Chapman

## University

One University Drive Orange, CA 92866

### University Honors Program: HON 207-01

**Darwin’s Evolutionary Theory: The Science and the Controversy**

Syllabus - Spring 2024

DH-105 -Tuesday & Thursday 10 – 11:15 AM

Course Description: *Prerequisite: acceptance to the University Honors Program, or consent of instructor. This course will address the topic Darwin’s theory of evolution by natural selection and its place in scientific thought, and explore the controversy surrounding it for many in the general public. We will explore the options for finding comfort with both the science of evolution and one’s personal religious beliefs. (Offered as needed.) 3 credits.*

Instructor: Fred Caporaso, Ph.D., FIFT

Professor, Schmid College of Science and Technology & Honors Faculty

[caporaso@chapman.edu](mailto:caporaso@chapman.edu)

Hashinger Science Center, Room 216 (714) 997-6638

Honors Program Coordinator, Ashley Melton (714) 744-7646 [melton@chapman.edu](mailto:melton@chapman.edu)

Office Hours: Remotely; after class or by appointment. I will try my best to meet your scheduling needs.

**GE Natural Science Inquiry Learning Outcome:**

***Students engage in scientific investigation to explore the knowledge produced by scientific processes.***

Course Learning Objectives:

\*Apply the scientific method to analyze the natural world.

\* Explain the difference between a scientific theory and “theories” in everyday life.

\* Evaluate the science supporting Darwin’s theory of evolution by natural selection, and its crucial role in many scientific disciplines.

\*Analyze and articulate the controversy surrounding the theory of evolution.

**GE Values and Ethical Inquiry Learning Outcome:**

***Students articulate how values and ethics inform human understanding, structures, and behavior.***

Course Learning Objectives:

\* Explore and assess the values and ethical norms of the Victorian age, and how they influenced Charles Darwin’s thoughts and actions.

\* Analyze why so many Americans don’t “believe” in evolution.

\* Evaluate the options for finding comfort with both the science of evolution and one’s personal religious beliefs.

**Honors Program Learning Outcomes**:

Upon completing a course in the University Honors Program students will have:

1. Obtained a starting point for integrative exploration of the development of cultures and intellectual achievements through a variety of disciplinary and interdisciplinary perspectives.
2. Sharpened their ability to critically analyze and synthesize a broad range of knowledge through the study of primary texts and through engagement in active learning with fellow students, faculty, and texts (broadly understood);
3. Understood how to apply more integrative and interdisciplinary forms of understanding in the advancement of knowledge and in addressing complex challenges shaping the world; Developed effective communication skills, specifically in the areas of written and oral exposition and analysis.

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Textbooks/Videos:

Required:

\*\*Berra, Tim M.*Charles Darwin: The Concise Story of an Extraordinary Man,* Johns Hopkins University Press, Illustrated edition. 2008. <https://chapcat.chapman.edu/record=b11741708~S3>

Coyne, Jerry A. *Faith Versus Fact: Why Science and Religion Are Incompatible*. Faith Versus Fact interview of Jerry Coyne (22 min.). <https://www.youtube.com/watch?v=y6T39bz7A4w>

Coyne, Jerry A. The Darwin Day Lecture 2016, with Jerry Coyne. *Evolution and atheism - best friends forever?*

(82 min.). <https://www.youtube.com/watch?v=sazo1J4Zsj4>

\*Gould, Stephen Jay. *Rocks of Ages: Science and Religion in the Fullness of Life*. Ballantine Books, NewYork.1999. \*Miller, Kenneth R. *Finding Darwin's God: A Scientist's Search for Common Ground Between God and Evolution*. Harper, N.Y. 2007

\*NOVA. And PBS (Vulcan Productions). *Judgment Day: Intelligent Design On Trial (creationism vs evolution)* Video. WGBH. Boston. 2011.<https://www.youtube.com/watch?v=x2xyrel-2vI> 1:51:25

Recommended:

Appleman, Philip, ed. *Darwin.* 3rd ed. Norton & Company, New York, 2001.

