PHIL.0216: SCIENCE & THE QUEST FOR TRUTH
MIDDLEBURY COLLEGE
Spring 2015
Twilight 301
Tuesdays and Thursdays, 8:00AM-9:15AM

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Course Website: http://s15.middlebury.edu/PHIL.0216A/
(all lecture notes are posted here)
Instructor Website: http://khalifa.org
Office Hours: Wednesdays 11:00AM-noon; Thursdays 1:15PM-2:45PM;
and by appointment

Course Description: According to conventional wisdom, science provides us with the most accurate representations of the world—but does that conventional wisdom hold up to critical scrutiny? Could scientific theories simply be effective tools for predicting and controlling our environment, regardless of how accurately they represent the world? Is science just one of many equally valid ways of interpreting the world or is it somehow privileged? Is science relative to a particular cultural worldview or is it objective?

Course objectives:
I have four principal objectives:
(1) To educate you about the different positions regarding the relationship between science and society, as well as the strengths and weaknesses of these positions.
(2) To cultivate your scientific literacy. By scientific literacy, I include a general understanding about science that anyone graduating from an institution of Middlebury’s caliber ought to have.
(3) To cultivate your critical thinking skills. By critical thinking skills, I include the abilities to recognize, analyze, and criticize arguments in the contexts of reading, writing, thinking, and discussion. I expect you to do this not only with others’ positions but, more importantly, with your own positions.
(4) To encourage you to be active learners. By an active learner I mean a person who has the curiosity, confidence, and passion to take the initiative to seek information that will make the recognition, analysis, and criticism of arguments—once again, both others’ and your own—more poignant, penetrating, and insightful.

Evaluation:
We will meet our objectives through three essays and through discussion. Here is the breakdown of their relative weights:

| Essays (25% per essay x 3): | 75% |
| Science example assignment: | 10% |
| Participation: | 15% |

Alphabetic final grades will then be assigned according to the following scale:

<table>
<thead>
<tr>
<th>87.5-90.4: B+</th>
<th>77.5-79.4: C+</th>
<th>59.5-69.4: D</th>
<th>0-59.4: F</th>
</tr>
</thead>
<tbody>
<tr>
<td>92.5-100.0: A</td>
<td>82.5-87.4: B</td>
<td>72.5-77.4: C</td>
<td></td>
</tr>
<tr>
<td>89.5-92.4: A-</td>
<td>79.5-82.4: B-</td>
<td>69.5-72.4: C-</td>
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There is no further rounding up or down of final grades.

A. Essays
1. **Formatting:** All writing assignments should be double-spaced, standard margins, etc. and in Times New Roman font. You will automatically lose a third of a grade on any assignment that does not follow these guidelines. For citations, use Chicago Author-Date, which can be found here\(^1\): 
   [http://www.chicagomanualofstyle.org/16/ch15/ch15_toc.html](http://www.chicagomanualofstyle.org/16/ch15/ch15_toc.html)

2. **Form:** All writing assignments will be graded not only in virtue of content, but also in terms of spelling, grammar, and overall clarity. If I can’t understand what you’re saying, then I can’t assess the content of your claims. Writing clearly demonstrates greater understanding of the text. You will also notice that writing assignments are generally rather brief in page requirements. This means you must be very efficient in your writing if you want to make an interesting point. Avoid being flowery—cut to the chase.

3. **Timeliness:** All assignments should be submitted during the class on which they are due. Any assignment submitted late (i.e. after class) receives an automatic 10 percentage-point penalty. It will be penalized 3 percentage points for every subsequent day it is late. Hence, anyone submitting an assignment after class but on the same day in which it is due can earn no more than 90% of the total points; on the next day, 87%; on the next, 84%; etc.

4. **Dean’s Excuses:** There are exceptions to the Timeliness rule. These include illness and family emergency. However, they do not include athletic, artistic, or other recreational commitments. Crucial to your receiving full credit in any circumstances in which you are absent is that you demonstrate initiative and accountability to me, even under adverse conditions. Specifically, if you feel that you have a legitimate excuse for submitting your assignment later than the specified due date and without penalty, you MUST take the following actions:
   (a) Wherever possible, you must speak with me *prior* to the due date of your assignment. Indeed, you should contact me *as soon as you* think that you have a legitimate excuse for a tardy submission. If I judge that you failed to do this, you will be penalized for tardiness *even if you* follow the remaining instructions.
   (b) For any assignment that counts for less than 10% of your final grade, **you** must initiate a conversation with me about how you will make up any assignments that you’ve missed. Failure to do so in a prompt manner will render you fully subject to the Timeliness rule.
   (c) For any assignment that counts for 10% or more of your final grade, you must not only initiate a conversation with me about how you will make up any assignments that you’ve missed, but you must ALSO acquire a Dean’s Excuse. The Dean’s Excuse serves the following functions in my course:
      (i) Official documentation to me that your reasons for handing in a tardy assignment are legitimate;
      (ii) A mandate for you to initiate a conversation with me about how you will make up any assignments that you’ve missed.
      (iii) A mandate for you to initiate this conversation as soon as possible. “As soon as possible” should be read “within a week in which I receive the Dean’s Excuse,” circumstances permitting. If you can attend class, then your circumstances permit you to speak with me about any work you need to make up.

