



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ

Εθνικόν και Καποδιστριακόν  
Πανεπιστήμιον Αθηνών

— ΙΔΡΥΘΕΝ ΤΟ 1837 —

ΣΧΟΛΗ ΕΠΙΣΤΗΜΩΝ ΤΗΣ ΑΓΩΓΗΣ

ΠΑΙΔΑΓΩΓΙΚΟ ΤΜΗΜΑ ΔΗΜΟΤΙΚΗΣ ΕΚΠΑΙΔΕΥΣΗΣ

## COURSES FOR CIVIS STUDENTS

- 1) Introduction to the Nature of Science (NOS): Epistemology and History ( Professor K. Scordoulis, G. Katsiaboura) **WINTER SEMESTER**
- 2) Environmental Ethics and Climate Crisis(Professor K. Scordoulis, G. Katsiaboura) **SPRING SEMESTER**
- 3) SocioScientific Issues in Biology and Geography (Professor Evangelia Mavrikaki & Apostolia Galani) **WINTER SEMESTER**
- 4) School-based education for drug, alcohol and internet abuse prevention (Professor A. Tsiboukli) **SPRING SEMESTER**
- 5) Special topics in Mathematics Education (Professor C. Misailidou) **WINTER SEMESTER**
- 6) Emerging Technologies in Education (Professor G. Koutromanos)
- 7) **WINTER SEMESTER**
- 8) Systemic approaches and complexity in interdisciplinary mathematics education (Professor A. Moutsios-Rentzos) **SPRING SEMESTER**
- 9) Theory of Literature and Literary Criticism. An Introduction. ( Professor Tzina Kalogirou) **SPRING SEMESTER**
- 10) Literature Teaching :Theory and Practice. ( Professor Tzina Kalogirou) **WINTER SEMESTER**

## COURSE DESCRIPTION

- 1) Introduction to the Nature of Science (NOS): Epistemology and History ( Professor K. Scordoulis, G. Katsiaboura) **WINTER SEMESTER**

### History and Epistemology of Science

Introduction

The Medieval World View

Basic Astronomical Phenomena and Planetary Models.

Astronomical Models. Qualitative and quantitative. "Saving the Appearances."

Planetary Astronomy and the Ptolemaic Paradigm. A model of success for 1500 years.

Copernicus v. Ptolemy. The Copernican Revolution as anomalistic. The equivalence of Copernican and Ptolemaic astronomical models.

Kepler's Laws; Heavenly harmony and Pythagoreanism.

Reflections on the Copernican Revolution

The Old Physics of Motion: Aristotle. Impetus.

The New Physics: Kinetics - the 'why' of motion.

The New Physics Completed. Galileo's Trial.

Newton. His life. The apple myth.

The Grand Design: Newton's Principia. Contents, Laws, Rules of Reasoning.

The New Scientific Method of the Seventeenth Century. Galileo, Bacon, and Descartes

The Legacy of the Scientific Revolution. Considerations and Reflections.

The Beginning of Modern Physics: Rutherford to Planck

Einstein, 1905 and Special Relativity; General Relativity.

Bohr and the Theory of the Atom

Copenhagen, and the Creation of Quantum Mechanics

The Interpretation of Quantum Mechanics. The Legacy of Modern Physics

The following are the required texts for the course:

H. Butterfield: The Origins of Modern Science

B. L. Cline: Men Who Made a New Physics

I.B. Cohen: Birth of a New Physics