PHIL 4311: PHILOSOPHY OF SCIENCE AND TECHNOLOGY
FALL 2017
DEPARTMENT OF POLITICAL SCIENCE AND PHILOSOPHY

PROFESSOR

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Email: sbadiola@angelo.edu
Office Phone: (325) 486-6105
Office Hours: MW 11:00-2:30; TR 11:00-12:00.
Others by appointment

Do not hesitate to contact me during regular office hours. You can come and visit, call me or send me an email. Let me know if we need to schedule an appointment for a different time that is convenient for both. Please allow me 24 hours to respond to your emails before you feel abandoned. I will be happy to assist you with any difficulty you may have regarding the course or any question about a particular issue.

COURSE DESCRIPTION

This course examines science and technology in a philosophical manner. The first part of the course explores the nature of scientific investigation first as conceived by logical positivism (the received view), and then as conceived by more historical and critical approaches. Some examples of the types of questions concerning philosophy of science are: What is science? How does a theory, or an explanation, earn the title of being scientific? What is the aim of science? How does a scientific method common to all the sciences? How do scientists move from one theory to the next? Are scientific theories true? Do they cease to be true once they are abandoned? What values are at work in the logic of scientific discovery? Is science “too human”? Is science objective? Is science intrinsically good? Is it good enough? Is the notion of a completed science incoherent? Are scientific theories and methods subject to social and political critique?

The second part of the class concerns the nature of technology and its impact on our lives. Among the questions we will be considering are: what is the nature of technology? Is technology value neutral? Is it a social construct? How should we think about technology? What are the limits to technological progress? What is the connection between science and technology? Does scientific knowledge make technology possible, or does improvement in technology make scientific inquiry possible? Is technology beneficial?

COURSE OBJECTIVES
Students will analyse and critically evaluate past and contemporary approaches to science and technology

Students will reflect on social responsibility linked to the use and creation of technology (SR2.1)

Students will develop their ability to read, analyse and write about readings regarding philosophical analysis of science and technology (SR2.2)

**STUDENT LEARNING OUTCOMES (IDEA)**

Upon completion of the course, you will:

1. Develop specific skills, competencies and points of view required by professional philosophers who teach philosophy (IDEA #4)
2. Develop skills in expressing yourself orally or in writing (IDEA #8)
3. Acquire skills in critical analysis by learning how to critically evaluate ideas, arguments, and points of view (IDEA #11)

**STUDENT LEARNING ASSESSMENT**

Student learning assessment will be measured by class participation, two tests, a journal and a term paper

<table>
<thead>
<tr>
<th>Assessment Type</th>
<th>Student Learning Outcome assessed</th>
<th>Weight as a Percentage</th>
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<tbody>
<tr>
<td>Class participation (critical analysis and discussion of reading assignments)</td>
<td>1, 2, 3</td>
<td>15</td>
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<tr>
<td>Attendance*</td>
<td>1, 2, 3</td>
<td>10</td>
</tr>
<tr>
<td>Reflective essays (3)</td>
<td>1, 2, 3</td>
<td>30</td>
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<tr>
<td>Tests (2)</td>
<td>1, 2, 3</td>
<td>45</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>100%</strong></td>
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</table>

*you can miss **up to five times for whatever reason**. You need not justify your absences. But remember that after 5 absences, you will not receive credit for class participation.

*One of the tests can be replaced by a research paper

**REQUIRED COURSE MATERIALS**
Recommended: Writing Philosophy (L. Vaughn). You can get this book for free when purchasing Klee’s Scientific Inquiry (ISBN: 9780199386369)

GENERAL CLASS RULES

- READ THE MATERIAL. You are expected to come to class prepared. Every reading assignment will allow you to follow the lecture and to participate in class discussion. Remember: reading philosophy requires time and patience. You should have questions regarding each day’s reading assignment. If you have no questions, re-read the assignment

- PARTICIPATE: Active participation is a vital component of the philosophical learning experience. Listening carefully, expressing doubts and concerns in a coherent manner (either orally or in writing), and responding to other’s philosophical concerns contribute to a deeper understanding of the issues at hand. It is important that you take good class notes so you can assimilate the material presented in class

- CHECK BLACKBOARD FREQUENTLY. Blackboard provides important information, such as, whether there is a quiz or not scheduled for next class, the amount of reading for a particular day, what we did on the day that you missed, your grade after a quiz, test or assignment, or any general announcement for the class

