reading quiz as well as a lecture quiz for each new reading/week's lecture.

Compare and contrast the predominant philosophical positions on such questions and debates

This LO will be met in the following ways in this course:

- (1) Readings on Induction and Deduction in relation to how we gain knowledge in the sciences as well as whether or not reality can be understood in any measurable sense and used to help us establish reliable claims to knowledge.
- (2) Reading Quizzes to be completed prior to classroom lecture on each of the main readings for each these theories.
- (3) Lecture Quizzes to be completed after class discussions for each of these selections.
- (4) Periodic in-class quizzes to be completed during class.
- (5) An essay written specifically comparing and contrasting major philosophical debates in the philosophy of science.
- (6) The 1st examination in this course which will include material on What Science is, what is the nature of knowledge in relation to the problem of induction, what is science vs what is pseudo-science, and the nature of opinion and the nature of facts.
- (7) The 2nd examination will include material on the general movement of knowledge and what is considered a fact in the history of science.

Explain the importance of such issues by appeal to specific episodes from the history of scientific thought & Understand the historical progress of scientific exploration of the cosmos.

This LO will be met in the following ways in this course:

- (1) The 2nd examination will include material on the general movement of knowledge and what is considered a fact in the history of science.
- (2) There will be a number of readings/quizzes on subjects in the history of scientific investigation and what was considered knowledge beginning with Aristotle and the Greeks and ending with a discussion of both quantum theory and string theory as well as a discussion of Darwin's Theory of Natural Selection – included in each of these discussions is an exploration about what this tells us about knowledge and the method of understanding
- (3) An essay exploring the progression of how philosophers/scientists have understood the nature of the universe and reality and what this can tell us about our world

Exercise an improved ability to think philosophically about today's scientific research and findings

This LO will be met in the following ways in this course:

- (1) This course will involve, starting on day 1, an analysis of arguments; meaning, we will address in this course what an argument is, what it means for an argument to be structured well/poorly, and how we go about evaluating arguments.
- (2) There will be two essay assignments to be written in this course.
- (3) Students are expected to not only be in class but to participate in class.
- (4) General Course readings on both traditional philosophical concerns (how we understand the self and how we understand the idea of knowledge) as well as contemporary issues in the philosophy of science (do we live in a computer simulation).
- (5) Reading, Lecture, and In-Class quizzes to be completed by the students after the majority of reading assignments and weekly lectures.
- (6) Two research essays in which students will be required to research and evaluate traditional philosophical arguments and issues as they relate to the sciences.
- (7) Two Examinations which will measure the students' ability to think critically about what they have read and what we as a class have discussed during the course of the lectures.
- (8) In-Class written work that will involve answering hypothetical questions relating to concepts to be discussed during the course of the lecture.