COURSE OUTLINE

1. OVERVIEW

FACULTY	FACULTY OF HUMANITIES AND SOCIAL SCIENCES		
SECTION	DEPARTMENT OF PRIMARY EDUCATION		
LEVEL OF STUDY	UNDERGRADUATE		
COURSE TITLE			
Science Education			
COURSE CODE	ΦΕ0603	**SEMESTER**	4
HOURS per WEEK	4	**ECTS**	5
COURSE CATEGORY	Compulsory	**COURSE TYPE**	Scientific area
LANGUAGE OF INSTRUCTION AND EXAMINATIONS	Modern Greek	**PREREQUISITES**	ΦΕ0201
OFFERED TO ERASMUS	NO	**ECLASS PAGE**	https://eclass.uth.gr/courses/PRE_U_145/

2. LEARNING OUTCOMES

Learning Outcomes
Upon successful completion of the course, students are expected to: understand the scientific nature of Science Education define Scientific Literacy and understand its nature acquire knowledge related to Nature of Science and Nature of Scientific Inquiry learn teaching models and the correspondent learning theories understand the process of Didactic Transposition become familiar with various teaching tools Students are also expected to: produce analogies design models pre-design concept maps design inquiry activities on concepts and natural phenomena (at primary education) evaluate lesson plans design and assess teaching-learning sequences
General Competencies
Adaptability to new situations Autonomous work Work in interdisciplinary contexts Respect for difference and multiculturality Respect for the natural environment Critical and self-critical thinking Advancement of free, creative and inductive thinking

3. CONTENT

Science teaching as a science: features, questions and research tools

The nature of scientific literacy I: scientific concepts and conceptual knowledge

The nature of scientific literacy II: scientific methods and procedural knowledge

The nature of scientific literacy III: knowledge of the Nature of Science.

The nature of scientific literacy IV: knowledge of the Nature of Scientific Inquiry.

Didactic Transposition (First Stage): Scientific knowledge as teachable knowledge. The textbook (and the curriculum) as a source of teachable knowledge.

Didactic Transposition (Second Stage): Transformation of teachable knowledge to taught knowledge. Learning Theories: Constructivism – Misconceptions and Conceptual change. Teaching models in science education: Inquiry-based learning. Teaching tools and media I: proportions and models Teaching tools and media II: concept maps Teaching tools and media III: Inquiry as a teaching tool Lesson planning

4. TEACHING AND LEARNING METHODS - ASSESSMENT

TEACHING MODE	In person		
USE OF ICT	Teaching and learning: Slide show, Internet use Communication: Webmail, eClass		
COMPULSORY ATTENDANCE	NO	**MAXIMUM NUMBER OF ABSENCES:**	

TEACHING ORGANIZATION

Activity	*Semester Workload (hours)*
Lectures	26
Tutorial	26
Study	70
Examination	2
Course total	***124***

EVALUATION

Type	*Format*	*Weighting*
Final written exam	Multiple Choice Questions Short Answer Questions Open-Ended Questions	100%

5. RECOMMENDED BIBLIOGRAPHY

Textbooks (Eudoxus)

Χαλκιά Κ. (2011). Διδάσκοντας Φυσικές Επιστήμες. Αθήνα. Εκδόσεις Πατάκη

Harlen W., Elstgeest J. (2005). Unesco. Διδασκαλία και μάθηση των φυσικών επιστημών στην πρωτοβάθμια εκπαίδευση. Γ. ΔΑΡΔΑΝΟΣ - Κ. ΔΑΡΔΑΝΟΣ Ο.Ε.

Other Books & Notes

Αθανασίου Κυριάκος (2015). Διδακτική της Βιολογίας. [ηλεκτρ. βιβλ.] Αθήνα: Σύνδεσμος Ελληνικών και Ακαδημαϊκών Βιβλιοθηκών. Διαθέσιμο στο: www.kallipos.gr

Driver R. et al (2000). Οικοδομώντας τις έννοιες των Φυσικών Επιστημών. Αθήνα. Τυπωθήτω

Scientific Journals

Scientific Articles

Other