- ETIQUETTE: Be respectful when you address other people (either other students or me). You may disagree with what other people are defending. The challenge is to show the weaknesses in their arguments and to build better ones. Insults do not make good arguments. Attack arguments, not people. Also, when you send me an email, remember my name (Dr. Badiola) and make sure you tell me yours. Please make sure to check your ASU email account (@angelo.edu), in case I have to contact you at any point during the semester
  - Classroom use of electronic devices will be prohibited in case of misuse
  - HAVE THE COURTESY TO INFORM ME in advance if you intend to leave before class ends

THE ANGELO STATE UNIVERSITY HONOR CODE
Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding the Academic Honor Code, which is contained in both print and web versions of the Student Handbook.

In other words, when you submit your work, you claim that the work is yours. If someone else wrote it for you or you got it from someone else (internet, other student’s class...), then you are not the author and thus will get a zero for that assignment. Any idea that is not yours should be properly referenced.

**Religious Holidays**

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 from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence.

**Disabilities**

Please let me know if you have any special need due to any learning disability. Persons with disabilities which may warrant academic accommodations must contact the Student Life Office, Room 112 University Center, in order to request such accommodations prior to any accommodations being implemented. You are encouraged to make this request early in the semester so that appropriate arrangements can be made.

**Course Outline and Schedule**
<table>
<thead>
<tr>
<th>Course Outline</th>
<th>Tuesday</th>
<th>Thursday</th>
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</thead>
</table>
| **Philosophy of Science (readings from Robert Klee ed.)**  
  1. The Positivist Model and its Problems |  
  8/29  
  Course overview |  
  8/31  
  Book Introduction, section introduction, 1 (Rosenberg) & 2 (Suppe) |
|  |  
  9/5  
  3 (Putnam), 4 (Maxwell) & 5 (van Fraassen) |  
  9/7  
  7 (Duhem) & 8 (Popper) |
|  |  
  9/12  
  Popper (cont.)  
  9 & 10 (Quine) |  
  9/14  
  16 (Hempel & Oppenheim) |
|  |  
  9/19  
  **Essay 1** on the Positivist Model due at midnight  
  Section introduction section 6, 30 (Putnam) & 31 (van Fraassen) |  
  9/21  
  34 (Musgrave) |
|  |  
  9/26  
  Section Introduction; 19 (Kuhn), 20 (Kuhn) |  
  9/28  
  21 (Ian Hacking) 22 (Feyerabend) |
|  |  
  10/3  
  23 (Bloor) |  
  10/5  
  24 (Latour & Woolgar), 25 (Brown) |
|  |  
  10/10  
  26 (Boghossian) |  
  10/12  
  27 (Harding) |
|  |  
  10/17  
  28 (Pinnick); 29 (Gross & Levitt) |  
  10/19  
  **Essay 2** on Historicism and its aftermath (class presentation) |
|  |  
  10/24  
  **Test 1: Philosophy of Science** |  
  10/26  
  Introduction 1 (Heidegger) |
| **Philosophy of Technology (Readings from Kaplan ed.)**  
  1. Philosophical Perspectives  
  2. Technology and Ethics  
  3. Technology and Politics  
  4. Technology and Human Nature  
  5. Technology and Science |  
  10/31  
  2 (Dreyfus) |  
  11/2  
  8 (Bush) |
|  |  
  11/7  
  11 (Latour) |  
  11/9  
  12 (Jonas) |
|  |  
  11/14  
  17 (Winner) |  
  11/16  
  23 (Bostrom) |
<table>
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<tr>
<th>Date</th>
<th>Event Description</th>
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<tr>
<td><strong>11/21</strong></td>
<td>24 (Kurzweil)</td>
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<td><strong>11/23</strong></td>
<td>Thanksgiving Holiday</td>
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<td><strong>11/28</strong></td>
<td>*Zeynep Tufekci (Holland Symposium)</td>
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<td>*Philosophy Club: Video-forum</td>
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<td><strong>11/30</strong></td>
<td>28 (Elliot)</td>
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<td>Essay 3 due at midnight</td>
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<tr>
<td><strong>12/5</strong></td>
<td>Review</td>
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<tr>
<td><strong>12/7</strong></td>
<td>Review</td>
</tr>
<tr>
<td><strong>12/12</strong></td>
<td>Test 2: Philosophy of Technology (10:30-12:30)</td>
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