Course guide
210741 - EC - Energy and Comfort

Last modified: 16/05/2025

Unit in charge: Barcelona School of Architecture
Teaching unit: 753 - TA - Department of Architectural Technology.
748 - FIS - Department of Physics.

Degree: MASTER'S DEGREE IN ADVANCED STUDIES IN ARCHITECTURE-BARCELONA (Syllabus 2015). (Optional subject).

Academic year: 2025 **ECTS Credits:** 5.0 **Languages:** Spanish

LECTURER

Coordinating lecturer: AGNESE SALVATI - ELENA GARCÍA NEVADO

Others: Primer quadrimestre:
ELENA GARCÍA NEVADO - AEMA1
AGNESE SALVATI - AEMA1

TEACHING METHODOLOGY

Go to Spanish or Catalan version

LEARNING OBJECTIVES OF THE SUBJECT

Go to Spanish or Catalan version

STUDY LOAD

Type	Hours	Percentage
Self study	87,5	70.00
Hours large group	37,5	30.00

Total learning time: 125 h

CONTENTS

title english

Description:
Principles of the environmental comfort on architecture. Comfort parameters and factors. Sensation and perception. The air conditions: psychometrics. Radiation and thermal and lighting repercussions. The indoor conditions related to the type of construction. The air movement and the thermal comfort. Indoor surfaces and their environmental repercussions. Control systems and its incidence in comfort

Specific objectives:
To improve knowledge foundations necessary to evaluate the environmental comfort of architectonic spaces, including lighting, acoustics and climatic aspects combined. The main point is to integrate, in a unique doctrine, different scientific fields usually disconnected; with the objective to obtain a global system of knowledge and evaluation of the energetic space in the buildings and other architectonic and urban spaces. At the same time, it is crucial to consider the relation between environmental sensation and perception, by opening a new way to the aesthetic consideration of the energetic phenomena on architecture.

Full-or-part-time: 125h
Theory classes: 15h
Laboratory classes: 30h
Self study : 80h

GRADING SYSTEM

Continuous evaluation (%) Final evaluation (%)
SE02 Oral presentations 30
SE08 Delivered work marks 50
SE09 Individual practical exercises 20

Continuous evaluation of accomplished work during the course, with a 50% for course's work, 20% for the final work and an additional 30% for the capacity and improvement of the scientific communication.

BIBLIOGRAPHY

Basic:
- Serra, R. Arquitectura y climas [on line]. Barcelona: Gustavo Gili, 1999 [Consultation: 12/05/2020]. Available on: https://ebookcentral.proquest.com/lib/upcatalunya-ebooks/detail.action?docID=3209537. ISBN 9788425217678.
- Butera, F. Dalla caverna alla casa ecológica: storia del comfort e dell'energia. Milano: Ambiente, 2004. ISBN 8889014059.
- Rybczynski, W. La casa. Historia de una idea. Madrid: Nerea, 1989. ISBN 8486763134.
- Schoenauer, N. 6.000 años de habitat: de los poblados primitivos a la vivienda urbana en las culturas de oriente y occidente. Barcelona: Gustavo Gili, 1984.
- Isalgué, A. Física de la llum i el so. Barcelona: Edicions UPC, 1995. ISBN 8476535449.

Complementary:
- Carslaw, H.S. Conduction of heat in solids. 2nd ed. Oxford: Clarendon, 1986. ISBN 0198533683.
- Rock, I. La percepción. Barcelona: Labor Prensa Científica, 1985. ISBN 8475930190.