

## Philosophy 3520: Philosophy of Science

UNC Charlotte, Spring 2014

Section 001, M/W 3:30pm-4:45pm, Friday 107

**Instructor:** Trevor Pearce                      Office Hours: T/Th 10-11am or by appointment  
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### Description

What is science, anyway? Why does it progress? What is the relationship between science and values? In this course, an introduction to the philosophy of science, we will deal with these questions and more. We will begin by discussing how science might be distinguished from other forms of human inquiry. After investigating how scientists explain phenomena and confirm their theories, we will ask what unifies the various sciences. Most of the rest of the class will be devoted to two books: Thomas Kuhn's *Structure of Science Revolutions*, which explores scientific change, and Heather Douglas's *Science, Policy, and the Value-Free Ideal*, which covers important questions about the role that values play in science and the ways in which science informs policy.

### Required Texts

Gillian Barker & Philip Kitcher, *Philosophy of Science: A New Introduction* (Oxford UP, 2014)  
[ISBN #9780195366198]

Thomas Kuhn, *The Structure of Scientific Revolutions*, 3<sup>rd</sup> ed. (University of Chicago Press, 1996)  
[ISBN #9780226458083]

Heather Douglas, *Science, Policy, and the Value-Free Ideal* (University of Pittsburgh Press, 2009)  
[ISBN #9780822960263]

\*\*\*\* free e-book: <http://muse.jhu.edu/librarylink/uncc.edu/books/9780822973577> \*\*\*\*

All other texts are available on the course website at <http://moodle2.uncc.edu/>.

### Evaluation

15%	Attendance & Participation	
20%	Summaries	<b>Beginning January 13</b>
20%	Take-Home Exam	<b>February 21 to 24</b>
20%	Presentation	<b>April 21/23/28</b>
25%	Final Paper (1200 ± 200 words)	<b>May 5</b>

'Participation' means making comments and asking questions that reflect your having read and thought about the text under discussion. I will call on individual students following the small-group discussion or the summary write-up. **You must bring a copy of the relevant text to each class**, or you will not be able to effectively participate.

For the summaries, at the beginning of each class you will spend five minutes writing a paragraph that includes (a) the main claim or thesis of the reading for that day and (b) the arguments or evidence the author gives to support this claim or thesis. You may use books and notes. **I will collect and grade these summaries throughout the semester**, though not every class. If you arrive late, you must still hand in your summary at the same time as everyone else. Late summaries will not be accepted. Summaries submitted via e-mail will not be accepted. **Absence from class is not a valid excuse for not turning in a summary** unless you receive accommodation from the Dean of Students office (see below). The lowest summary grade will be dropped.

Topics for the Final Paper will be circulated by e-mail on **April 21**. I am happy to provide feedback on introductions or outlines if you allow me enough time. **It must be submitted by 7pm on May 5 at the Moodle 2 site via turnitin.com**. Papers that are too long or too short will be penalized a minimum of half a grade point. Late papers will be penalized half a grade point per day.

The take-home exam, which will consist of short- and long-answer questions, will cover the first part of the course plus Kuhn's *Structure*. **The exam will be circulated on February 21 and is due on February 24.**

In the last several weeks of the semester, groups of two students will find a news story relating to science and spend five minutes presenting it to the class. They will spend the next ten minutes leading class discussion of the story in light of what we have learned in the course. These presentations will be on the last three days of the semester, **April 21/23/28**.

### **Class Policies**

The use of cell phones, smart phones, or other mobile communication devices is disruptive, and is therefore prohibited during class except in emergencies. Students are permitted to use computers during class for note-taking and other class-related work only.

The standards and requirements set forth in this syllabus may be modified at any time by the course instructor. Notice of such changes will be by announcement in class or by written or e-mail notice.

### **University Policies**

All students are required to read and abide by the Code of Student Academic Integrity. Violations of the Code of Student Academic Integrity, including plagiarism, will result in disciplinary action as provided in the Code. Definitions and examples of plagiarism are set forth in the Code. The Code is available from the Dean of Students Office or at <http://legal.uncc.edu/policies/up-407>.

As a condition of taking this course, all required papers may be subject to submission for textual similarity review to Turnitin.com for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. No student papers will be submitted to Turnitin.com without a student's written consent and permission. If a student does not provide such written consent and permission, the instructor may: (i) require a short reflection paper on research methodology; (ii) require a draft bibliography prior to submission of the final paper; or (iii) require the cover page and first cited page of each reference source to be photocopied and submitted with the final paper.

Students who miss classes, examinations or other assignments because of a religious practice or belief must provide reasonable notice of the dates of religious observances on which they will be absent by submitting a Request for Religious Accommodation Form (<http://goo.gl/I1Ncv0>) to the instructor prior to January 22, 2014.

Students in this course seeking accommodations to disabilities must first consult with the Office of Disability Services (<http://ds.uncc.edu/>) and follow the instructions of that office for obtaining accommodations.

Requests for excused absences due to medical emergencies, family emergencies, military orders, or court orders should be made to the Dean of Students Office (<http://goo.gl/aqC0tU>). Requests must be received prior to March 26, 2014 for absences prior to that date.

## **Reading Schedule**

### **Jan. 8 – Introduction**

Barker & Kitcher, pp. 1-10

## **PART 1: THE ANALYTIC PROJECT**

### **Jan. 13 – Demarcation**

Barker & Kitcher, pp. 12-24

Popper, *The Logic of Scientific Discovery*, pp. 40-42

### **Jan. 15 – Confirmation & Theories**

Barker & Kitcher, pp. 24-37

### **Jan. 22 – Explanation**

Barker & Kitcher, pp. 38-49

### **Jan. 27 – Unity & Naturalism**

Barker & Kitcher, pp. 50-77

## **PART 2: SCIENTIFIC CHANGE**

Jan. 29

[SNOW DAY]

Feb. 3 – **Normal Science**

Kuhn, pp. 1-42

Feb. 5 – **Paradigms & Anomalies**

Kuhn, pp. 43-65

Feb. 10 – **Crisis**

Kuhn, pp. 66-91

Feb. 12

[SNOW DAY]

Feb. 17 – **Revolutions**

Kuhn, pp. 92-110

Feb. 19 – **“A Different World”**

Kuhn, pp. 111-135

Feb. 24 – **Resolution**

Kuhn, pp. 136-159

Feb. 26 – **Progress?**

Kuhn, pp. 160-173

Barker & Kitcher, pp. 78-105

Mar. 10 – **Sociology of Scientific Knowledge**

Barnes, *Scientific Knowledge and Sociological Theory*, pp. 1-44

### **PART 3: SCIENCE, VALUES, & POLITICS**

Mar. 12 – **Critical Voices**

Barker & Kitcher, pp. 106-135

Mar. 17 – **Gender**

Keller, “Gender and Science”

Mar. 19 – **Values & Politics**

Barker & Kitcher, pp. 136-163

Mar. 24 – **The Science Advisor**

Douglas, pp. 1-43

Mar. 26 – **The Value-Free Ideal**

Douglas, pp. 44-65

Mar. 31 – **Moral Responsibility**

Douglas, pp. 66-86

Apr. 2 – **[CANCELLED]**

Apr. 7 – **Types of Values**  
Douglas, pp. 87-114

Apr. 9 – **Objectivity**  
Douglas, pp. 115-132

Apr. 14 – **NO CLASS**

Apr. 16 – **Policy & Practices**  
Douglas, pp. 133-177

Apr. 21 – **Presentations**  
No reading

Apr. 23 – **Presentations**  
No reading

Apr. 28 – **Presentations**  
No reading