PHIL10050: Advanced Topics in Philosophy of Science Course Guide 2016/17

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Office Location: room 5.03 DSB  
Office Hours (semester 2 only):  
Thursday 1.15pm -3.15pm  
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Course lecturers: Professor Michela Massimi

Course Secretary: Sam Bell (sam.bell@ed.ac.uk)

Department of Philosophy  
School of Philosophy, Psychology and Language Sciences  
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1. Course Aims and Objectives

This course gives an introduction to some central issues in contemporary philosophy of science. Our main focus will be the *metaphysics of science*, which can conveniently be divided into three main big themes: (1.) natural kinds; (2.) causation; (3.) laws of nature. These themes are deeply interconnected. Are there natural kinds ‘carving nature at its joints’? What notion of causation proves more congenial to an account of natural kinds? And are laws of nature ‘read off’ from natural kinds and, more in general, nature’s properties?

The course is accordingly divided into three Parts. In Part I, we concentrate our attention on natural kinds. Starting with some classical readings on the topic, we move on to more recent discussions that have revolved around the ability of natural kinds to support inductive inferences, the extent to which they reflect interest-relative classifications, and semantic issues concerning natural kinds terms and meaning-change. In Part II, we browse the voluminous literature on causation in a very selective way. Our goal will be to look at four main approaches to causation: a deflationist approach (going back to Russell), causal realism, Humeanism about causation, and an agent-based, perspectival view. In Part III, we present three main approaches to laws of nature: dispositional essentialism, the non-governing conception, and a deflationary account.

2. Intended Learning Outcomes

By the end of this course, you will get a well-rounded view of some key metaphysical topics in contemporary philosophy of science. You will be able to see and make connections among different areas of scientific inquiry, and reflect critically on the strengths and weaknesses of each approach.

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:  
Week 2
*Natural Kinds and Inductive Inferences. Boyd' 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*.


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](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%) **due on Thursday 2nd March, 2017, by 12pm (noon)**;
- weekly participation and coursework (worth 10%)
- a end-of-term essay of 2,500 words (worth 60%) **due on Thursday 27th April 2017, by 12pm (noon)**.

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.

Late coursework and extensions (as per PPLS Undergraduate Student Handbook 2016-7)

If assessed coursework is submitted late without an agreed extension to the deadline for an accepted good reason, it will be recorded as late and a penalty will be exacted. For coursework that is a substantial component of the course and where the submission deadline is more than two weeks after the issue of the work to be assessed, that penalty is a reduction of the mark by 5% of the maximum obtainable mark per calendar day (e.g. a mark of 65% on the common marking scale would be reduced to 60% up to 24 hours later). This applies for up to seven calendar days (or to the time when feedback is given, if this is sooner), after which a mark of zero will be given. The original unreduced mark will be recorded by the School and the student informed of it. These penalties follow the University’s Undergraduate Assessment Regulations:


Late coursework will only be accepted without penalty if you have provided a good reason and have been granted an extension.


Students are expected to monitor their workload, be aware of all deadlines and be able to organise themselves accordingly. In exceptional circumstances, an extension may be possible. However, an adequate reason must be given, and appropriate evidence must be provided.

Requests for an extension must be submitted at least 3 working days before the relevant deadline. An extension request form must completed and submitted to the teaching office together with relevant supporting evidence.

http://students.ppls.ed.ac.uk/assignments/

The Teaching Office will confirm whether the extension has been granted and this decision is final. Retrospective extensions will not be granted. Extensions include weekends and University holidays.

8. Learn

Please note, all the relevant essential readings are available online via LEARN for this course. Electronic submissions for all Honours 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

FESTIVAL OF CREATIVE LEARNING (20 - 24 February 2017). Normal teaching slots will be suspended and in their place will be a range of other activities organised by the Institute for Academic Development across the University of Edinburgh. More information will follow nearer the time so please check:
http://www.festivalofcreativelearning.ed.ac.uk

10. Common Marking Scheme

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<tr>
<th>Grade</th>
<th>Lower Bound</th>
<th>Description</th>
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| 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. |
| 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. |
| A3    | 70-79       | **Excellent**  
Very good or excellent in most respects, the work is what might be expected of a very competent student. |
| B     | 60-69       | **Very Good**  
Good or very good in most respects, the work displays thorough mastery of the relevant learning outcomes. |
| C     | 50-59       | **Good**  
The work clearly meets requirements for demonstrating the relevant learning outcomes. |
| D     | 40-49       | **Pass**  
The work meets minimum requirements for demonstrating the relevant learning outcomes. |
| E     | 30-39       | **Marginal fail**  
The work fails to meet minimum requirements for demonstrating the relevant learning outcomes. |
| F     | 20-29       | **Clear fail**  
The work is very weak or shows a decided lack of effort. |
| G     | 10-19       | **Bad fail**  
The work is extremely weak. |
| H     | 0-9         | **Bad fail**  
The work is of very little consequence, if any, to the area in question. |

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.