Aspell, Paula S. and Mirowitz, Lisa. *What Darwin Never Knew.* DVD, NOVA, New York. 2010.

Ayala, F. *Darwin's Gift: to Science and Religion.* Joseph Henry Press. 2007.

Attenborough, David. *Charles Darwin and the Tree of Life.* BBC EARTH. Burbank, CA. 2009

Bellaimey, J. *The five major world religions.* TED-Ed Animation. 2013.

<https://ed.ted.com/lessons/the-five-major-world-religions-john-bellaimey>

Carroll, Sean B. *The Making of the Fittest: DNA and the Ultimate Forensic Record of Evolution.* W.W. Norton and Company, New York, 2007.

Carroll, Sean B. *The Making of Fittest.* DVD (5 Parts). Howard Hughes Medical Institute. Chevy Chase, MD, 2013. <https://www.hhmi.org/biointeractive/making-fittest>

Coyne, Jerry A. *Why Evolution Is True*. Viking – Penguin Group, New York, 2009.

Coyne, Jerry A. *Faith Versus Fact: Why Science and Religion Are Incompatible.* Penguin Books, New York, 2016.

Dawkins, Richard. *The Genius of Charles Darwin.* DVD. Athena, London, 2009. <https://www.youtube.com/watch?v=k5Sb33Z6DVo&list=PLN2EBL_hjGYKWqOxR3gRC_LPOq8S8uMMM>

Dawkins, Richard and Lennox, John. *The God Delusion Debate*. DVD. Fixed Point Foundation. 2009.

Dawkins, Richard. Outgrowing God: A Beginner’s Guide. Random House. 2019

Darwin, Charles and Wilson, E.O. *From So Simple A Beginning: Darwin’s Four Great Books (Voyage of the Beagle, The Origin of the Species, The Descent of Man, The Expression of Emotions in Man and Animals).* W.W. Norton and Company, New York. 2005.

Dennett, Daniel C. *Darwin's Dangerous Idea: Evolution and the Meaning of Life*. Simon & Shuster, New York. 2014.

Harris, Sam. *The End of Faith: Religion, Terror, and the Future of Reason.* W.W. Norton & Co, New York. 2004.

Harris, Sam. *Letter to a Christian Nation.* Knopf, New York. 2006.

Harris, Sam. *The Moral Landscape: How Science Can Determine Human Values***.** Free Press, New York. 2011.

Hitchens, Christopher and Wilson, Douglas. *Collison:* *Is Religion Good For The World?* DVD. Level 4. 2009.

Miller, Kenneth R*.* *Only a Theory: Evolution and the Battle for America’s Soul.* Viking, New York. 2008.

Miller, Kenneth R*. Evolution: Fossils, Genes and Mousetraps.* DVD. Howard Hughes Medical Inst. Chevy Chase, MD. 2007.

**National Academy of Sciences. *Science, Evolution and Creationism.* National Academies Press, Washington, D.C. 2008.** [**https://www.nap.edu/resource/11876/Evolution%20Brochure.pdf**](https://www.nap.edu/resource/11876/Evolution%20Brochure.pdf)

NOVA and PBS (Espar, David and Lewis, Susan K.). *Evolution-Darwin’s Dangerous Idea.* Video. WGBH. Boston. 2001.

<https://www.youtube.com/watch?v=FUCxWMtK9CY> 120 min.

NOVA and National Geographic (Sanders, Jay O. and Berger, Lee R.). *Dawn of Humanity*. Video. WGBH. Boston. 2015.

<http://www.pbs.org/wgbh/nova/evolution/dawn-of-humanity.html> 1:53:07

Olson, Kenneth H. *Lens to the Natural World: Reflections on Dinosaurs, Galaxies and God.* Wipf & Stock, Eugene,OR, 2011.

Quammen, David. *Charles Darwin: On the Origin of Species. The Illustrated Edition.* Sterling Pub. Co., Inc. New York. 2008.

