Department of Anthropology

University of Balochistan, Quetta

Course: Evolution in Anthropology **Course Code: ANTH 602**

Instructor: Mr. Noor Bakhsh

Introduction:

Evolution is the one of the core principles of anthropology. As it studies the evolution of man and everything related to man, from physical or biological evolution to socio-cultural. But in this course we are concerned with biological or physical evolution of man. This course falls under the sub discipline of anthropology; physical or biological anthropology, particularly in the boundary of the sub branches of physical anthropology; like paleoanthropology and primatology.

This course is an examination of the unifying principles mechanisms of evolution including and particularly human evolution: the basic principles of natural selection, mutations, and gene flow, including various theories of human evolution, like Lamarckism, new Lamarackism, Darwinism, new Darwinism and modern synthetic theory that explains the evolution of life in terms of genetic changes occurring in the population that leads to the formation of new species The course also covers the techniques and methods of excavation and study of the fossil record to explore the evolutionary process and different stages of human evolution from Australopithecus afarensis to modern Homo sapiens and the age of bipedalism as well as the position of humans within the primate order, and the features that make Homo sapiens unique; that also include the upright posture.

Learning Objectives

- Students will be able to analyze the dynamics of evolution in relationship to genetics.
- Students will be able to trace the geologic records of fossil forms leading to the characteristic structure of modern Homo sapiens.
- Describe the process of evolution and speciation by employing the concepts upon which modern evolutionary theory is based and recognize examples of each.
- Diagram the place of Homo sapiens within the animal kingdom as expressed in the classification of humans and demonstrate what evidence is used to determine evolutionary relationships.
- Differentiate between monkeys, apes, and humans by identifying both imilarities and differences.

- Compare and contrast the anatomy of humans and the great apes, and be able to identify those anatomical features that provide evidence for human evolution. Explain and evaluate this evidence.

- Compare the social behavior of human and nonhuman primates and demonstrate how studies of primate behavior shed light on contemporary human behavior.

- Categorize the important hominid fossils and construct a diagram illustrating the evolutionary history of hominids.

- Students will be able to analyze past anthropological knowledge along with current research in the field in order to formulate a hypothesis addressing the possible future direction of human evolution.

Text Books

1. **Jurmain, Robert, Lynn Kilgore, Wenda Trevathan, and Eric Bartelink.**

   ***Essentials of physical anthropology*, 8th edition, 2011, 2009 Wadsworth, Cengage Learning.**

2. **Rymond Scupin,**

   ***Cultural anthropology: A global perspective*. 8th edition, 2012, Pearson. Chapter. 3, 4, 5**

Lesson Plans and Reading Materials

Sr. No	Topics	Chapters or Readings
1.	**Evolution** Cosmologies and human origins Scientific thoughts and human origin	Book. 2, Chapter. 3
2.	**A brief history of evolutionary thought** The scientific Revolution Precursors to the theory of evolution	Book. 1, Chapter 2 Book.2, Chapter.3
3.	**Theories of Evolution** Lamarck's theory of inheritance of Acquired Characteristics Darwin, Wallace, and Natural Selection	Book.2, Chapter.3 Book. 1, Chapter 4
4.	**The limitations of nineteenth- century evolutionary theory** Opposition to the evolution today A brief history of opposition to evolution in the United States	Book. 1, Chapter 2
5.	**Principles of Inheritance** Mendal and Modern Genetics Inheritance and molecular Genetics	Book.2, Chapter.3 Book. 1, Chapter 4
6.	**Population genetics and evolution (Modern synthetic theory)** Mutation, Gene Flow, Genetic Drift, Natural selection, cultural ,behavioral and epigenetic factors **Assignment No. 1**: Given what you've read about the scientific method in the chapters, how would you explain the differences between science and religion as methods of explaining natural phenomena? Do you personally see a conflict between evolutionary and	Book.2, Chapter.3 Book. 1, Chapter 4

	religious explanations of how species came to be?	
7.	**The record of the past** Paleoanthropological Study What Are Fossils and How Do They Form? Fossils and fossil localities Interpreting Species and Other Groups in the Fossil Record	Book. 2, Chapter 2 Book.1, Chapter.5
8.	**The Primates** Primate Characteristics Movement and Locomotion Dentition, Eyesight, and Brain Size Reproduction and Maturation	Book.1. Chapter 6. Book.2. Chapter. 4
9.	**Classification of Primates** Primate Subdivisions Classification of Fossil Primates	Book.1. Chapter 6. Book.2. Chapter. 4
10.	**Evolution of the Primate Order** Prosimians Evolution of the Anthropoids Emergence of the Hominoids Modern Ape	Book.1. Chapter 6. Book.2. Chapter. 4
11.	**Primate Behavior** The Evolution of Behavior Some Factors That Influence Social Structure	Books.1. Chapter.7 Book.2. Chapter.4
12.	**Primate Social Behavior** Dominance Communication Aggressive Interactions Affiliation and Altruism	Books.1. Chapter.7 Book.2. Chapter.4
13.	**Reproduction and Reproductive Behaviors** Female and Male Reproductive Strategies Sexual Selection Infanticide as a Reproductive	Books.1. Chapter.7 Book.2. Chapter.4

