

UGFN1000J In Dialogue with Nature

Lecturer: Dr. Yang Jie Jasmine (楊潔)

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Course homepage: <http://elearn.cuhk.edu.hk/> (CU eLearn system)

Common lecture: Lecturer: Dr. Yang Jie Jasmine

Friday 14:30 -15:15, Lady Shaw Bldg LT1

Discussion: Attend the one that you have registered.

Group	Time	Place
UGFN1000QT01	Mon 14:30-16:15	WHMY 501
UGFN1000QT02	Mon 16:30-18:15	WHMY 501
UGFN1000QT03	Tue 11:30-13:15	YIA506
UGFN1000QT04	Tue 13:30-15:15	YIA506
UGFN1000QT05	Thu 10:30-12:15	WHMY 401
UGFN1000QT06	Thu 12:30-14:15	WHMY 401

Course structure

Humans have long been curious about Nature. In the West, ancient Greek philosophers took the lead in exploring the physical world and the world of life with reason and hence laid the foundations of modern science. Scientists discovered physical laws, the laws governing life and even ways of controlling life. Implications of these discoveries force the humankind to re-assess their understanding of human understanding. On the oriental side of the globe, Chinese philosophers developed a different view of Nature. The comparison between Western and Chinese views will contribute to our understanding of both.

This course invites students to explore how the humankind investigated, understood and changed Nature, to study and compare the development of science in Western and Chinese cultures, and to reflect on the humans' place in Nature. Students will be required to read, discuss and write about a wide range of texts in philosophy, science and its history. Reading materials will be selected from influential literatures. Emphasis will be placed on students' capacity to respond critically to these texts in written as well as oral presentations.

Textbook: The textbook, *In Dialogue with Nature*, **Revised Second Edition**, is available at the campus bookstore as the semester begins. The price is \$160.

Course content and core readings:

The course is composed of 3 parts, each of which consists of several issues. Students have to read the core readings related to the issue before attending the discussion session.

Part I. Human Exploration of the Physical Universe

Core questions/issues	Texts	Core readings
What is true and what is real?	Plato, <i>Republic</i> / translated by C.D.C. Reeve. Indianapolis: Hackett Publishing, 2004. (JC71 .P513 2004)	Book VII (Verses 514-517)
	David C. Lindberg, <i>The Beginnings of Western Science</i> , 2nd edition. The University of Chicago Press, 2007. (Q124.95 .L55 2007)	Chapter 2 (Para. 28-39)
How did people handle the facts /phenomena they knew?	David C. Lindberg, <i>The Beginnings of Western Science</i> , 2nd edition. The University of Chicago Press, 2007. (Q124.95 .L55 2007)	Chapter 3 (Para. 1-41), Chapter 12 (Para. 1-2, 33-55)

What is scientific understanding?	I. Bernard Cohen, <i>The Birth of a New Physics</i> . W. W. Norton & Company, 1985.	Chapter 7 (Para. 1-25, 62-63)
	Isaac Newton, <i>The Principia</i> / A new Translation by I. Bernard Cohen and Anne Whitman. University of California Press, 1999. (QA803 .N413 1999)	“Definitions” 1-5, Para. 2 of p. 408, and “Axioms, or the Laws of Motion” Corollary 1

Part II. Human Exploration of the World of Life

Core questions/issues	Texts	Core readings
What are the laws of life? (Natural selection)	Charles Darwin, <i>The Origin of Species</i> , 1st Edition. (Full text available online: http://darwin-online.org.uk/)	Chapter 4 (Para. 1-6, 9-18, 39-46, 50-63, 68-71)
What is the code of life? (The discovery of DNA)	James D. Watson, <i>DNA: The Secret of Life</i> . New York: Alfred A. Knopf, 2003. (QH437 .W387 2003)	Chapter 1 (Para. 1-36), Chapter 2 (whole).
What impacts does manipulation of life bring?	Rachel Carson, <i>Silent Spring</i> . Boston: Houghton Mifflin, 1962. (QH545.P4 C38 1962)	Chapter 6

