Course guide
295900 - TCAEM - Technology and Science in Ancient Times: Egypt and Mesopotamia

Last modified: 02/10/2025

Unit in charge: Barcelona East School of Engineering
Teaching unit: 713 - EQ - Department of Chemical Engineering.

Degree: BACHELOR'S DEGREE IN BIOMEDICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN ENERGY ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN MATERIALS ENGINEERING (Syllabus 2010). (Optional subject).

Academic year: 2025 **ECTS Credits:** 6.0 **Languages:** Spanish

LECTURER

Coordinating lecturer: FRANCISCO JAVIER GIMENEZ IZQUIERDO

Others: Primer quadrimestre:
FRANCISCO JAVIER GIMENEZ IZQUIERDO - Grup: T1

TEACHING METHODOLOGY

The teacher will develop theoretical explanations as well as practical examples. In addition, the teacher will guide different works for homework. Active learning as well as Cooperative learning will be extensively used.

LEARNING OBJECTIVES OF THE SUBJECT

At the end of the course, the student should be able to:
- Describe the evolution of the ancient mediterranean civilizations at the Bronze Age
- Identify funerary monuments depending on the place and the time
- Identify the materials used in the antiquity in pigments, glass objects and jewels.
- Describe the commercial routes in the ancient Mediterranean
- Identify the metals used in the Bronze Age and their application

STUDY LOAD

Type	Hours	Percentage
Hours large group	60,0	40.00
Self study	90,0	60.00

Total learning time: 150 h

CONTENTS

1) INTRODUCTION

Description:
1.1 Myth, science and technology: the mythical discourse and the logical discourse
1.2 The Mediterranean Neolithization
1.3 The Urban Revolution in Mesopotamia
1.4 The Bronze Age

Full-or-part-time: 15h
Theory classes: 6h
Self study : 9h

2) ANCIENT EGYPTIAN CIVILIZATION

Description:
2.1 Egyptology: from Cleopatra VII until XXI century
2.2 Geography and Symbology
2.3 Ancient Egyptian writing
2.4 History of the Ancient Egypt

Full-or-part-time: 25h
Theory classes: 10h
Self study : 15h

3) TECHNOLOGY OF THE FUNERARY PRACTICES

Description:
3.1 Egyptian pyramids. The Great Pyramid at Giza
3.2 Egyptian tombs. The Valley of the Kings (KV)
3.3 Mummification and paleopathology

Full-or-part-time: 25h
Theory classes: 10h
Self study : 15h

4) ANCIENT DECORATIVE ARTS

Description:
4.1 The industry of Ancient pigments and colors
4.2 The 'Egyptian Blue'
4.3 Glass

Full-or-part-time: 25h
Theory classes: 10h
Self study : 15h

5) ANCIENT MEDITERRANEAN METALLURGY

Description:
5.1 Copper
5.2 Arsenical copper
5.3 Bronze
5.4 Tin "mistery"

Full-or-part-time: 25h
Theory classes: 10h
Self study : 15h

6) GEMS STONES

Description:
6.1 Lapis
6.2 Obsidian
6.3 Turquoise
6.4 Other gem stones

Full-or-part-time: 25h
Theory classes: 10h
Self study : 15h

7) TROY AND THE END OF THE BRONZE AGE

Description:
7.1 The Sea Peoples
7.2 The Trojan War
7.3 The start of the Iron Age

Full-or-part-time: 10h
Theory classes: 4h
Self study : 6h

GRADING SYSTEM

EXAMINATION RULES.

Written exams with books.

BIBLIOGRAPHY

Basic:
- Shaw, Ian. Historia del antiguo Egipto. Madrid: La Esfera de los Libros, [2016]. ISBN 9788490606674.
- Nicholson, Paul T.; Shaw, Ian. Ancient egyptian materials and technology. Cambridge: Cambridge University Press, cop. 2000. ISBN 0521452570.

RESOURCES

Other resources:
Booklet in ATENEA
Articles from scientific journals
Books chapters
Photographies