	Strategy?	
14.	**The Human Primate** Language	Books.1. Chapter.7 Book.2. Chapter.4
	Assignment No. 2. How does the human primate differ from other primates physically and socially?	
15.	**Hominin Evolution** Bipedalism Reduction of face, teeth and jaws Increase in the cranial capacity	Book.2. Chapter.5 Books.1. Chapter.8
16.	**Fossil Evidence for Hominin Evolution** The Oldest Hominins *Australopithecus anamensis:* Early Hominins from Lake Turkana Australopithecus afarensis	Book.2. Chapter.5 Books.1. Chapter.8
17.	**Continued…** The Laetoli Footprints Australopithecus africanus The Robust Australopithecines: Branches on The Family Tree	Book.2. Chapter.5 Books.1. Chapter.8
18.	**Continued …** The Origins of Genus *Homo* *Homo erectus*	Book.2. Chapter.5 Books.1. Chapter.9
19.	**Interpreting the Fossil Record** Changing Views Current Perspectives Genetic Differences and Hominin Evolution	Book.2. Chapter.5
20.	**From *Homo erectus* to *Homo sapiens*** Transitional Forms	Book.2. Chapter.5 Books.1. Chapter.9

	The Evolution of *Homo sapiens*	
21.	**Genetic Data and Modern Human Origins** Mitochondrial Eve Paternal Genetic Ancestry	Book.2. Chapter.5 Books.1. Chapter.9
22.	**Archaic and Anatomically Modern** ***Homo sapiens*** *Homo sapiens neanderthalensis* Denisovans or the Denisova hominins	Book.2. Chapter.5 Books.1. Chapter.9
	Assignment No. 3 **Watch the documentary : From Ape to Man,** and write in detail the different stages of evolution of Genus Homo in chronological order along with the characteristics of each stage; homo erectus, homo Habilis, neanderthal and Homo sapiens https://www.youtube.com/watch?v=4K8MeFQp7u4	
	Assignment No. 4. Write the review of the documentary : **Origin of Humans - National Geographic Special Documentary 2016 - YouTube_2** https://www.youtube.com/results?search_query=Origin+of+Humans+-+National+Geographic+Special+Documentary+2016+-+YouTube_	

For further study consult the following Readings

1. Wesch, M. (2018). *The Art of Being Human: A Textbook for Cultural Anthropology*. New Prairie Press. Chapter 3.
2. Calcagno, J. M., & Fuentes, A. (2012). What makes us human? Answers from evolutionary anthropology. *Evolutionary Anthropology: Issues, News, and Reviews*, *21*(5), 182-194.

Bibliography:

1. Goldman, I. (1959). Evolution and Anthropology. *Victorian Studies*, *3*(1), 55-75.

2. Geary, D. C. (1998). *Male, female: The evolution of human sex differences*. American Psychological Association.
3. Bateson, G. (2000). *Steps to an ecology of mind: Collected essays in anthropology, psychiatry, evolution, and epistemology*. University of Chicago Press.
4. Stocking Jr, G. W., & Stocking, J. G. W. (1982). *Race, culture, and evolution: Essays in the history of anthropology*. University of Chicago Press.
5. Lande, R. (1979). Quantitative genetic analysis of multivariate evolution, applied to brain: body size allometry. *Evolution*, *33*(1Part2), 402-416.
6. Birdsell, J. B. (1972). *Human evolution: An introduction to the new physical anthropology*. Rand McNally.
7. Alland, A. (2012). *Evolution and human behaviour: an introduction to Darwinian anthropology*. Routledge.
8. Mirazón Lahr, M., & Foley, R. A. (1998). Towards a theory of modern human origins: geography, demography, and diversity in recent human evolution. *American Journal of Physical Anthropology: The Official Publication of the American Association of Physical Anthropologists*, *107*(S27), 137-176.
9. Brace, C. L., & Montagu, A. (1977). *Human evolution: an introduction to biological anthropology*. Macmillan Pub Co.
10. Fuentes, A. (2015). Integrative anthropology and the human niche: toward a contemporary approach to human evolution. *American Anthropologist*, *117*(2), 302-315.