

SUBJECT TEACHING GUIDE

224 - Analysis techniques of Ceramic and Metallic Material

Master's Degree in Prehistory and Archaeology

Academic year 2023-2024

1. IDENTIFYING DATA					
Degree	Master's Degree in Prehistory and Archaeology			Type and Year	Optional. Year 1
Faculty	Faculty of Humanities				
Discipline	Optional Subjects in Both Specialities				
Course unit title and code	224 - Analysis techniques of Ceramic and Metallic Material				
Number of ECTS credits allocated	3	Term	Semester based (2)		
Web					
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. CIENCIAS HISTORICAS				
Name of lecturer	PABLO ARIAS CABAL				
E-mail	pablo.arias@unican.es				
Office	Edificio Interfacultativo. Planta: + 1. DESPACHO PROFESORES (146)				
Other lecturers	JESUS SETIEN MARQUINEZ				

3.1 LEARNING OUTCOMES
- Acquisition of basic knowledge of the currently available physical and chemical analysis
- Ability on the critical interpretation of the results of the analysis of ceramic and metallic materials
- Ability on the choice of the analytical techniques
- Development of the critical sense in the process of scientific research

4. OBJECTIVES
Introduction of the students on the techniques of analysis of ceramic and metallic materials

6. SUBJECT PROGRAM	
CONTENTS	
1	Analysis of ceramic materials 1.1. Introduction to the archaeometric analysis of ceramic materials 1.2. Techniques of mineralogical and macrostructural analysis 1.3. Techniques of chemical analysis and statistical analysis 1.4. Analysis of the results and their Archaeological interpretation
2	Archaeometallurgy 2.1. Techniques of elemental analysis 2.2. Metallography 2.3. Lead isotopes analysis 2.4. Technology of the copper metallurgy 2.5. The noble metals 2.6. Technology of the iron metallurgy 2.7. Mining and mineral resources
3	Seminar: Physico-chemical characterisation of copper metal items

7. ASSESSMENT METHODS AND CRITERIA				
Description	Type	Final Eval.	Reassessn	%
Essay on a topic related to the course	Work	No	Yes	80,00
Participation in the activities of the course	Others	No	No	20,00
TOTAL				100,00
Observations				
If the sanitary conditions oblige to modify the conditions to an scenery 2 (mixed teaching) or 3 (virtual teaching), the assessment activities will be managed and evaluated through the MOODLE platform.				
Observations for part-time students				
The time possibilities of the students will be considered when the topic of the essay will be assigned. In case of the partial time students a topic and a time adapted to their necessities will be allocated.				

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

ARNOLD, D.E. (1985): *Ceramic Theory and Cultural Process*. Cambridge University Press, *New Directions in Archaeology*, Cambridge.

BROTHWELL, D. & POLLARD, A. M. (2001) *Handbook of Archaeological science*, Londres, John Wiley & Sons, Ltd.

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FERNÁNDEZ-MANZANO, J. y SARABIA, F.J. (1998): *Arqueometalurgia del bronce. Introducción a la metodología de trabajo*. *Studia Archaeologica*, 86. Universidad de Valladolid. Valladolid.

GARCÍA HERAS, M. y OLAETXEA, C. (1992): "Métodos y análisis para la caracterización de cerámicas arqueológicas. Estado actual de la investigación en España", *Archivo Español de Arqueología*, 65: 263-289.

HUNT ORTIZ, M.A. (2003) *Prehistoric Mining and Metallurgy in South West Iberian Peninsula*. BAR, *International Series*, 1188. Archaeopress. Oxford.

LINARES, J.; HUERTAS, F. y CAPEL, J. (1983): "La arcilla como material cerámico. Características y comportamiento", *Cuadernos de Prehistoria de la Universidad de Granada*, 8: 479-490

LIVINGSTONE SMITH, A., BOSQUET, D. & MARTINEAU, R. (2005) *Pottery manufacturing processes: reconstitution and interpretation*, Oxford, Archaeopress (BAR *International Series* 1349).

MOHEN, J. P. (1992): *Metalurgia prehistórica. Introducción a la paleometalurgia*. Masson, s.a. Barcelona.

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ORTON, C.; TYERS, P. y VINCE, A. (1993): *Pottery in Archaeology*. Cambridge University Press, *Cambridge Manuals in Archaeology*, Cambridge

PEREA, A. (1998): *Metalurgia del oro. Ámbitos tecnológicos en Prehistoria*. *Boletín Geológico y Minero*, 109 (5-6): 145-155.

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QUINN, P. S. (2013) *Ceramic petrography. The interpretation of archaeological pottery and related artefacts in thin section*, Oxford, Archaeopress.

REEDY, C. L. (2008) *Thin-section petrography of stone and ceramic cultural materials*, Londres, Archetype Publications.

RICE, P.M. (1987): *Pottery Analysis: a Sourcebook*. Chicago University Press, Chicago (Illinois).

RYE, O.S. (1981): *Pottery Technology. Principles and Reconstruction*. Taraxacum Inc., *Manuals on Archaeology Vol. 4*, Washington D.C

SILLAR, B. & TITE, M. S. (2000) *The challenge of "technological choices" for materials science approaches in archaeology*. *Archaeometry*, 42, 2-20.

TITE, M.S. (1999): "Pottery production, distribution, and consumption. The contribution of the Physical Sciences", *Journal of Archaeological Method and Theory*, 6 (3): 181-233.