

## Interpreting Evolution and Creation: Scientific and Religious Perspectives

Course Number: Religion 151/Honors 193; 4 Credits

Institution: Drake University

Instructor: Dan Spencer [daniel.spencer@drake.edu](mailto:daniel.spencer@drake.edu)

Class Website: <http://bb.drake.edu>

### Course Structure and Objectives

This course will introduce students to ongoing dialogue and debate between science and religion, using the evolution-creation discussion as a focal point and case study for examining the different ways science and religion are practiced. Drawing on an interdisciplinary approach, we will examine fundamental issues such as different models for how science and religion should relate, the historical roots and contemporary shape of the evolution-creation dialogue, and contemporary scientific, theological, and ethical perspectives on evolution and creation. Through a combination of lecture, discussion, guest presentations, readings, research, laboratories and field trips, students will be exposed to a broad spectrum of perspectives and will be encouraged to clarify their own personal stances as well as understand and engage perspectives and positions different from their own.

### Required Texts

- *An Evolving Dialogue: Scientific, Historical, Philosophical and Theological Perspectives on Evolution.* Edited by James B. Miller.
- *The Sparrow* by Mary Doria Russell.
- Selected Articles on Class Website and on Reserve in Cowles Library
- *Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action.* Edited by Robert John Russell, William R. Stoeger, S.J. and Francisco J. Ayala (**Note:** Out of Print. Readings are posted on class web-site and are referred to as EMB on syllabus)

### Assignments and Classes

#### I. Introduction

Recommended Readings in Brackets [ ]

1. Introduction: Laying out themes and structure of the course

Lab: Relating Science and Religion

2. Science and Religion: Defining the Disciplines

Polkinghorne (Packet #1)

What is Science? What is Religion?

3. Science and Religion: 4 Models for Interaction

Barbour (Packet #2)

[Haught AED 343-354]

Lab: Video: Tales of the Human Dawn  
(Stephen Jay Gould and Richard Potts)

## **II. Historical Context: From Darwin to the Kansas School Board**

### 4. The Nineteenth Century: Darwin and his Respondents

Barbour (Packet #3)

Durant AED 265-280

[Darwin (Packet #4)]

### 5. Darwinism Under Fire: The Scopes Trial, Historical Reconsideration and Popular Myth

Numbers (Packet #5)

Larson (Packet #6)

[Darrow & Bryan (Packet #7)]

Lab: Film: *Inherit the Wind*

### 6. Darwinism Since Scopes: Arkansas, Kansas, and Beyond

Larson (Packet #8)

Gilkey (Packet #9)

## **III. Scientific Perspectives on Evolution**

### 7. Darwin and Modern Evolutionary Theory

Ayala AED 9-53

Guest Speaker: Dr. Charisse Buising, Developmental Biology and Plant Genetics

Lab: Evolution of a Prairie Ecosystem (Visit to Neal Smith Wildlife Refuge)

### 8. The Mechanism of Evolution: Natural Selection

Ridley AED, 55-67

Guest Speaker: Dr. Charisse Buising, Developmental Biology and Plant Genetics

### 9. Evolution and Genetics

Marshall AED, 69-98

[Futuyama AED 99-124]

Guest Speaker: Dr. Michael Myszewski, Professor of Biology

Lab: Field Trip: Geological Cross-Section / Fossils

### 10. Geology and the Discovery of Deep Time

Berra (Packet #10)

Gould AED 157-168

Guest Speaker: Dr. Dennis O'Brien, Geology/Paleontology

### 11. Human Evolution: An Overview

Tattersall AED 199-210

Lab: Video: Evolution (Jared Diamond)  
Guest Speaker: Dr. Jerry Honts, Associate Professor of Biology

12. The Hominid Evolutionary Journey  
Cela-Conde EMB 59-78  
Guest Speaker: Dr. Harold Swanson, Professor Emeritus of Biology

#### **IV. Creationist Responses to Evolution**

13. Introduction to Creationism: Overview and Historical Development  
Numbers AED 281-317  
Lab: Video: Evolution: Fact or Fiction?  
(Christian Creationist Roger Oakland)

14. Whitcomb, Morris, and The Genesis Flood  
Numbers (Packet #11)  
[Chittick and Morris (Packet #12)]

#### **15. Fall Break--No Class**

16. Scientific Creationism and Intelligent Design  
Numbers (Packet #13)  
Creationism articles (Packet #14)  
Dembski (Packet #15)  
P. Johnson (Packet #16)  
Video Evolution: Religion and Science  
Lab: Prof. Jon Torgerson, Philosophy: Science, Creationism, and Logic  
Begin Planning Group Research Projects

17. Contemporary Scientific Responses to Creationism  
Gould AED 317-328  
Ayala EMB 101-116  
[Russell EMB 191-224]  
[Birch EMB 225-248]

18. Liberal Religious Responses to Creationism  
Gilkey (Packet #17)  
Lab: Review Prep for Midterm Exam  
Speaker: Prof. Dale Patrick, Biblical Studies and Hermeneutics

19. A Response from the Vatican  
EMB 1-17

**20. Midterm Essay Exam**  
Lab: Group Projects Research

## **V. Theological Perspectives on Evolution and Creation**

21. Five Models of God and Evolution

Barbour EMB 419-442

22. Does God Play Dice?

E. Johnson AED 355-373

Lab: Group Projects Research

23. A Positive Theological Appraisal of Biological Evolution

Peacocke AED 375-402

24. **No Class**

Lab: Group Projects Research

25. **Thanksgiving Break--No Class**

## **VI. Evolution and Ethics**

26. Evolution of the Created Co-Creator Hefner AED 403-420

[Hefner EMB 329-346]

