



Universidad  
de Alcalá

# GUÍA DOCENTE

## COURSE GUIDE

**Virtual modelling in the history of painting**

**Undergraduate Degree in the  
Fundamentals of Architecture and  
Urban Planning  
University of Alcalá**

**Curso Académico / 2019-2020**  
Asignatura transversal – Cuatrimestre 1º

## COURSE GUIDE

Course Name:	<b>VIRTUAL MODELLING IN THE HISTORY OF PAINTING / PROYECTO ARQUITECTÓNICO VIRTUAL EN LA HISTORIA DE LA PINTURA</b>
Course Code:	<b>100132</b>
Degree to be obtained:	<b>DEGREE IN ARCHITECTURE AND DEGREE IN FUNDAMENTALS OF ARCHITECTURE AND TOWN PLANNING</b>
Department and Knowledge Area:	<b>ARCHITECTURE / ARCHITECTURAL PROJECTS</b>
Nature of Course:	<b>INTERDISCIPLINARY</b>
ECTS Credits:	<b>4 ECTS</b>
Course and semester:	<b>Interdisciplinary Subject / Semester 1<sup>o</sup></b>
Faculty:	Luis Laca (PTU)
Tutorial Timetable:	In conjunction with the course timetable: two hours before or after the class, time to be requested by student; if this time is not suitable, the time will be agreed upon between teacher and student.
Language of Instruction:	English

## 1. PRESENTATION

### General description:

The main area of study on this course is the reconstruction of the perspective of paintings and, from this reconstruction, the creation of virtual, three-dimensional models that will allow us to formulate hypotheses about the creation of the work of art in question.

For the purposes of perspective reconstruction, we will follow the methodology used by Rudolf Wittkower during his study of *The Flagellation of Christ* by Piero della Francesca. Prof. Laca has already used this methodology, with interesting results, to create a virtual reconstruction of the scene depicted in *Las Meninas*, the Gallery of the Prince in the Royal Alcazár of Madrid, which was destroyed by a fire in 1734.

The course will be divided into two blocks: the first four weeks will be devoted to theory, the next six weeks to practice. In the first block, several examples and a number of theoretical items will be explained in detail (particularly in relation to perspective). In the second block, students will develop a virtual three-dimensional reconstruction (a virtual architecture project) from a painting of their choice, focusing on the architectural space. (Important note: it will not be necessary to model the figures.)

Examples of paintings that might be studied are *The Spinners* by Velasquez, *La sagrada forma* by Claudio Coello or *The Yellow Room* by Van Gogh.

### Prerequisites and recommendations:

- To have a basic knowledge of CAD and modelling software (render, 3D) such as Autocad, Rhinoceros, etc.
- To have some interest in the history of painting

Note: the work will be the student's choice, with the supervision of Prof. Laca; it can be a classic or contemporary painting, the only condition being that it must contain the representation of an architectural space; this space may be either real or imaginary.

Schedule:

Wednesdays from 4 to 5 pm

## 2. COURSE AIMS

### General aims

- GA2 – Adequate knowledge of the history and theories of architecture, as well as knowledge of the arts, technology and related human sciences
- GA3 – Understanding of the fine arts as a factor that can influence the quality of architectural design

### Interdisciplinary aims

- IA1 – Knowledge of the history and theories of architecture, as well as knowledge of the arts, technology and related human sciences
- IA2 – Understand the role of fine arts as a factor that can influence the quality of architectural design

### 3. COURSE CONTENT

#### 4. LEARNING AND TEACHING METHODS- FORMATIVE ACTIVITIES

Course modules (may specify exact themes if you think it necessary)	Total number of classes, credits, and hours
Course Introduction	1 class
Case study: <i>The flagellation of Christ</i> and <i>Las meninas</i>	1 class
Lineal Perspective and Vision	1 class
CAD and Modelling	1 class
Practice Editing and correction of virtual projects	6 classes
Total 10 classes	4 ECTS

##### Introduction

- Case studies (theory)
- Development of the 3D model (practice)

