COLLEGE OF THE HUMANITIES

HUMS4103 (Fall Term) 2008
Some hints on what to expect!

Objective: to make you sufficiently literate regarding some of the significant scientific issues of the day so that you will be able to read the newspapers over the next few years with a critical eye. Also, I want to draw some connections between science and disciplines that you are more familiar with, namely, music and art.

I have invited five guest lecturers to assist me with lectures designed to explain to you the scientific background of their various areas of expertise in terms that a layperson can comprehend.

I can be reached at david_gardner@carleton.ca

The lectures are on Thursdays in Paterson Room 303 at 6.00 – 9.00pm. Lectures begin on Thursday **September 11th, 2005**. The topics to be covered are:

1.	Science & Art – a shared creativity?	Prof. David Gardner (College)
2.	Big Bang	Prof. David Gardner (College)
3.	**A**lchemy to **B**ohr	Prof. David Gardner (College)
4.	The Fossil Record	Prof. Claudia Schroder-Adams (Earth Sciences)
5.	Evolution	Prof. David Gardner (College)
6.	Cell Biology & Genetics	Prof. David Gardner (College)
7.	Molecular Biology	Dr. John Nash (NRC)
8.	Plagues (Black Death, HIV etc)	Prof. David Gardner (College)
9.	Sex, Drugs & Rock'n'Roll	Prof. David Gardner (College)
10.	Pollution	Prof. Nancy DoubleDay (Geography)
11.	Global Warming	Dr. John Stone (Environment Canada)
12.	"You are what you eat!"	Prof. Robert Wightman (Chemistry)

Examinations will be:

1. **Mid-term Book Review**

Imagine you are the junior culture journalist for a national newspaper. In the grand journalistic tradition, given that you hold a Humanities degree, your editor assigns you a book review column for the weekly science page! Your job is to read the assigned books and explain to your readers what they are about and why they should, or should not, bother to read them. **Due on Thursday October 16th.**

From the list below of popular science titles, please select one **by Lecture 3** and review it.

Author	Title	Publisher	ISBN	Library
Alder, K.	The Measure of All Things	Free Press 2002	0-7432-1675-X	
Braun, S.	Buzz: The Science & Lore of Alcohol and Caffeine	OUP 1996	0-19-509289-9	
Boorstein, D.	The Discoverers	Random 1983	0-394-40229-4	yes
Bronowski, J	The Ascent of Man	BBC 1973	0-563-10498-8	yes
Chandrasekhar, S.	Truth & Beauty Aesthetics & Motivations in Science (first four chapters only)	UChicagoPress1987	0-226-10086-3	yes
Clark, W.	Sex and the Origins of Death	OUP 1996	0-19-510644-X	
Crawford, D.	The Invisible Enemy: A Natural History Of Viruses	OUP 2000	0-19-850332 6	
Dawkins, R.	The Blind Watchmaker	Norton 1986	0-393-02216-1	yes
Dawkins, R.	The Selfish Gene	OUP 1976/1989		yes

Diamond, J.	Guns, Germs, and Steel	Norton 1997	0-393-31755-2	yes
Gleick, J.	Isaac Newton	Pantheon 2003	0-375-42233-1	
Gould, S.J	The hedgehog, the fox, and the Magister's Pox Harmony, 2003		0-609-60140-7	
	or any other volume by Stephen Jay Gould			
Hall, S.S.	Merchants of Immortality	Houghton Mifflin2003	0-618-09524-1	
Jolly, A.	Lucy's Legacy	HarvardUPress1999	0-674-00069-2	yes
Hawking , S.	A Brief History of Time	Bantam 1988	0-553-05340-X	yes
Hawking , S.	Black Holes &Baby Universes	Transworld1993	0-593-03400-7	yes
Hawking, S.	The Universe in a Nutshell	Bantam 2001	0-553-80202-X	
Highfield, R.	The Science of Harry Potter	Viking 2002	0-670-03153-4	
Kandel, E.	In Search of Memory	Norton 2006	0-393-05863-8	
Maddox, J.	What Remains to be Discovered	FreePress 1998	0-684-82292-X	yes
Marks, J.	What it means to be 98% chimpanzee	U California Press 2003	0-520-24064-2	
Mayr, E.	This is Biology	HarvardUPress 1997	0-674-88468-X	
Medina	The Genetic Inferno – Inside the 7 Deadly Sins	CUP 2000	0-521-6404-4	
Singh, S.	BIG BANG	Fourth Estate (Harpers)	0 00 715251 5	
Watson, J.	The Double Helix	Atheneum 1968		yes
Watson, J.	DNA The Secret of Life	Knopf 2003	0-375-41546-7	
Wolpert & Richards	Passionate Minds – the inner world of scientists	OUP 1997	0 19 854904 0	yes

Some clues about the books:

Alder: Describes the seven year effort to correctly calculate the size of the metre (which was begun during the French Revolution and contains a hidden error!)

