OFFICIAL SYLLABUS WILL BE PROVIDED IN THE COURSE

EAST TENNESSEE STATE UNIVERSITY

College of Arts and Sciences

Department of Philosophy & Humanities

PHIL 2640: SCIENCE AND THE MODERN WORLD

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Office: Rogers-Stout Hall 215
Office hours: 12:30pm - 1:30pm

Rogers-Stout 324
Class meets: 11:30am-12:25pm
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Course description

Science appears to provide us with important truths about ourselves and the world we inhabit. The results of scientific research are all around us, enhancing our lives and expanding our understanding (in some cases straining credulity in the process). Science also involves controversy. People disagree about what science shows us, what counts as science, which science is good science, and whether science is our best guide to what the world is like. Such confusions can have dangerous consequences, for example when special interest groups distort scientific conclusions for corporate, moral or ideological gain. This course aims to provide students with tools to help navigate these controversies, improve their understanding of how science works, and better appreciate the relationship between science and the modern world.

Required texts:

- *Creating Scientific Controversies: Uncertain and Bias in Science and Society*
  David Harker (2015)
  Cambridge University Press
  ISBN: 978 1107692367

Optional texts:

Additional readings will be made available via d2l, but for those who want to buy additional textbooks, the following would also be excellent complements to assigned class reading.

- *Theory and Reality: An Introduction to the Philosophy of Science*
  Peter Godfrey-Smith (2003), University of Chicago Press
- *Global Warming: A Very Short Introduction*
  Mark Maslin
  2nd edition (2009), Oxford University Press
- *Evolution and Religion: A Dialogue*
  Michael Ruse (2008), Rowman & Littlefield Publishers

Major topics:

- "the scientific method"
- science as historically & socially situated
- arguments and fallacies
- manufactured controversies
- climate change and creationist science

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Instructor Response Time and Availability:

Grades will be posted within two weeks of the assignment's due date. Emails sent between Monday and Thursday will receive a response within 48 hours. Emails sent on Friday, Saturday or Sunday will receive a response on Monday or Tuesday. Inevitably an email will get overlooked occasionally. If you do not receive a timely reply, please feel free to email again. Regular office hours are held every Monday and Wednesday from 12:30pm until 1:30pm. Alternative meeting times can be scheduled at any time during the semester.

Course design

- the course is divided into four modules and each module further divided into two or three sections:
  - Each section covers one chapter from the required text
  - Quizzes test understanding of individual sections/chapters
  - Exams cover all the material from a given module
  - Lectures cover some of the material from the text, but are not a substitute for reading the chapters carefully

Course purposes and goals:

- to provide students the opportunity to consider the differences between scientific and other forms of inquiry, the status of scientific claims and the role of science within society;
- to encourage critical thinking with regard to scientific conclusions, failures, controversies and attitudes.

On completing the course, students are expected to:

- appreciate the complexity of various philosophical and methodological issues that arise when considering the role and nature of scientific inquiry;
- understand the significance of science as a historically and socially situated enterprise;
- realize the distinction between a genuine and merely apparent scientific controversy, as well as the significance of being a merely apparent controversy;
- know the basics of debates surrounding climate change and creationist science;
- think more critically when evaluating scientific arguments and conclusions.

Coursework and grade assignment:

- Four electronic exams, each worth 10% of the final grade. Lists of potential exams questions, for all four exams, are available on d2l. Most questions will be multiple choice and will be taken from primary readings and lectures. An opportunity to make up missed exams may be available, but only if students have a legitimate, appropriately documented, excuse for missing the exam during the scheduled times.
- Ten quizzes, each worth 2% of the final grade. The assigned chapter (primary reading) should be read before quizzes are attempted. All answers to quiz questions can be found in the primary reading. Students may refer back to the text when completing a quiz, but will only have 20 minutes to complete it.
- Ten mini-assignments, each worth 2% of the final grade. Completed assignments should be uploaded to appropriate D2L course dropbox. Mini-assignments will be announced during class. Should a student miss class, it is their responsibility to get caught up on all notes and assignments, either by talking to class-mates or coming to my office hours. Late mini-assignments will not be graded, unless accompanied by appropriate documentation. Assignments should be well-written, with appropriate grammar and spelling. Content should be carefully considered, clearly presented and demonstrate careful attention to texts and lectures. An assignment that meets expectations will receive full credit. Assignments that almost meet expectations will receive partial credit.
- Eleven in-class assignments, collectively worth 20% of the final grade. Although there is no attendance policy for the class, there will be eleven assignments that will be completed in class. Obviously those students who are not in attendance will be not be able to complete the assignment. Each assignment is worth 2% of the final grade, up to a maximum of 20%, so students can miss one assignment without penalty.
- There are two extra credit opportunities: an additional quiz (quiz 10) and participation in an additional discussion

board (discussion board 10). These are each worth up to 1.5% towards the final grade.