Shermer, Michael. *Why Darwin Matters.* Henry Holt and Company, New York, 2006.

Shubin, Neil. *Your Inner Fish: A Journey into the 3.5-Billion-Year History of the Human Body.* Pantheon Books, New York. 2008.

Shubin, Neil. *Your Inner Fish: The Series:Your Inner Fish; Your Inner Reptile: Your Inner Monkey.* DVD and video. DVD. Howard Hughes Medical Inst. Chevy Chase, MD. 2014<https://www.hhmi.org/biointeractive/your-inner-fish-series>

Wilson, Edward O. *The Creation: An Appeal to Save Life on Earth*. W.W. Norton and Company, New York, 2007.

Walters, Stuart M. *Darwin’s Mentor: John Stevens Henslow.* Cambridge University Press, 2001.

Zuckerman, Phil. *Living the Secular Life: New Answers to Old Questions*. Penguin Books. 2015.

**\*Chapman Library on 24-hour reserve**

**\*\* ebook, click on link above – a very short read with many useful illustrations**

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**GRADING: POINTS:**

Midterm Exam – **Thursday March 14**  100

Final Exam – **Monday May 13 8-10:30 AM** 125

5 Quizzes/Reflection papers – **due Random Tuesdays** 125 (25 each)

Short essay about cool crucial stuff you learned in HON 207

2/6, 2/20, 3/5, 5/7 (Zoo paper - double quiz)

Group Presentation/Discussion- Analysis of an assigned scholarly

Video. Brief PowerPoint intro./ lead discussion by posing

questions/help class reach conclusions about key topics 100

Active and appropriate participation (punctual class attendance,

focused and meaningful involvement in class activities,

**participation in a mandatory field trip to the world famous**

**San Diego Zoo. Sunday April 14 7:50AM- 5PM**  50

**TOTAL POINTS 500**

#### GRADING SCALE

A 509 93%

A- 492 90%

B+ 481 88%

B 454 83%

B- 437 80%

C+ 426 78%

C 399 73%

C- 382 70%

D+ 371 68%

D 344 63%

D- 327 60%

F Below 327

**• All students are encouraged to attend every class meeting. Active and appropriate participation (class attendance; focused and meaningful involvement in class activities) is expected. Each student is required to take an active part in class discussions.**

• **All cell phones must be off and put out of reach during class time.** **Side chatting or cell phone use in class is unacceptable**.

• **Make-up exams will only be offered for extraordinary documented reasons (e.g. a documented hospitalization) *pre-approved by the instructor prior to the test*.  A headache, cold or visit to the Health Center is not an acceptable reason. Make-up exams are discouraged and will be much more challenging than the original exam. There will be no make-up quizzes.**

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• **Assignments must be submitted on time through Canvas as doc, docx or pdf documents only (click on “Assignments” and follow the instructions, make sure you click on “submit” as your last step). Students will be penalized 20% for handing an assignment in late on the day it is due and another 40% for each day the assignment is late thereafter. Before handing in assignments make sure they are proofed, edited, referenced properly (you may use any one of the following Citation Styles: APA, MLA, Chicago, Turabian, IEEE - LibGuides at University of Pittsburgh (**[**https://pitt.libguides.com/citationhelp**](https://pitt.libguides.com/citationhelp)**) and typed neatly (double spaced in font 12)!**

• **Guidelines for the use of Artificial Intelligence Tools in this course:**

**While we recognize that there are a variety of artificial intelligence (AI) programs available to assist students with a wide range of academic assignments and learning activities, AI programs are not a replacement for human creativity, originality, and critical thinking. The purpose of assignments in this course is for you to demonstrate your writing, critical thinking, and analytical skills while providing you with opportunities to grow as a communicator, thinker, and scholar.**