Lab: The Nonreducibility of Ethics to Biology

Murphy EMB 463-489

Ethics and Values in Biological and Cultural Evolution

Dobzhansky AED 443-463

27. The Sparrow -- I

Russell, 1-137

Lab: Group Project Reports

28. The Sparrow -- II

Russell, 138-285

29. The Sparrow -- III

Russell, 286-405

Lab: Group Project Reports

30: Wrap-up

**Individual Response Papers Due**

**Free Study Day**

**Web Portfolios due by 4:00 pm**

**Requirements and Grading Policy**

1. Regular class attendance and participation that demonstrates a grasp of the reading assignments, plus participation in a weekly lab (for films, field trips, laboratory exercises, group research)
2. Facilitation with two other students of a class discussion (5%)
3. Two individual analytical response papers, distributed to the class for discussion (10% each – 20% total)
4. Regular contributions to class web-site discussion forum, culminating in a web-site portfolio (15%)
5. Group Project on an issue in the evolution-creationism debate consisting of:
  - a) Group Research and Class Presentation (10%)
  - b) Group Paper (20%)
6. Midterm exam (15%)
7. Final exam (15%)

Note Re: Papers: Papers are due in class on or before the date listed in the syllabus. Unless you have made a prior agreement with me, I will take off one grade level (A becomes A-) for each class day an assignment is late. Papers with an undue number of errors of punctuation, spelling, or grammar will be returned ungraded for correction. Written work will be evaluated in terms of your depth of critical analysis, thoughtfulness of reflection, clarity of writing, and ability to address issues raised in the class and in readings on the topic at hand. Grades given reflect the following criteria of judgment:

- F: Failure to meet minimum requirements
- D: Unsatisfactory, but some effort to meet minimum requirements
- C: Satisfactory; meet minimum requirements of assignment but not much more
- B: Good to Very Good: thoughtful reflection, good analysis, clear writing style
- A: Excellent depth of critical analysis, thoughtfulness of reflection, and writing style; demonstrate creativity and mature analytical skills in going beyond the primary requirements of the assignment

Attendance: Because this class is built around participation and discussion, regular attendance and participation in the class is expected. More than three (3) absences will result in losing any benefit of the doubt on your final grade. More than six (6) absences will result in one grade reduction. More than nine (9) absences will result in a failing course grade. Late arrivals in class will count as an absence. (Note: If you have a valid reason for missing several classes, such as illness or other conflicting commitments, you still must speak with the instructor).

### **Description of Assignments**

1. Class attendance and participation: The seminar format of the class emphasizes student leadership in running and facilitating class sessions. Students are expected to come to class having done the reading and ready to engage in discussion of the issues raised.
2. Facilitating Class Discussion: Each student will facilitate two class discussions with two other students. The primary purpose of this assignment is not to give a report on the

readings (which presumably everyone will have done), but to facilitate good, stimulating class discussion on the issues presented in the readings. Be clear about what main points you want to cover and how you want the class to address them, but also leave room for others to raise issues and questions. The first part of the class should focus on discussion of the student response papers on the readings for that class; the second part of the class should focus more generally on the readings themselves and the issues they raise. Feel free to be creative in your format design to encourage active participation by everyone.

3. Individual Analytical Response Papers: Each student who facilitates a class discussion (see #2 above) must post an analytical response paper to the class website at least 24 hours prior to class. This is to be a 2-3 page, double-spaced paper which demonstrates your capacity to engage in critical reflection on issues raised by the reading. At minimum, your paper should (a) identify and state the main point or points of the author's argument, and (b) evaluate these arguments and positions, responding to the issues raised. Tell whether you agree or disagree with the argument, and why. If you agree, how might you develop it further? If you disagree, what do you think is a better position? What reasons can you give to support your argument? Two weeks after the class discussion of your paper, and after receiving responses on the website, turn in a final draft to the professor.

4. Web-site Forum Discussion and Portfolio: A significant portion of class discussion on the readings will take place through the class web-site discussion forum. Over the course of the semester, you should provide a 1-page response to eight of your classmates' individual analytical response papers: the four papers written by your class facilitation team-mates, plus four more of your choosing. Your responses must be written within one week of the posting of the original paper (so that the author may incorporate your critique in rewriting the paper). Your entries should respond thoughtfully to the issues raised in the response papers and the readings for the designated classes (asterisked and **bolded** on the syllabus), and should seek to advance the discussion of the issues. At the end of the semester all of your responses will be assessed together as a portfolio of your critical engagement with the material throughout the semester. The portfolio cover essay will be assigned in class at the end of the semester and will ask you to synthesize your learnings from your portfolio and evaluate the quality of your responses. Your portfolio is due in Medbury 206 by 4:00 pm Fri, December 14.

5. Group Project: The group projects will each focus on a different issue in the dialogue/debates on evolution and creation/ism (selected in consultation with the instructor). The project is divided into three sections:

(a) Group Research and Presentation: based on your research, an oral report and discussion of the issue identified.

(b) Group Paper: A written analysis of the research presented in the oral presentation. This section of your paper should be a maximum of 15 pages. (Due: At the time of your oral presentation)

(c)Individual Response Papers: Pick one aspect of the issue your group researched, and write an individual critical response of 4-5 pages, stating your own position on the issue and providing the reasons and arguments that support your position. (Due: December 13)

6. Exams: The mid-semester exam is November 6. The Final Exam is comprehensive. Both exams are essay format and are designed to help you to synthesize your learning from the course.

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