PHIL10171: Science, Nature and Social Values
Course Guide 2017/18

Course Organiser: Michela Massimi
(michela.massimi@ed.ac.uk)
Office Location: room 5.03 DSB
Office Hours (semester 2 only):
Thursday 1pm -3pm
(outside office hour only by appointment, please
email: michela.massimi@ed.ac.uk).

Course lecturers: Professor Michela Massimi

Course Secretary: Ann-Marie Cowe
(Annmarie.Cowe@ed.ac.uk)
1. Course Aims and Objectives

The course, consisting of lectures and seminars, addresses some central issues in contemporary philosophy of science. How does science represent nature? And to what extent do social values and human interests enter into the scientific image? These questions take us right to the heart of a host of interconnected metaphysical, epistemological and semantic notions. Are natural kinds carving nature at its joints? Or are they social constructs of scientific practices? How does this debate affect the way scientists think of biological species (e.g. cats), chemical kinds (e.g. gold), and social kinds (e.g. refugees)? Turning to causation: is there any causal glue holding the world together? Or is causation a projection of our human inferential habits? When it comes to laws of nature, should we regard laws as prescribing the way nature ought to be? Or just as describing empirical regularities that once again we as human agents in a society might identify as relevant? Looking at the debate on natural kinds (across the physical, life and social sciences), and at long-standing controversies on the nature of causation and laws of nature, this course explores the extent to which scientific investigation of nature might (or might not) be shaped by us as human agents with specific values and interests.

2. Intended Learning Outcomes

On completion of this course, the student will be able to:

1. Demonstrate knowledge of central debates in philosophy of science
2. Learn and understand relevant scientific topics
3. Articulate reasons for defending or rejecting specific philosophical views
4. Acquire the ability to bring scientific topics to bear on philosophical views
5. Improve skills in writing (esp. clarity and originality) and argumentation

3. Seminar Times and Locations

Semester 2: Thursdays 11.10 am - 1pm in room 1.20, Dugald Stewart Building.

4. Lecture Content

PART I: Natural Kinds

Week 1

Anti-essentialism about kinds

Essential readings:
Quine, W. V. (1969) ‘Natural kinds’. In Ontological Relativity and Other Essays. New
Week 2

Natural Kinds and Inductive Inferences. Boyd's homeostatic property cluster kinds

Essential readings:


Week 3

Nominalism and ‘promiscuous realism’ about kinds

Essential readings:


Week 4

Natural kind terms and meaning change

Essential readings:


PART II: CAUSATION

Week 5

Causal republicanism

Essential readings:


Week 6

Causal realism and causal processes
Essential readings:

**Week 7**

*Humeanism about causation*

Essential readings:

**Week 8**

*Causal perspectivalism*

Essential readings:

**PART III: LAWS OF NATURE**

**Week 9**

*Dispositional essentialism and laws of nature*

Essential readings:

**Week 10**
The non-governing conception of laws

Essential readings:

**Week 11**
**Lawlessness**
Essential readings:

5. **Readings**

In addition to the essential readings indicated under “4. Lecture Content”, here below there are some additional references, which can be useful for writing essays and expanding your knowledge of each of these topics.

**SOURCES FOR BACKGROUND KNOWLEDGE AND GENERAL REFERENCE**


Online encyclopaedia entries and database:

On causation, see the several entries on “causal processes”, the “metaphysics of causation” and others in the *Stanford Encyclopaedia of Philosophy*.

On laws of nature, see *Stanford Encyclopaedia of Philosophy* entry: http://plato.stanford.edu/entries/laws-of-nature/

For an extensive reading list and database of articles on these topics, see the AHRC Metaphysics in Science project:

http://www.bristol.ac.uk/metaphysicsofscience/bibliographies.html

6. Assessment Information

Undergraduate students will be assessed by:
• a mid-term essay of 1,500 words (worth 30%);
• weekly participation and coursework (worth 10%)
• a end-of-term essay of 2,500 words (worth 60%)
Feedback will be provided within 3 weeks of the submission date via Turn-it-in in LEARN, unless otherwise notified by email.

