

COSMOLOGY AND CREATION

Course Objective: A major objective of this course is to explore possible answers to the questions, "Where do we come from?", "What is our place in this universe?" and "What is our final destiny?". In the process of so doing, students will be encouraged to consider several theories of the universe - classical models, biblical doctrines and arguments, scientific theories based on compiled data, and a variety of western and eastern concepts. The course will also attempt to acquaint students with scientific methods used to address these weighty issues and balance them with theological considerations and philosophical systems, and see that these modes of inquiry can work **with** and not necessarily **against** each other.

Goals:

- i. To gain a clear understanding of Cosmology, including its historical, theological, philosophical and scientific perspectives.
- ii. To gain a clear understanding of Creation and Evolution, both in their religious and scientific dimensions.
- iii. To explore the relation between science and religion through the study of Cosmology and Creation.
- iv. To explore the worldview created by modern Cosmology and see how we can relate to it meaningfully and gain a global perspective in life.

COURSE OUTLINE

Introductory Note: Cosmology is the study of the origin, evolution and structure of the observable physical universe. We cannot deal with the evolution of the universe by simply describing what happens to each part; we must consider the universe as a unique whole. It is rarely clear in cosmological research and discussion just where strictly scientific analysis ends and philosophical or theological reflection begins. It is now accepted that cosmology as a discipline, with its own emerging questions, methods and analyses, has important implications for theology and philosophy. The uniting factor in this course is in our effort to deal with the universe as a whole, and in exploring the place and role of humanity in this vast universe.

I. Introduction

- (a) What is Cosmology?

II. (a) Methods and Theories in Scientific and Religious Enquiry

- i. Basic definitions - Realism, Idealism, Rationalism, Empiricism, Reductionism, Inductivism, etc.
- ii. Theories, Creeds, Experience

iii. Models, Patterns, Paradigms

(b) Basic Models in Relating Science and Religion

Ian Barbour's four conceptual models

III. A Brief History of Cosmology

(a) Early developments in cosmology

i) Neolithic Cosmology:

ii) Egyptian/Mesopotamia Cosmology:

iii) Greek Cosmology:

iv) Anthropocentric Universe:

(b) The Copernican revolution and its aftermath

i. Nicolaus Copernicus and his heliocentric model

ii. Johannes Kepler and the elliptical orbits

iii. Galileo Galilei and the beginning of observational astronomy

iv. Isaac Newton and the mechanistic universe

© Quantum/Relativistic Cosmology

i. Scientific discoveries radically change the existing worldview:

Albert Einstein - General theory of relativity

Edwin Hubble - Theory of the expanding universe

Fred Hoyle - Steady state theory

Stephen Hawking - Quantum Cosmology

IV. God, Creation and Cosmology

(a) Biblical account of creation in Genesis 1 and 2

(b) Creation in Prophecy and Psalms

(c) Creation versus Evolution

(d) Cosmology and Creation

V Cosmology and Theology

i. Concept of time and space

ii. *Creatio ex nihilo* and *creatio continua*

iii. Anthropic principles - Design arguments

iv. Chance and necessity

v. Eschatology

Texts:

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Videos (available in the library)

Canticles to the Cosmos with Brian Swimme:

1. The Primeval Fireball
2. The Feast of Consciousness
3. The Fundamental Order of the Universe
4. A Magical Planet
5. The Nature of the Human
6. The Human Story

The Astronomers: A Window to Creation

The Origin of the Universe

The Grand Design 