Part III. Our Understanding of Human Understanding

Core questions/issues	Texts	Core readings
What are the limit of scientific method and mathematics?	Henri Poincaré, <i>The Value of Science: Essential Writings of Henri Poincaré</i> New York: Modern Library, 2001. (Q175 .P7815213 2001)	<i>Science and Method</i> , Chapters I and III.
What is human mind?	Eric R. Kandel, <i>In Search of Memory: The Emergence of a New Science of Mind</i> . New York: W. W. Norton & Company, 2006. (WZ100 .K33 2006)	Chapter 4 (Para. 1-9), Chapter 28 (whole)
What do Chinese know about Nature? (<i>Yin, Yang</i> and five elements)	Joseph Needham, <i>The Shorter Science and Civilisation in China</i> Vol. 1. Cambridge: Cambridge University Press, 1978.	Chapter 10 (Para. 1-3, 13-42)
What has the scientific revolution revolutionized?	Nathan Sivin, ‘Why the Scientific Revolution Did Not Take Place in China – or Didn’t it?’ Web version: (revised 2005.8.24) http://ccat.sas.upenn.edu/~nsivin/scirev.pdf	Whole paper
	沈括 (著), 胡道靜 (校注), 《新校正夢溪筆談》。香港: 中華書局, 1975。 (English translation available in the textbook)	
What makes the modern science so unique?	William Dunham, <i>The Mathematical Universe: An Alphabetical Journey Through the Great Proofs, Problems, and Personalities</i> . New York: Wiley & Sons, 1994. (QA21 .D785 1994)	Chapter G
	Euclid, <i>Elements</i> / translated by Thomas L. Heath. Web version: http://www.perseus.tufts.edu	Book 1:“Definitions”, “Postulates”, “Common Notions”, and “Propositions” 1-5, 7-11, 13, 15-16, 18-20.

Intended learning outcomes:

- *comprehend* and *discuss* science-related texts.
- *identify* the essential characteristics of how human beings view Nature.
- *formulate* informed personal views on the societal implications of scientific explorations.
- *relate* the developments in natural sciences highlighted in the course to contemporary human condition.
- *evaluate* the scopes of application, achievement and limitations of highlighted scientific methods using multiple perspectives.

Assessment scheme:

Quizzes (the highest 4 out of 5, MC/short question)	24%
Participation in discussion (in-class: 18%; online discussion 6%; bonus 2%)	26%
One Reflective Journals (suggest: Chinese: 900-1500 words)	10%
One Term Paper (suggest: Chinese: 1800-2700 words)	30%
Group Presentation	10%

Please note that attendance will be recorded in every tutorial section. Anyone misses 25% (3 tutorial sections) or above of the tutorial sections will FAIL in the course.

Tentative schedule: See eLearn for updates.

Notes: 1. In case of clashes with public or university holidays, please refer to eLearn for announcement of class arrangement.

2. *DQ is for Discussion Question, completed through online discussion. Details and deadlines will be announced.

3. **RJ is for Reflective Journal.

4. ***TP is for Term Paper.

Wk	Date (M-F)	Tutorial Monday	Tutorial Tuesday	Tutorial Wednesday	Lecture Friday	Reading Assignment	Present group	Remark
1	Jan 09-13	Introduction	Introduction	Introduction	Plato/Lindberg	Text 1a+1b		
2	Jan 16-20	Plato/Lindberg	Plato/Lindberg	Plato/Lindberg	Lindberg	Text 2	Presentation grouping	Add/Drop :Jan 16-22
3	Jan 23-27	Holiday	Holiday	Holiday	Holiday	-		
4	Jan 30-Feb 3	Lindberg (Quiz 1)	Lindberg (Quiz 1)	Lindberg (Quiz 1)	Cohen+Newton	Text 3a	-	
5	Feb 06-10	Newton (DQ 1)	Newton (DQ 1)	Newton (DQ 1)	Needham	Text 9	1) <u>Newton</u>	
6	Feb 13-17	Needham (Quiz 2)	Needham (Quiz 2)	Needham (Quiz 2)	Sivin	Text 10a+10b	2) <u>Needham</u>	
7	Feb 20-24	Sivin	Sivin	Sivin	Dunham+Euclid	Text 11a+11b	3) <u>Sivin</u>	
8	Feb 27-Mar 03	Euclid (DQ 2)	Euclid (DQ 2)	Euclid (DQ 2)	Darwin	Text 4	4) <u>Euclid</u>	Mar 5, RJ due
9	Mar 06-10	Reading week						
10	Mar 13-17	Darwin (Quiz 3)	Darwin (Quiz 3)	Darwin (Quiz 3)	Watson	Text 5	5) <u>Darwin</u>	
11	Mar 20-24	Watson (Quiz 4)	Watson (Quiz 4)	Watson (Quiz 4)	Kandel	Text 8	6) <u>Watson</u>	
12	Mar 27-31	Kandel (Quiz 5)	Kandel (Quiz 5)	Kandel (Quiz 5)	Carson	Text 6	7) <u>Kandel</u>	
13	Apr 03-07	Carson	Carson	Holiday	Holiday		8) <u>Carson</u>	
14	Apr 10-14	Holiday	Special activity	Carson	Poincaré	Text 7	9) <u>Carson</u>	
15	Apr 17-21	Poincaré	Poincaré	Poincare	Term Paper Consultation			Make up quiz (Poincare)
16	Apr 24-28	Term Paper Consultation						
17	May 1-5							May 3, TP Due