Weekly participation and coursework

Every student should come to class each week having carefully read the assigned texts for that week and written down (a) 1-2 sentences of what they take to be the one or two main claims of the text, and (b) no more than 500 words explaining a possible objection to the argument for that/those claims. Both (a) and (b) are due at the beginning of class. Consistent weekly participation in the seminar discussion is an integral part of the assessment for this course and is worth a total of 10% of your final mark. The course organiser will indicate week by week which reading is assigned for seminar discussion for the following week.

8. Learn

Please note, all the relevant essential readings are available online via LEARN for this course. Electronic submissions coursework is also via Turn-it-In in LEARN. For essay submission instructions please see the instructions on LEARN. Please note you should not include your name or matriculation number on coursework, only your exam number.

9. Useful Information

FLEXIBLE LEARNING WEEK (19 - 23 February 2018). Normal teaching slots will be suspended and in their place will be a range of other activities organised by the University of Edinburgh.

10. Common Marking Scheme

<table>
<thead>
<tr>
<th>Grade</th>
<th>Mark Range</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>A1</td>
<td>90-100</td>
<td>Excellent: Outstanding in every respect, the work is well beyond the level expected of a competent student at their level of study.</td>
</tr>
<tr>
<td>A2</td>
<td>80-89</td>
<td>Excellent: Outstanding in some respects, the work is often beyond what is expected of a competent student at their level of study.</td>
</tr>
<tr>
<td>A3</td>
<td>70-79</td>
<td>Excellent: Very good or excellent in most respects, the work is what might be expected of a very competent student.</td>
</tr>
<tr>
<td>B</td>
<td>60-69</td>
<td>Very Good: Good or very good in most respects, the work displays thorough mastery of the relevant learning outcomes.</td>
</tr>
<tr>
<td>Grade</td>
<td>Mark Range</td>
<td>Description</td>
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<tr>
<td>C</td>
<td>50-59</td>
<td>Good The work clearly meets requirements for demonstrating the relevant learning outcomes.</td>
</tr>
<tr>
<td>D</td>
<td>40-49</td>
<td>Pass The work meets minimum requirements for demonstrating the relevant learning outcomes.</td>
</tr>
<tr>
<td>E</td>
<td>30-39</td>
<td>Marginal fail The work fails to meet minimum requirements for demonstrating the relevant learning outcomes.</td>
</tr>
<tr>
<td>F</td>
<td>20-29</td>
<td>Clear fail The work is very weak or shows a decided lack of effort.</td>
</tr>
<tr>
<td>G</td>
<td>10-19</td>
<td>Bad fail The work is extremely weak.</td>
</tr>
<tr>
<td>H</td>
<td>0-9</td>
<td>Bad fail The work is of very little consequence, if any, to the area in question.</td>
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The marking scheme used for all coursework and for degree and resit examinations is the University Common Marking Scheme. The principal grades and descriptors, as approved by the School of PPLS, of the University's Extended Common Marking Scheme, are as follows.

**A1 90-100 Excellent**
Outstanding in every respect, the work is well beyond the level expected of a competent student at their level of study. It
- Shows creative, subtle, and/or original independent thinking
- Demonstrates breadth of knowledge and deep understanding of the subject matter
- Draws on a wide, relevant literature base
- Demonstrates an excellent standard of synthesis and evaluation and a critical and insightful analysis of the literature
- Is well focused, with concentration on the main issues to be addressed
- Presents a compelling case by means of clear, logically structured argument or debate, well supported with evidence
- Is written with flair
- Has, where appropriate, complete and correct referencing
- Is flawless in grammar and spelling

