Science Stories **Calendar** **2012 winter term**

DATE	NOTES	HISTORICAL CONTEXTS
DAY 1 Jan. 4	Course Introduction. For a detailed description of the course refer to Course Outline. Sign up for Historical Contexts for DAY 3 and DAY 4	An introduction to the course. Why History of Science? What is a good science story? "The School of Athens"
DAY 2 Jan. 6	**I. GREEK SCIENCE** THE WORLD IS RATIONAL AND CAN BE UNDERSTOOD BY THE POWER OF REASONING**.** Aristotle and Ptolemy Sign up for Historical Contexts for DAY 4 and DAY 5	1. Aristotle's physics of motion: (Instructor). **(1)** 2. The Ptolemaic model of the solar system (Ian Cameron). **(2)**
DAY 3 Jan. 11	**I. GREEK SCIENCE** THE MATHEMATICS AND PHYSICS OF THE GREEKS Thales, Pythagoras, Archimedes	3.The beginnings of geometry: Thales **(3)** 4. Pythagoras and the mathematization of the world. **(4)** 5. The three laws of physics that the Greeks discovered. **(5)** 6. The three unsolved problems in Greek mathematics. **(6)**
DAY 4 Jan. 13	**GREEK SCIENCE** MODELLING AND MEASURING THE UNIVERSE. Eratosthenes and Aristarchus BIOLOGY AND MEDICINE OF THE GREEKS. Hippocrates of Cos. Discussion of questions taken from the historical contexts of DAY 3 . Presentation of a brief proposal for a science story based on the historical contexts of DAY 3.	7. "Measuring" the size of the earth. **(7)** 8. How the Greeks measured the distances to the moon and the sun. **(8)** 9. Biology and medicine (Aristotle and Hippocrates of Cos). **(9)**

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DATE	NOTES	HISTORICAL CONTEXTS
DAY 5 Jan. 18	**II. THE SCIENTIFIC REVOLUTION** THE HELIOCENTRIC SOLAR SYSTEM THE BEGINNING OF EXPERIMENTAL PHYSICS Copernicus, Kepler, Galileo, Harvey. Discussion of questions taken from the historical contexts of DAY 4 . Presentation of a brief proposal for a science story based on the historical contexts of DAY 4.	10 . Copernicus' model of the solar System. **(10)** 11. Kepler's laws of planetary motion (Instructor). **(13)** 12. Galileo and his telescope: "The Starry Messenger" **(14)** 13. Harvey's discovery of the 'circulation of blood'. (**15)**
DAY 6 Jan. 20	**II. THE SCIENTIFIC REVOLUTION** THE BEGIINING OF EXPERIMENTAL PHYSICS: Galileo, Torricelli and Boyle. Discussion of questions taken from the historical contexts of DAY 5 . Presentation of a brief proposal for a science story based on the historical contexts of DAY 5.	14. Galileo's inclined plane Experiment. **(16)** 15. Torricelli's experiment: "The weight of the atmosphere". (Instructor). **(17)** 16. Boyles' law: "Testing the Springiness of Air". **(18)**
DAY 7 Jan. 25	Midterm test, based on work done up to and including DAY6.	**Midterm test**: 1 hour. Discussion of test.
DAY 8 Jan 27	Newton, Hooke and Roemer "**Let Newton be!" and all was light.** (Alexander Pope, 1740). Discussion of questions taken from the historical contexts of DAY 6 . Presentation of a brief proposal for a science story based on the historical contexts of DAY 5.	17. The life of Robert Hooke, the secretary of the *Royal Society***. (19)** 18. Newton's laws of motion. **(20)** 19. Roemer's determination of the speed of light. (Ian Cameron) **(21)**

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DAY 9 Feb. 1	**II. THE SCIENTIFIC REVOLUTION** Two episodes from Jacob Bronowski's celebrated series "The Ascent of Man" (1973)	Film: "The Starry Messenger". (Galileo) Film: "The Majestic Clockwork". (Newton) Discussion of the movies based on a question sheet.
DAY 10 Feb. 3	**III. MODERN SCIENCE** THE NEW CHEMISTRY ATOMIC THEORY OF MATTER Lavoisier, Priestley, Dalton Discussion of questions taken from the historical contexts of DAY 8 . Presentation of a brief proposal for a science story based on the historical contexts of DAY 8.	20 . The development of modern chemistry, from the phlogiston theory to Lavoisier's "NewChemistry" (Instructor). **(22)** 21. Dalton's atomic theory. **(24)**
DAY 11 Feb. 8	**III. MODERN SCIENCE...** BIOLOGY FROM MIDDLE OF THE 18th TO THE MIDDLE OF THE 19th CENTURY. Darwin, Kelvin. Discussion of questions taken from the historical contexts of DAY 10. Presentation of a brief proposal for a science story based on the historical contexts of DAY 10.	22. The Cell Theory and the question of the spontaneous generation of life. **(27)** 23. Darwin's "Voyage of the Beagle" (Ian Cameron) **(28)** 24. Lord Kelvin and the Age-of-the-Earth controversy. (Instructor). **(29)**

DAY 12 Feb 10	**III. MODERN SCIENCE...** THE STORY OF ELECTRICITY: FROM FRANKLIN TO FARADAY.	25. The study of electricity, from the Voltaic Cell to Faraday's laws of electrodynamics. **(30)** (Will be presented by the instructor in Room 300, with the help of colleagues).
DAY 13 Feb. 15	**Summary of Course**	**Workshop:** Working in groups of two**,** in Rooms 300 and 309. Ian Cameron will assist. This is in preparation for the presentations.

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Presentations of finished science stories

	Names	Title of science story
DAY 14 Feb 17.		1, 2. 3. 4.
DAY 15 Feb 22		5 6. 7. 8
DAY 16 Feb. 24		9. 10. 11. 12.
DAY 17 Feb. 29		13. 14. 15. Summary
DAY 18 March 2	**FINAL EXAM**	Rooms 300 and 309