



Boston University Study Abroad
London

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The Historical Development of Scientific Thought: Integrative Scientific
Paradigms, Contemporary Applications and British Science
CGS NS 299
Summer 2014

Instructor Information

A. Name Dr. Peter E. Busher

Course Learning Objectives

1. To understand the process of contemporary science and its development.
2. To study and learn the impact of British science on evolving paradigms.
3. To study and learn about ancient and historic ways of timekeeping by comparing the concept of time in different historical cultures, and by examining ancient monuments in the UK.
4. To learn about the concept of the Earth as a clock, and to explore the developments made possible by the precise measurement of time. We will also investigate and discuss the influence of precise timekeeping on the development of the British Empire.
5. To investigate other natural ways of timekeeping (geologic, genetic) that humans use.
6. To connect the concept of time to the development of the Evolutionary Paradigm.
7. To gain an understanding of the modern Evolutionary Paradigm and its application in our modern world.
8. To learn about and better understand the relationship between human understanding of the physical universe and the development of our modern world.
9. To make connections between scientific disciplines and specifically between the physical sciences and the biological sciences.
10. To use your acquired knowledge about time and evolution as scientific concepts to understand the process of science and the interaction between science and society.

Assessment

1. There will be one **final exam** that is scheduled for **Thursday, July 17**. The grade on this examination will constitute **30%** of the overall grade. **This allows the student to demonstrate competence in understanding the scientific information presented in the course and in using this information for evaluation and analysis.**
2. There will be two (3) field trip exercises. Each is worth **10%**. **These exercises will allow the student to demonstrate competence in understanding how to use the scientific process to explain and understand the natural world.**
3. There will be one (1) field excursion/quiz/orientation event that is worth **5%** of your grade. **This will allow students to illustrate spatial and visual connections between their environment and science.**
4. There will be one (1) quiz – **Thursday, July 10** that is worth **15%**. **This allows the student to illustrate competence in understanding accepted scientific information.**

5. There is one (1) course project worth **20%**. **This allows the student to illustrate competence in analyzing scientific information, communicating scientific knowledge and connecting science and society.**
6. This course is a student-driven, active learning, experiential exercise in learning. To be successful students must attend and participate appropriately in all lectures and field trips. Failure to be an active, appropriate participant in the educational process can result in failure of the course.

Grading

Please refer to the Academic Handbook for detailed grading criteria and policies on plagiarism: <http://www.bu.edu/london/current-semester>

** Final Grades are subject to deductions by the Academic Affairs Office due to unauthorised absences.*

Attendance Policy

All Boston University Study Abroad London Programme students are expected to attend each and every class session, tutorial, and field trip in order to fulfill the required course contact hours and receive course credit. Any student that has been absent from two class sessions (whether authorised or unauthorised) will need to meet with the Directors to discuss their continued participation on the programme.

Authorised Absence:

Students who expect to be absent from any class should notify a member of Academic Affairs and complete an Authorized Absence Approval Form 10 working days in advance of the class date (except in the case of absence due to illness, for which students should submit the Authorised Absence Approval Form with the required doctor's note as soon as possible). **Please note: Submitting an Authorised Absence Approval Form does not guarantee an authorised absence**

Students may apply for an authorised absence only under the following circumstances:

- Illness, supported by a local London doctor's note (submitted with Authorised Absence Approval Form).
- Important placement event that clashes with a class (verified by internship supervisor)
- Special circumstances which have been approved by the Directors (see note below).

The Directors will only in the most extreme cases allow students to leave the programme early or for a significant break.

Unauthorised Absence:

Any student to miss a class due to an unauthorised absence will receive a **4% grade penalty** to their final grade for the course whose class was missed. This grade penalty will be applied by the Academic Affairs office to the final grade at the end of the course. As stated above, any student that has missed two classes will need to meet with the Directors to discuss their participation on the programme as excessive absences may result in a 'Fail' in the class and therefore expulsion from the programme.

Lateness

Students arriving more than 15 minutes after the posted class start time will be marked as late. Any student with irregular class attendance (more than two late arrivals to class) will be required

to meet with the Assistant Director of Academic Affairs and if the lateness continues, may have his/her final grade penalised.

Schedule for NS 299

<u>Week</u>	<u>Date</u>	<u>Lecture/Activity</u>	<u>Reading</u>
1	30 June	A.M. Arrival Day Orientation including area tour, student life Information session, flat meeting, book purchase and more P.M. 6:00 p.m. First Class Meeting – Bell Room (Crofton) <i>THIS MEETING IS MANDATORY</i>	TBA
	1 July	A.M. Lecture and discussion – Philosophy of Science P.M. NHM/Science Museum – Humans, Time, Science and Technology	
	2 July	A.M./P.M. 9:30 a.m. Orientation Event: Culture and Science in London	
	3 July	A.M. Lecture and discussion – Celestial motions and Neolithic Stone Circles P.M. Lab – Visit to the Royal Society First Assignment Due	
	4 July	A.M./P.M. Stonehenge, Salisbury and Avebury All day trip on Friday . Depart 43 Harrington Gardens at 4:00 a.m./Return London 3:00 – 4:00 p.m.	

WEEKEND – JULY 5 & 6

<u>Week</u>	<u>Date</u>	<u>Lecture/Activity</u>	<u>Reading</u>
2	7 July	A.M./P.M. All Day Trip to Greenwich and the Royal Observatory	Winchester
	8 July	A.M. Lecture and NHM exercise – The Earth P.M. Geological Society of London – The Map	Winchester
	9 July	A.M./P.M. All day trip to Eastbourne and the South Downs – Field Geology	Winchester
	10 July	A.M. Quiz and Lecture	Winchester

WEEKEND JULY 11, 12 & 13

<u>Week</u>	<u>Date</u>	<u>Lecture/Activity</u>	<u>Reading</u>
3	14 July	A.M./P.M. All Day Trip Down House	Watson
	15 July	A.M./P.M. All day trip to Cambridge	Watson
	16 July	A.M. Lecture and discussion P.M. Student Presentations Second Assignment Due	
	17 July	A.M. Final Exam Written Project Due	

Textbooks:

Required Readings – all are available in the library at 43 Harrington Gardens:

1. Simon Winchester, *The Map that Changed the World*
2. James Watson, *The Double Helix*

Additional readings may be posted on Blackboard: <https://lms.bu.edu>