**A2 80-89 Excellent**
Outstanding in some respects, the work is often beyond what is expected of a competent student at their level of study. It
- Shows original, sophisticated independent thinking
- Demonstrates a thorough understanding of the subject matter
- Draws on a wide, relevant literature base
- Demonstrates critical and insightful analysis of the literature
- Is well focused, with concentration on the main issues to be addressed
- Presents a strong case by means of clear, logically structured argument or debate,
supported with evidence
• Shows a good standard of academic writing
• Has, where appropriate, complete and correct referencing
• Shows a high standard of grammar and spelling

**A3 70-79 Excellent**
*Very good or excellent in most respects, the work is what might be expected of a very competent student. It*
• Explores the topic under discussion fully
• Shows some complex and/or sensitive independent thinking Complexity and or sensitivity is reflected in the argument
• Demonstrates a sound understanding of the subject matter
• Draws in a wide relevant literature base
• Demonstrates critical analysis of the literature
• Is well focused, with concentration on the main issues to be addressed
• Presents a good case by means of clear logically structured argument or debate, supported by evidence
• Shows a competent standard of fluent academic writing
• Has, where appropriate, complete and correct referencing
• Shows a good standard of grammar and spelling

**B 60-69 Very Good**
*Good or very good in most respects, the work displays thorough mastery of the relevant learning outcomes. It*
• Demonstrates a good understanding of the area in question
• Draws on adequate references
• Demonstrates good synthesis, analysis, reflection and evaluation of the literature
• Concentrates on the main issues to be addressed
• Presents an adequate case by means of clear, well structured, logical argument supported with evidence.
• Has, where appropriate, complete and correct referencing of sources
• Shows a good standard of grammar and spelling

**C 50-59 Good**
The work clearly meets requirements for demonstrating the relevant learning outcomes. *It*
• Shows evidence of sufficient knowledge and understanding of the material
• Uses references appropriately to support the argument, though they may be limited in number or reflect restricted reading.
• Demonstrates limited critical analysis and evaluation of sources of evidence.
• Addresses the area in question clearly and coherently
• Has satisfactory structure, presentation, and expression
• Has, where appropriate, complete referencing of sources, though there may be minor flaws in referencing technique

**D 40-49 Pass**
The work meets minimum requirements for demonstrating the relevant learning outcomes. *It*
• Demonstrates a sufficient level of knowledge and understanding but at a basic level, and there may be minor inaccuracies
• Lacks detail, elaboration or explanation of concepts and ideas.
• Displays limited synthesis and analysis of the literature
• Presents a highly descriptive account of the topic with no real critical analysis
• Presents a weak argument which is not logically structured or which lacks clarity or is based on unsubstantiated statements
• Has, where appropriate, complete referencing of sources, though there may be flaws in referencing technique.
• Has largely satisfactory expression, though there may be minor spelling or grammatical errors

E 30-39 Marginal fail
The work fails to meet minimum requirements for demonstrating the relevant learning outcomes. It
• Does not demonstrate a sufficient level of knowledge and understanding
• Utilises only limited reference sources and offers poor analysis of them
• May not adequately address the area in question, because its content is too limited or because there are some inaccuracies
• Presents a poorly structured, poorly developed, or incoherent argument, or no argument at all
• Has an awkward writing style or poor expression of concepts
• Has incomplete or inadequately presented references
• Shows a lack of attention to spelling and grammar.

F 20-29 Clear fail
The work is very weak or shows a decided lack of effort. It
• Displays very poor or confused knowledge and understanding
• Does not address the area in question.
• Presents no argument or one based on irrelevant and erroneous content
• Displays an unacceptable academic writing style and/or presentation
• Has incomplete or inadequately presented references, if any

G 10-19 Bad fail
The work is extremely weak. It
• Displays no knowledge or understanding of the area in question
• Presents incomplete, muddled, and/or irrelevant material
• Provides no coherent discussion of the area in question
• Has incomplete or inadequately presented references, if any

H 0-9 Bad fail
The work is of very little consequence, if any, to the area in question. It
• Is incomplete in every respect.