#### 4.1. Distribution of credits (specified in hours)

Number of contact hours: 32 hours	Theory classes in large and small groups. Theory, practical activities, exhibition of works and feedback sessions
Number of student self-study hours: 43 hours	Includes tutorials, study hours, preparing activities, exam preparation, online activities
Total: 4 ECTS (1.5 theory + 2.5 practical) 75 hours	

#### 4.2. Methodological strategies, materials and didactic resources

Theory classes:	Case studies and examples
Feedback sessions:	Group (presentation on screen and board) and individual (desk)
Materials and resources:	The classroom: screen, blackboard, cork board, desks Other: visit to the Prado Museum

## 5. EVALUATION: Procedures, assessment and grading criteria

Grades will be based on continuous assessment of the virtual model, plus one regular exam and one special exam.

For the continuous assessment, class attendance, as well as enthusiasm and participation in classes, will be taken into account; the model itself will of course be considered.

The student's grade, based on a numeric scale from 1 to 10 as detailed below (both in relation to the course and the exams), will be decided based on assessment of the following factors by the teacher or teachers:

- General understanding of the subject 33%
- Development of ideas, application and originality 33%
- Participation in feedback sessions 33%

### Rating scale:

- Distinction: excellent grasp of basic concepts, high level of reflection and application, development of original ideas, completion of all tasks, team work, finding of complementary materials
- Merit: great level, above the average, originality
- Notable (B grade): strong understanding, average level of reflection
- Pass: sufficient knowledge and understanding
- Fail: low level of understanding and application, lack of commitment to the task, little participation in the group

### Course evaluation procedures:

- Continuous assessment of all tasks
- Exams

### Regular and special exams:

The exams will consist of the creation of a virtual modelling project based on the space depicted in a certain painting, which will be explained on the day of the exam; the models will be collected two weeks later, on the date indicated on the exam timetable.

## 6. REFERENCES

- A. Palomino de Castro y Velasco, A., *El museo pictórico y escala óptica*. Madrid, Lucas Antonio de Bedmar, 1715.
- G. Kubler, "The mirror in Las meninas", *The Art Bulletin*, vol. LXVII(2), p. 316, June 1985.
- D. G. Stork and Y. Furuichi, "Computer graphics synthesis for inferring artist studio practice: An application to Diego Velázquez's Las Meninas", *Electronic Imaging, SPIE*, vol. 7238, 723806, 2009.
- M. J. Kemp, *The science of art*, New Haven, London, Yale University Press, 1990.
- A. Ondériz (trad.), *La especularia de Euclides traduzida en lengua castellana*, Madrid, Viuda de Alonso Gómez, 1584.
- J. F. Moffit, "Anatomía de Las Meninas: realidad, ciencia y arquitectura", *Boletín del Museo del Prado*, vol. VII(21), pp. 173-183, 1986.
- Y. Dubois, "'Les Ménines' de Velázquez: l'unité retrouvée?", *Art & Fact*, vol. 27, pp. 105-130, 2008.
- D. Arasse, "L'oeil du maître", pp. 175-216 in *On n'y voit rien*, Paris, Folio Essais, 2003.
- L. Marin, "Du cadre au décor ou la question de l'ornement dans la peinture", *Hors de cadre*, vol. 2, pp. 177-200, 1984.
- R. Wittkower and B. A. R. Carter, "The perspective of Piero della Francesca's 'Flagellation'", *Journal of the Warburg and Courtauld Institutes*, vol. 16(3/4), pp. 292-302, 1953.
- F. Marías (edit.), *Otras Meninas*, Madrid, Ediciones Siruela, 2007 [1995].
- E. Panofsky, *Perspective as symbolic form*, C. S. Wood, Transl. MIT Press, 1996 [1927].
- B. Rogers and K. Brecher, "Straight lines, 'uncurved lines', and Helmholtz's 'great circles on the celestial sphere'", *Perception*, vol. 36(9), pp. 1275-1289, 2007.
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