A Dean’s Excuse does NOT serve the following functions in my course:
   (i) A permission slip for you to hand in your assignment at your earliest convenience.
   (ii) A mandate for me to seek you out in order to initiate a conversation with you about how you will make up any assignments that you’ve missed.

Failure to respect these guidelines will result in a reduction of your participation grade, AND your grade on any relevant assignment(s).

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\(^1\) There are several brands of reference management software (EndNote, RefWorks, Zotero, etc.) Zotero is freeware; RefWorks is free to all Middlebury users. I strongly recommend that you acquire one of these programs and learn how to use it. All of the programs are relatively easy to use, and any one of them minimizes your chances of violating the Honor Code.
5. **Objections to grades:** If you object to a grade you receive, send me an email with passages in your paper where you think I was being unfair. Provide reasons why my remarks for this passage were not fair. The email should also include times when you can meet over a one-week period. I will not discuss grades without reading an email first. This process should not be adversarial; rather, it is an extended application of your critical thinking skills. These policies are intended to facilitate clarity and communication, as well as to guarantee that I respond as thoughtfully as I can to your queries and concerns.

6. **Content:** All writing assignments must demonstrate sufficient understanding of the texts, including using only those parts of the text relevant to establishing your thesis. As writing good philosophical papers isn’t the easiest thing to do, you’re always welcome to discuss your writing with me during office hours. Also visit my website for additional guides:

   [http://community.middlebury.edu/~kkhalifa/teaching/guides/](http://community.middlebury.edu/~kkhalifa/teaching/guides/)

   I also strongly recommend reading the following:
   
   
   This is an excellent guide for learning how to write good philosophy papers, and will take you an evening to read. If there is sufficient interest, I will run an extra session on discussing this book.

**B. Science example assignment**

Once this semester, you will be asked to pair up and lead classroom discussion. Discussion leaders must co-author a short paper (2-3 pages) that briefly exposit scientific research to a general audience of non-specialists (the other members of the class). The example may be either historical (e.g. Copernicus) or contemporary (e.g. string theory); it may be from the natural or the social sciences. It should be chosen so as to raise interesting questions about the readings for which you’ll be the discussion leaders. (However, you need not raise these questions in the paper; save them for class.) The example may be an exposition of some science mentioned in the day’s readings, or it may be an example of your own choosing. As this is a new kind of assignment for this course, you’re strongly encouraged to talk things out with me, seek clarifications, etc. The paper should be emailed to the class no later than 18 hours before you are scheduled to present.

At the beginning of class, you will provide a brief synopsis of the research, and briefly state the interesting questions it raises with respect to the philosophical readings discussed that day. This should take no more than 5 minutes. A scientific example may raise interesting questions either by being a “perfect illustration” of the ideas being discussed, serving as a counterexample to the ideas being discussed, or as complicating certain distinctions that are taken for granted. Throughout the class, everyone will try to use this example (perhaps by comparing and contrasting it to others) to work through the text. You should be prepared to clarify questions about the science, once again keeping in mind that your audience will consist of non-specialists.

For students who are not presenting, you are expected to have read through the paper, and to have questions that will help us all to understand the science and its philosophical significance better.

**C. Participation**

This is a general evaluation of the amount of effort and astuteness you have demonstrated to me in the course. Relevant considerations include promptness, attendance, quantity and quality of both contributions and questions in class sessions, as well as discussions outside of class. This grade reflects your performance in all of those areas of the course other than the graded, written assignments.

The most important determinant of your participation grade is classroom discussion. Just having solid attendance will get you a 75 (C) for participation—so you need to talk. Comments and questions made in the classroom are the best means to have a high participation grade. Those made during office hours are still significant, so even if you are reluctant to talk in class, you should talk to
me outside of class.