Grading scale

		B+	**84-87**	**C+**	**72-75**	**D+**	**60-63**
A	**92-100**	**B**	**80-83**	**C**	**68-71**	**D**	**56-59**
A-	**88-91**	**B-**	**76-79**	**C-**	**64-67**	**F**	**0-55**

Electronic devices

- **The use of electronic devices is prohibited during class time.** This includes laptops, tablets and cell-phones. If you have extenuating circumstances, please speak to me before using any devices. I will deduct up to 1 percentage point from you final grade, for each violation.

Plagiarism:

- academic dishonesty of any type, including plagiarism, is unacceptable at ETSU. Plagiarism is the representation of another person's work, words or ideas as one's own. The cost of plagiarising starts with failing the course and may result in stiffer penalties.
- if in any doubt about what constitutes plagiarism, students should consult the ETSU Student Handbook for a fuller, more specific discussion of academic integrity standards.

Mental Health:

- Students often have questions about mental health resources, whether for themselves or a friend or family member. There are many resources available on the ETSU Campus, including: ETSU Counseling Center (423) 439-4841; ETSU Behavioral Health & Wellness Clinic (423) 439-7777; ETSU Community Counseling Clinic: (423) 439-4187.
  - **If you or a friend is in immediate crisis, call 911.**
  - Available 24 hours per day is the National Suicide Prevention Lifeline: 1-800-273-TALK (8255).

University syllabus attachment

- Useful, general information about ETSU academic life is available here: http://www.etsu.edu/reg/academics/syllabus.aspx

Technical help page

- If you are having difficulties with D2L, email, your ETSU account, etc., help can be accessed here: http://www.etsu.edu/onlinehelp/student_help/tech_resources.php

Student resources

- ETSU is committed to providing students with the resources, help and guidance they need to succeed. Some of these useful resources can be easily accessed here: http://www.etsu.edu/onlinehelp/student_help/services.php

Accommodations Statement

- It is the policy of ETSU to accommodate students with disabilities, pursuant to federal law, state law and the University's commitment to equal educational access. Any student with a disability who needs accommodations, for example arrangement for examinations or seating placement, should inform the instructor at the beginning of the course. Faculty accommodation forms are provided to students through Disability Services in the D.P.Culp center, telephone 439-8346

Module 1	*Topics*	*Required reading*	*Secondary reading*	*Quiz and MA*	*Both due by*	*Dates open*	*Exams*

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Section 1	**Introduction**	**Introduction**	**Chalmers**	**0**	**8/30**	**8/26-8/30**	
Section 2	**Problem of demarcation**	**Chapter 1**	**Laudan**	**1**	**9/3**	**8/9 - 9/3**	
Section 3	**Observation and induction**	**Chapter 2**		**2**	**9/8**	**9/2-9/8**	**Exam 1 (by 9/15)**
Module 2	***Lectures***	***Required reading***	***Secondary reading***	***Quiz***	***Due by***	***Dates open***	***Exams***
Section 1	**Kuhn**	**Chapter 3**	**Godfrey-Smith**	**3**	**9/15**	**9/9-9/15**	
Section 2	**History & sociology of science**	**Chapter 4**	**Solomon**	**4**	**9/22**	**9/16 9/22**	**Exam 2 (9/22)**
Module 3	***Lectures***	***Required reading***	***Secondary reading***	***Quiz***	***Due by***	***Dates open***	***Exams***
Section 1	**Cognitive psychology**	**Chapter 5**	**Kahneman**	**5**	**9/29**	**9/23-9/29**	
Section 2	**Critical thinking**	**Chapter 6**	**d2l notes**	**6**	**10/13**	**9/30-10/13**	
Section 3	**Created Controversies**	**Chapter 7**		**7**	**10/20**	**10/14-10/20**	**Exam 3 (by 10/20)**
Module 4	***Lectures***	***Required reading***	***Secondary reading***	***Quiz***	***Due by***	***Dates open***	***Exams***
Section 1	**Climate change**	**Chapter 8**	**Guide to scepticism**	**8**	**10/27**	**10/21-10/27**	
Section 2	**Science and religion**	**Chapter 9**	**Hoffman**	**9**	**11/10**	**11/4-11/10**	**Exam 4 (by 12/8)**
Section 3 (optional)	**Health**	**Chapter 10**		**10**	**12/8**	**11/25-12/8**	