Braun: a very readable account on how alcohol and caffeine affect human physiology

Boorstein: the former Librarian of the Smithsonian in expansive mood – a history of how we humans got from there to here.

Bronowski: this book was the companion to the BBCTV series in the early 1970s. Bronowski presents a superbly imaginative series of articles on the nature of human achievement.

Chandrasekhar: I confess this is one of my most favourite books. Chandra is as erudite and searching on Shakespeare and Beethoven as he is on Newton.

Clark: a readable and fascinating account of how cells work – how they begin and end.

Crawford: A lucid exposition on viruses – and mankind's interactions with them.

Dawkins: books that made quite a stir when they were published.

Diamond: a fascinating mix of science, anthropology and sociology.

Gleick: A succinct, clear account of the life of one of the great genius' of Western thought (warts and all)

Gould: a writer who can make the obscure not only intelligible but leave you wanting more.

Hall: This book "breathes scintillating life into the most momentous science of our day, assesses the political and bioethical controversies it has spawned…"

Jolly: another good read, as she elaborates her ideas on the origins of human intelligence.

Hawking: *Brief History*: one of the most successful attempts to explain the erudite ideas of current cosmology. Ditto *Black Holes* and his latest volume *The Universe in a Nutshell.* Hawkins holds Newton's old chair as Lucasian Professor of Mathematics at Cambridge and is in the advance stages of Lou Gehrig's disease. An exceptional achievement on all fronts.

Highfield: a superbly imaginative and informative book – though he concedes that broomsticks may never fly! A must for J.K.Rowling fans.

Kandel: A most engaging book. A surprising achievement given that this is part autobiography of a Nobel laureate and part lucid account of how he has transformed our understanding of the brain and of the mind.

Maddox: formerly editor of *Nature* for a quarter-of-a-century, Maddox writes a fascinating book on where the Twenty-first Century might go scientifically.

Marks: "Mark's book is a novel, intellectually provocative, and wittily engaging treatment of a topic now a shibboleth of modern genetics."

Mayr: A summing up of a long career of biological enquiry. Here the holistic approach wins the day!

Medina: Even the preface is funny! And Dante's *Purgatorio* from *The Divine Comedy* is front and centre as an organizing device for the entire book!!

Singh: A history of how we have arrived at the BIG BANG theory of the creation of the Universe. Astonishingly, this is a 'page turner'.

Watson: A classic. You can smell the adrenaline as Watson and Crick race to beat Linus Pauling in unravelling the structure of DNA.

Watson: Watson in full flood in a "classic telling of the defining scientific saga of our age."

Wolpert & Richards: A book that reveals scientists as passionate human beings – often equally entranced by the arts as by their science. Some have become expert practitioners in both disciples.

2. **Final Term Paper** (suggest: 10 –15 pages, double spaced)

For the final assignment of the course you are to select a scientific issue that is of concern/interest to you. **Note that science is neither aspects of engineering nor social psychology**. **Make sure you have my agreement on your topic of choice before submission of your essay.** This will avoid any confusion about putative topics that may be on the borderline of science. I am expecting you to read several (not just one or two) sources for your basic material (which should be revealed in the References section of your essay) and to draw a synthesis and criticism of what you have read. To assist you in your choice the College is subscribing to the weekly *New Scientist* which contains layperson-readable articles on 'hot' scientific issues of the day. (For example, global warming, genetically-modified foods, pollution, etc). These copies will be kept on the library shelves in Room 302. Please read them only in the College rooms and return them to the shelves when you have finished reading them. Other sources of inspiration may be found on the internet – though reader beware! Not all internet sites operate with good scholarly premises. It is wise also to find corroborative articles elsewhere.

The heart of your essay should explain the basic science (as we currently understand it) behind the topic under review with an explanation as to why it is an issue that merits concern and/or interest. **Due on Thursday November 27th during the last lecture.**

The final mark for HUMS4103 will consist of:

Fall term Mid-term Book Review	50% of final grade
Fall term Final Term Paper	50% of final grade

Prof. David Gardner, Professor emeritus, Former Dean of Science

REGULATIONS COMMON TO ALL HUMANITIES COURSES

COPIES OF WRITTEN WORK SUBMITTED
Always retain for yourself a copy of all essays, term papers, written assignments or take-home tests submitted in your courses.

