ORIGINS Syllabus

HON-286
Jack Horner: Spring 2019
MWF 11:00 - 11:50  AF 205

From where, and how did the universe come to be? Is the universe stable, and if so, why? Why does the universe follow rules? How did atoms form? Why complexity? How did life originate? Was life inevitable? How does evolution work? Why did humans evolve? Where did consciousness arise? Were humans inevitable? This is an honors class for students of all disciplines, science and non-science majors. Science majors will gain a novel view point. It is a class that explores the origins of the natural world from a reductionist perspective.

Jan. 28  DISCUSSION:  US as students and professor (K0)
Jan. 30  Introduction to Terms & Tools (K1)
Feb.  1  DISCUSSION:  Why is the Universal Origin controversial? (K2)
Feb.  4  Naught to Cipher: A Whole Universe from Absolutely Nothing. (K3)
Feb.  6  Origin of Atoms: What are atoms made of, and why did they form? (K4)
Feb.  8  Apothegm to Axiom: Origin of Universal Rules? (K5)
Feb. 11  Origin of Stars: How do stars form and why are there different kinds? (K6)
Feb. 13  Origin of Galaxies: Why do galaxies form, and why different shapes? (K7)
Feb. 15  Origin of Complexity: How did we get what we got? (K8)
Feb. 18  Origin of Patterns: How did we get what we see? (K9)
Feb. 20  Origin of Molecules: How and why do molecules form? (K10)
Feb. 22  Origin of Biomolecules: What makes a molecule biological? (K11)
Feb. 25  DISCUSSION:  What is Life? (K12)
Feb. 27  Origin of Life: How, where, and why did life originate? (K13)
Mar.  1  Prokaryotes I: Why are there different forms of bacteria? (K14)
Mar.  4  Bacteria II: Bacterial diversity (K15)
ORIGINS Syllabus continued

Mar. 6  Procaryote Complexes: How and why do bacteria form complex structures? (K16)

Mar. 8  Origin of the Eukaryote Cell: How and why did Eukaryote cells “evolve?” (K17)

Mar. 11  Origin of Sex: How and why did sex evolve? (K18)

Mar. 13  Eukaryote Complex: How and why does the Eukaryote cell form complex structures? (K19)

Mar. 15  Mid-Term Team Project: What Are We? (K20)

Mar. 18 - Mar. 23  Spring Break

Mar. 25  Eukaryote Diversity: Why are Eukaryote protists diverse? (K21)

Mar. 27  Origin of Multicellularity: How did multicellular organisms evolve? What did viruses have to do with it? (K22)

Mar. 29  Origin of Plants: How and why did plants originate? (K23)

Apr. 1  Origin of Animals (Metazoans): How and why did animals originate? (K24)

Apr. 3  Animal Diversity I: focus on Derived characteristics (K25)

Apr. 5  Animal Diversity II: focus on Primitive characteristics (K26)

Apr. 8  The Fossil Record: How does the fossil record support evolution? (K27)

Apr. 10  Origin of Birds: How and why did birds originate? (K28)

Apr. 12  Origin of Mammals: How and why did mammals originate? (K29)

Apr. 15  SKULL LAB: Similarities & differences we see in vertebrate skulls. (K30)

Apr. 17  Origin of Homo sapiens: How and why did Homo sapiens originate? (K31)

Apr. 19  Origin of Humanness: Why did Homo become “human?” (K32)

Apr. 22  PROJECT MEETINGS

Apr. 24  Origin of Consciousness: Is consciousness special? (K33)

Apr. 26  DISCUSSION: Who are we? (K34)
Apr. 29  Originating New Life Forms: *Should we* create new life forms? (K35)

May 1  Review (K36)

May 3  Synthesis I (Pre-life) (K37)

May 6  Synthesis II (Post-life) (K38)

May 8 - 10  **Final Projects & Explications Presented**