Learning by doing: 動手做活動

Role-play discussion: 角色扮演討論

Study Support

1) Mini-dictionary, reading guide and study questions

For each text, we provide both a mini-dictionary and a reading guide. The mini-dictionary lists the English words and their corresponding Chinese translations in each paragraph of the text. The reading guide introduces the background and the basic ideas of the text. Attached with each reading guide, there is a set of study questions for you to practice. It is a great way to self-evaluate yourself and helpful for preparing the quizzes. The reading guide and the min-dictionary have been uploaded to the blackboard. Feel free to download them. (Link: <https://elearn.cuhk.edu.hk/>) If you simply want to practice the study questions, you can also use our **online study questions** (<http://www.cuhk.edu.hk/oge/gef/studyqs/nature/interactive>). These are identical to those in the reading guide.

2) Mobile App: DiaNable



An e-Learning mobile app *DiaNable* (**Version 3.0**) has been launched. The app serves as a **reading companion** for students to enhance their comprehension of the texts and self-evaluate their understanding. This latest version

includes: **Mini-dictionary** with audio pronunciations and **paragraph outline** for ALL the 11 texts; as well as study questions for six texts, namely *Text 2 (Lindberg)*, *Text 3 (Cohen-Newton)*, *Text 4 (Darwin)*, *Text 7 (Poincaré)*, *Text 8 (Kandel)* & *Text 9 (Needham)*. Three steps to download the mobile app:

1. Enter <https://campusapps.itsc.cuhk.edu.hk/store/> (or search for ‘cuhk app store’)
2. Input your Student ID and CWEM Password
3. Install *DiaNable* on your mobile device (Android Version and *iPhone/iPod/iPad Versions are available)

* This is a security alert from IOS 9 which requires user to accept and trust the App. Please refer to the following webpage for the instructions:

<https://support.apple.com/en-hk/HT204460>

3) PASS (Peer Assisted Study Sessions)

PASS consists of weekly one-hour, voluntary study sessions led by “PASS Leaders”, students who excelled in the same course and also understand the struggles faced by students. In PASS, students work together in a relaxed and supportive learning environment to improve understanding of the texts, develop effective reading strategies, and prepare better for tutorials, quizzes and assignments. For the timetable of PASS sessions, please visit <http://pass.oge.cuhk.edu.hk>.

PASS group	Date	Time	leader
NQ (UGFN1000Q)	13 Jan (Fri) Putonghua	15:30–16:30 MMW 715	Fiona

4) Reflective Journal and Term Paper Writing Workshops

Registration is **required** for attending the workshops.

- ✓ Registration is on a first-come, first-served basis.
- ✓ Please register online at least two days in advance.

You will be asked to show your CU Link card for admission.

- ✓ If you show up without your CU Link card, or without prior registration, you will be required to wait outside and may not be able to get a seat and a copy of the handouts.

Successful applicants will receive confirmation days before the workshop.

Registration: https://webapp.itsc.cuhk.edu.hk/ras/restricted/eventlist?id=14							
Content	Format	Scope	Language	Registration starts at	Date	Time	Venue
Reflective Journal Writing	Live Workshop	/	Putonghua	2023/01/16 00:00:00	Feb 1 (Wed)	15:30 – 17:15	LPN_LT
			English		Feb 3 (Fri)		MMW_703
			Cantonese		Feb 3 (Fri)		ELB_LT2
			Cantonese		Feb 6 (Mon)		10:30 – 12:15
	Online micro-modules AND complementary workshop*	UGFH	Cantonese	2023/01/25 00:00:00	Feb 17 (Fri)	15:30 – 17:15	CKB_108
			Putonghua		Feb 8 (Wed)		UCC_114
		UGFN	Cantonese		Feb 10 (Fri)		CKB_108
			Putonghua		Feb 15 (Wed)		UCA_312
Term Paper Writing	Live Workshop	/	Putonghua	2023/03/28 00:00:00	Apr 11 (Tue)	16:30 – 18:15	CKB_109
			English		Apr 14 (Fri)	15:30 – 17:15	MMW_703
			Cantonese		Apr 14 (Fri)	CKB_LT3	
			Cantonese		Apr 17 (Mon)	10:30 – 12:15	CYT_209A-B

5) Useful Information about Blackboard

- The Blackboard course pages are now open and available. Please make your course pages available when they are ready for students.
 - https://help.blackboard.com/Learn/Instructor/Ultra/Courses/Course_Availability#set-course-availability
- If you would like to transfer the course material from the old site to the new one, please refer to the following link for the guideline.
 - https://help.blackboard.com/Learn/Instructor/Course_Content/Reuse_Content/Copy_Courses

6) Micro-modules website – supplementary materials for UGFN

Micro-modules are supplementary courseware for “In Dialogue with Nature” that you can find on our dedicated website on KEEP. There are two main aims for these micro-modules. One is to explain the key concepts in our texts more thoroughly. Another, is to deepen and broaden the horizons of the core issues raised in the texts. You can access the micro-modules by:

- 1) **Login** to KEEP at <https://keep.edu.hk/> using your CUHK email address and CWEM password.
- 2) **Search** for “UGFN” or enter this link: <https://moodle.keep.edu.hk/course/view.php?id=113>
- 3) **Self-enrol** into the course for the first time with this self-enrolment key: **ugfn1000**



UGFN-animated

The 5-min whiteboard animations make learning UGFN fun! They enable step-by-step illustrations with voice-over narration to explain complicated and abstract ideas in an attractive and enjoyable way.