**I may sometimes incorporate the use of generative AI tools like ChatGPT into your lessons and assignments. In these cases, AI will be used as a valuable tool for learning. However, in instances where you are not specifically told to use generative AI, I ask you to embrace the challenges of learning, scholarship, and personal growth and write without using these tools. If you have any questions about how and when it is appropriate to use AI tools for the activities in this course, please reach out to me for a conversation before submitting your work.**

**In all academic work, the ideas and contributions of others must be appropriately acknowledged and work that is presented as original must be, in fact, original. Using an AI-content generator (such as ChatGPT) to complete coursework without proper citation of source(s) or permission is a form of academic dishonesty. Every effort must be made to avoid violation of the university’s policies on academic integrity and AI use. If you are unsure about whether something may be in violation of these policies, please reach out to me so we can address these concerns before you submit your work. Faculty, students, and administrative staff all share the responsibility of ensuring the honesty and fairness of the intellectual environment at Chapman University.**

• In addition to the readings and lectures listed in the course outline, students may be responsible for other assignments given in class. Please note that this course requires close attention, active participation, and heavy reading and writing assignments at times; also, all reading assignments may not be discussed in class. Please be aware that the course outline is just a guide. We may vary the contents and the time projections, depending on unexpected events, speakers, etc. and the needs of the class.

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**Chapman University’s Academic Integrity Policy***:*

Chapman University is a community of scholars that emphasizes the mutual responsibility of all members to seek knowledge honestly and in good faith.  Students are responsible for doing their own work and academic dishonesty of any kind will be subject to sanction by the instructor/administrator and referral to the university Academic Integrity Committee, which may impose additional sanctions including expulsion.  Please see the full description of Chapman University's policy on Academic Integrity at <https://www.chapman.edu/academics/academic-integrity/_files/academic-integrity-policy.pdf>

**Chapman University’s Students with Disabilities Policy**

“In compliance with ADA guidelines, students who have any condition, either permanent or temporary, that might affect their ability to perform in this class are encouraged to contact the Disability Services Office.  If you will need to utilize your approved accommodations in this class, please follow the proper notification procedure for informing your professor(s). This notification process must occur more than a week before any accommodation can be utilized. Please contact Disability Services at (714) 516–4520 or visit [www.chapman.edu/students/student-health-services/disability-services](http://www.chapman.edu/students/student-health-services/disability-services) if you have questions regarding this procedure or for information or to make an appointment to discuss and/or request potential accommodations based on documentation of your disability. Once formal approval of your need for an accommodation has been granted, you are encouraged to talk with your professor(s) about your accommodation options.  The granting of any accommodation will not be retroactive and cannot jeopardize the academic standards or integrity of the course.”

**Chapman University’s Equity and Diversity Policy**

Chapman University is committed to ensuring equality and valuing diversity. Students and professors are reminded to show respect at all times as outlined in [Chapman’s Harassment and Discrimination Policy](https://www.chapman.edu/faculty-staff/human-resources/_files/harassment-and-discrimination-policy.pdf). Any violations of this policy should be discussed with the professor, the [Dean of Students](https://www.chapman.edu/students/dean-of-students/index.aspx) and/or otherwise reported in accordance with this policy.

**Student Support at Chapman University**.  Over the course of the semester, you may experience a range of challenges that interfere with your learning, such as problems with friend, family, and or significant other relationships; substance use; concerns about personal adequacy; feeling overwhelmed; or feeling sad or anxious without knowing why.  These mental health concerns or stressful events may diminish your academic performance and/or reduce your ability to participate in daily activities.  You can learn more about the resources available through Chapman University’s Student Psychological Counseling Services here:

<https://www.chapman.edu/students/health-and-safety/psychological-counseling/>

Fostering a community of care that supports the success of students is essential to the values of Chapman University.  Occasionally, you may come across a student whose personal behavior concerns or worries you, either for the student’s well-being or yours.  In these instances, you are encouraged to contact the Chapman University Student Concern Intervention Team who can respond to these concerns and offer assistance:

<https://www.chapman.edu/students/health-and-safety/student-concern/index.aspx>.  While it is preferred that you include your contact information so this team can follow up with you, you can submit a report anonymously.  24-hour emergency help is also available through Public Safety at 714-997-6763.