**General expectations for discussion:**
Meeting our objectives is a collective effort. We’re working through this stuff together, so be ready to talk shop. Such preparation includes putting forth your best effort in answering the following questions:

(a) What is the main question that the author of the day’s reading is trying to answer? (I call this the issue of a text).
(b) What is the author’s thesis, i.e., how does the author answer the question in (a)?
(c) What are the author’s strongest arguments for believing his/her thesis?
(d) What are some ambiguities in the text? What did you find hardest to understand?
(e) What are some potential criticisms of the arguments or the thesis? What did you disagree with? Why?

You are strongly encouraged to write out your best guess at answers to all of these questions before coming to class. At times, I will also give you questions for the week’s readings that I believe will help you better understand and/or engage the text. You are strongly encouraged to write out your best guess to all of those questions before class as well. You will NOT be asked to submit your written answers to these questions, but experience suggests that students who think hard about these questions earn higher participation grades. For some additional suggestions, please see my guide on How to Read Philosophically:

http://community.middlebury.edu/~kkhalifa/teaching/guides/how-to-read.pdf

The most interesting discussions arise when there is critical engagement with the texts and with each other. We all have strong intuitions about what’s true, justified, moral, etc., and you are strongly encouraged to bring those intuitions into the discussion. However, intuitions are only useful if they’re put in conversation with texts we’re reading. So for every intuition you have, you should also have a passage from this week’s readings that supports or challenges that intuition. If you totally disagree with some thinker, come in with passages that just strike you as patently false (and be prepared to explain, give examples, etc. why you think it’s false). If some theorist really resonates with you, be ready to defend her/him against other students. If the text had you confused, come in with passages that had you scratching your head. In this last case, try to come up with tentative guesses as to what the passage is saying. In a similar vein, don’t be bashful about disagreeing with your peers. Just be civil.

**Student collaboration:**
Student collaboration is encouraged. You should feel free to talk for leisure or about a writing assignment. Generally, it’s best to do this before you start writing or after you’ve made a first pass at all of the questions on the paper. However, **at no point should you be copying another student’s work.** Any students who copy or let others copy their work will be considered in violation of the Honor Code.

**General expectations of student behavior:**
Participation also includes behaving like an adult. This includes exhibiting the virtues of civility, accountability, responsibility—particularly as these virtues apply to your education. For most of you, this is second nature. However, for the few of you who have not yet shed your adolescent tendencies, please note that failure to behave like an adult will be reflected in your participation grade. This includes taking the required initiative and responsibility of your workload in the event that you need a Dean’s Excuse (see above).

**Email etiquette/decorum:**
Different professors have different expectations about how they are addressed, and especially how they are addressed in email correspondences. I consider my norms to be “semiformal,” i.e. I expect some form of salutation with some acknowledgment that I’m a professor, but within those
constraints, you can be fairly colloquial. For instance, the following are all perfectly good ways to start an email: “Dear Professor Khalifa,” “Hey Prof,” “Hi Dr. K,” “Howdy Most Esteemed Educator,” etc. What’s not acceptable is an email either lacking a salutation or failing to acknowledge the fact that I’m a professor. This reads as if I’m a waiter taking your order, which is not a good professor-student dynamic. Examples of bad email introductions include diving into your email without addressing me at all, “Hi,” “Hey,” “Hello,” “Hello Kareem,” “Khalifa,” “Hey Khalifa,” etc. Just so you know, I don’t reply to emails if they don’t follow these very basic rules of decorum. Similar rules apply in face-to-face interactions.

**Travel:**
I realize that, in many cases, you can save a lot of money by leaving for the holidays a few days early. In these cases, if you give me at least two weeks notice, I will try my best to accommodate you; though the earlier you notify me of this, the better. In all cases, it’s your responsibility, not mine, to cover the required work.

**ADA Statement:**
Middlebury College seeks to provide reasonable accommodations for qualified individuals with documented disabilities. If you need an accommodation because of a documented disability, please contact Jodi Litchfield in the Office of Student Accessibility Services. Please do so at the beginning of the semester.

**Honor code:**
You are expected to abide by all the rules of Middlebury College’s honor code. Failure to do so will lead to reporting you to the proper university authorities.

**Texts:**
You need not purchase any books for this course. Wherever possible, I have provided hyperlinks to readings. You will need to be connected to Middlebury’s network to access most of them. If you cannot access an article, do not email me; go on Google Scholar and find the article. Where no online access to articles is provided, I have placed them in the HANDOUTS folder of the course server. If you’re unfamiliar with course servers, go to:
http://mediawiki.middlebury.edu/wiki/LIS/File_Servers#Connecting_to_File_Servers

**Schedule of Readings**
Please consult the website for the schedule of readings.
http://s15.middlebury.edu/PHIL0216A/