Playlist: https://www.youtube.com/playlist?list=PLzNn5Usq5oAlauG7Nx4bJUw4w9_L9_UMf

7) Academic honesty and plagiarism

Attention is drawn to University policy and regulations on honesty in academic work, and to the disciplinary guidelines and procedures applicable to breaches of such policy and regulations. Details can be found here:

<http://www.cuhk.edu.hk/policy/academichonesty/>

Supplement 1: UGFN1000 In Dialogue with Nature

Intended Learning Outcomes

(GE Course Proposal & Inventory System: https://cpi.itsc.cuhk.edu.hk/cpi/Public/dept_login.aspx)

By the end of the course, students should be able to:

-	<i>comprehend</i> and <i>discuss</i> science-related texts.
-	<i>identify</i> the essential characteristics of how human beings view Nature.
-	<i>formulate</i> informed personal views on the societal implications of scientific explorations.
-	<i>relate</i> the developments in natural sciences highlighted in the course to contemporary human condition.
-	<i>evaluate</i> the scopes of application, achievement and limitations of highlighted scientific methods using multiple perspectives.

Grade Descriptors

A / A-	Introspective performance: Outstanding performance on all (or almost all) learning outcomes. Students demonstrate: <ul style="list-style-type: none"> -thorough understanding and critical interpretation and application of the course material; -substantial evaluation of scientific ideas or theories from multiple perspectives with the support of relevant information; -well-informed judgment/personal views; -perceptive reflections on issues concerned
B+ / B / B-	General performance: Substantial performance on some learning outcomes which compensates for less satisfactory

	<p>performance on others. Students demonstrate:</p> <ul style="list-style-type: none"> -adequate understanding and appropriate interpretation and application of the course material; -good evaluation of scientific ideas or theories from multiple perspectives with the support of relevant information; -informed judgment/personal views; -unbiased reflections on issues concerned
C+ / C / C-	<p>Inconsistent performance: Satisfactory performance on some learning outcomes with a few weaknesses. Students demonstrate:</p> <ul style="list-style-type: none"> -basic understanding of the course material; -attempts to evaluate scientific ideas and theories but with omissions of some crucial perspectives and information; -inadequately supported judgment/personal views on most occasions; -tendentious reflections on issues concerned
D+ / D	<p>Incompetent performance: Barely satisfactory performance on a number of learning outcomes. Students demonstrate:</p> <ul style="list-style-type: none"> -limited evidence of comprehending the course material; -major difficulties in evaluating scientific ideas and theories from appropriate perspectives and identifying appropriate information; -mostly unfounded judgment/personal views; -superficial reflections on issues concerned
F	<p>Failed performance: Unsatisfactory performance on the majority of learning outcomes, OR failure to meet specified assessment requirement. Students demonstrate:</p> <ul style="list-style-type: none"> -confusion over or fundamental misrepresentation of the course material; -very little or no intention to evaluate different scientific ideas or theories; -very little or no attempt to formulate personal views; -very little or no attempt to reflect on issues concerned

† Adapted and modified from “University of Surrey Grade Descriptors: Undergraduate Programmes”; website: https://www.surrey.ac.uk/cead/resources/documents/University_of_Surrey_Grade_Descriptors.pdf

‡ Adapted and modified from “Grade Descriptors at HKU”: website: <https://www.cetl.hku.hk/grade-descriptors>

References:

1. “Guide to Grading System”: <http://www.res.cuhk.edu.hk/en-gb/general-information/guide-to-grading-system>
2. “University of Surrey Grade Descriptors: Undergraduate Programmes”; https://www.surrey.ac.uk/cead/resources/documents/University_of_Surrey_Grade_Descriptors.pdf
3. “Grade Descriptors at HKU”: <https://www.cetl.hku.hk/grade-descriptors>
4. Liljana, et al., “Designing descriptors of learning outcomes for Higher Education qualification”, *Procedia – Social and Behavioral Sciences* 46 (2012) pp.1306-1311; website: <https://www.sciencedirect.com/science/article/pii/S1877042812014218>

Please feel free to contact me if you need any assistance. Many thanks for your attention and I wish everyone a wonderful semester!