**COVID-19 Protocols for the start of the term.**

See  [CU Safely Back protocols](https://cusafelyback.chapman.edu/)

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Date Tentative Discussion Topics Textbook Reading /Background Assignments

1/30 Science: As a way of knowing Canvas documents:

The Scientific Method; A Scientific theoryNational Academy of Sciences. **Science, Evolution**

**and Creationism.**

2/1 Darwin’s Dangerous Idea – DVD **Quiz #1 The Biology of Skin Color video**

**2/6\*** Darwin’s Dangerous Idea – DVD; **Quiz #1 due** **B-Short book -read this month**

2/8 Quiz # 1 Discussion; Darwin - Life Highlights **B-Short book -read this month**

2/13 Darwin - Life Highlights H - John Stevens Henslow as a mentor

2/15 Darwin – Natural Selection; Artificial Selection **Quiz #2 The Making of the Fittest videos**

**2/20\*** Darwin – Natural Selection; **Quiz #2 due**

2/22 Quiz # 2 Discussion; Proofs of Evolution

2/27 Voyage of the Beagle, The Galápagos Islands

2/29 Punctuated Equilibrium- Gould, The Cambrian **Quiz #3 Great Transitions videos;**

Explosion - Grants- Finches on Daphne Majorin class The Making of a Theory & Clearly Stated videos

**3/5\*** Turtles, Tiktaalik, Ardi; **Quiz #3 due** Questioning Darwin video

3/7 Quiz #3 – Discussion; Evolution vs. God

3/12 Review for exam- see study guide

**3/14\*** **MIDTERM EXAM**

**3/19 & 21 SPRING BREAK**

3/26 Scopes Monkey Trial, 1925,Inherit the Wind **Co, G, J, M (watch/read as background for your**

**Super Term Paper)**

**3/28\* *The Evolutionary Arms Race- Evolution* DVD Group 1**

**4/2\* Group 1 - Discussion**

**4/4\* *What Darwin Never Knew*- From Fruit Flies**

**To What Makes Us Human? Group 2**

**4/9\* Group 2 – Discussion Group 2**

**4/11\* *What about God?* – *Evolution* DVD BBC Group 3**

**4/14\* Mandatory Sunday Field trip –SD Zoo- Quiz #4 & #5 Field trip paper**

**7:50AM- 5PM**

**4/16\* Group 3 - Discussion Group 3**

**4/18\* The Four Horsemen- The Conversation That**

**Sparked an Atheist Revolution -Part 1 -58 min Group 4 -** <https://www.youtube.com/watch?v=9DKhc1pcDFM>

**4/23\* Group 4 - Discussion Group 4**

**4/25 Dawkins – *The Genius of Charles Darwin* Group 5**

**Part 2, *The Fifth Ape* DVD**

**4/30\* Group 5 – Discussion of Part 2, *The Fifth Ape* Group 5**

**5/2\*** Judgment Day: Intelligent Design On Trial **G** Judgment Day: Intelligent Design On Trial (creationism vs evolution) Video. 1:51:25

<https://www.youtube.com/watch?v=x2xyrel-2vI>

**5/7\* Quiz #4 and #5 due at 10 AM; Discussion of**

**Adaptations observed at the SD Zoo**  **Zoo Photos shared in Canvas**

**5/9\*** Discussion, NOMA, review

**5/13\* FINAL EXAM – 8AM – 10:30AM - TERM PAPER DUE MAY 16TH BERFORE 11:59 PM**

**\* Important dates to remember – test or assignment due!!! All quizzes are due before 11:59 PM on date listed above**

B= Berra, Co= Coyne, G= Gould, H= Handouts from instructor- see Canvas, J= Judgment Day video M= Miller

HAVE A GREAT SUMMER BREAK!!!