PLAGIARISM
The University Senate defines plagiarism as "*to use and pass off as one's own idea or product the work of another without expressly giving credit to another.*" This can include:

- Copying from another person's work without indicating this through appropriate use of quotation marks and footnote citations.
- Lengthy and close paraphrasing of another person's work (i.e. extensive copying interspersed with a few phrases or sentences of your own).
- Submitting written work produced by someone else as if it were your own work (e.g. another student's term paper, a paper purchased from a term paper "factory", materials or term papers downloaded from the Internet, etc.).
- Handing in "*substantially the same piece of work to two or more courses without the prior written permission of the instructors...involved.*" (University Senate)

Plagiarism is a serious offence which cannot be resolved directly with the course's instructor. The Associate Deans of the Faculty conduct a rigorous investigation, including an interview with the student, when an instructor suspects a piece of work has been plagiarized. Penalties are not trivial. They range from a mark of zero for the plagiarized work to a final grade of "F" for the course, and even suspension from all studies or expulsion from the University.

GRADING SYSTEM
Letter grades assigned in this course will have the following percentage equivalents:

A+ = 90-100 (12)	B+ = 77-79 (9)	C+ = 67-69 (6)
A = 85-89 (11)	B = 73-76 (8)	C = 63-66 (5)
A - = 80-84 (10)	B - = 70-72 (7)	C - = 60-62 (4)
D+ = 57-59 (3)	D = 53-56 (2)	D - = 50-52 (1)

F	Failure. No academic credit
WDN	Withdrawn from the course
ABS	Absent from the final examination
DEF	Official deferral (see "Petitions to Defer")
FND	"Failed, no Deferral" – assigned when the student is absent from the final exam and has failed the course on the basis of inadequate term work as specified in the course outline.

WITHDRAWAL WITHOUT ACADEMIC PENALTY
The last date to withdraw from Fall term courses is November 7th, 2008. Last day to withdraw from Fall/Winter (full year) and Winter term courses is March 6th, 2009.

REQUESTS FOR ACADEMIC ACCOMMODATION
For Students with Disabilities

Students with disabilities requiring academic accommodations in this course must contact a coordinator at the Paul Menton Centre for Students with Disabilities to complete the necessary *Letters of Accommodation*. After registering with the PMC, make an appointment to meet and discuss your needs with me in order to make the necessary arrangements as early in the term as possible. Please note the deadline for submitting completed forms to the Paul Menton Centre is November 7th, 2008 (for fall/winter term courses) / March 6th 2009 (for winter term courses).

For Religious Obligations:
Students requesting academic accommodation on the basis of religious obligation should make a formal, written request to their instructors for alternate dates and/or means of satisfying academic requirements. Such requests should be made during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist, but no later than two weeks before the compulsory event. Accommodation is to be worked out directly and on an individual basis between the student and the instructor(s) involved. Instructors will make accommodations in a way that avoids academic disadvantage to the student.
Students or instructors who have questions or want to confirm accommodation eligibility of a religious event or practice may refer to the Equity Services website for a list of holy days and Carleton's Academic Accommodation policies, or may contact an Equity Services Advisor in the Equity Services Department for assistance. (613-520-5622)

For Pregnancy:
Pregnant students requiring academic accommodations are encouraged to contact an Equity Advisor in Equity Services to complete a *letter of accommodation*. The student must then make an appointment to discuss her needs with the instructor at least two weeks prior to the first academic event in which it is anticipated the accommodation will be required.

PETITIONS TO DEFER
Students unable to complete a **final** term paper or write a **final** examination because of illness or other circumstances beyond their control or whose performance on an examination has been impaired by such circumstances may apply in writing within five working days to the Registrar's Office for permission to extend a term paper deadline or to write a deferred examination. The request must be fully and specifically supported by a medical certificate or other relevant documentation. Only deferral petitions submitted to the Registrar's Office will be considered.

ADDRESSES

College of the Humanities 520-2809	300 Paterson
Classics and Religion Office 520-2100	2A39 Paterson
Registrar's Office 520-3500	300 Tory
Student Academic Success Centre 520-7850	302 Tory
Paul Menton Centre 520-6608	500 Unicentre
Writing Tutorial Service 520-6632	4th floor Library