



## Teaching Guide

Identifying Data				2019/20
<b>Subject (*)</b>	Drawing in Architecture	<b>Code</b>	630G02002	
<b>Study programme</b>	Grao en Estudos de Arquitectura			
Descriptors				
<b>Cycle</b>	<b>Period</b>	<b>Year</b>	<b>Type</b>	<b>Credits</b>
Graduate	1st four-month period	First	Basic training	6
<b>Language</b>	SpanishEnglish			
<b>Teaching method</b>	Face-to-face			
<b>Prerequisites</b>				
<b>Department</b>	Expresión Gráfica Arquitectónica			
<b>Coordinador</b>	Mantiñan Campos, Carlos	<b>E-mail</b>	carlos.mantinan@udc.es	
<b>Lecturers</b>	Caridad Yañez, Eduardo Fernandez-Gago Longueira, Paula Fraga Lopez, Fernando Fraga Lopez, Francisco Javier Mantiñan Campos, Carlos	<b>E-mail</b>	eduardo.caridad@udc.es paula.fernandez-gago@udc.es fernando.fraga@udc.es javier.fraga@udc.es carlos.mantinan@udc.es	
<b>Web</b>	<a href="http://departamentos.etsa.udc.es/webryta/">http://departamentos.etsa.udc.es/webryta/</a>			
<b>General description</b>	This subject aims to introduce students to the graphic representation of architecture, from two different perspectives: Architectural Drawing and Freehand Drawing.			

## Study programme competences

Code	Study programme competences
A1	"Ability to apply graphical procedures to the representation of spaces and objects (T) "
A2	Ability to conceive and represent the visual attributes of objects and master proportion and drawing techniques, including digital ones (T)
A3	Knowledge of spatial representation systems and projections adapted and applied to architecture
A4	Knowledge of the analysis and the theory of form and the laws of visual perception adapted and applied to architecture and urbanism
A5	"Knowledge of the metric and projective geometry adapted and applied to architecture and urbanism "
A63	Development, presentation and public review before a university jury of an original academic work individually elaborated and linked to any of the subjects previously studied
B1	Students have demonstrated knowledge and understanding in a field of study that is based on the general secondary education, and is usually at a level which, although it is supported by advanced textbooks, includes some aspects that imply knowledge of the forefront of their field of study
B4	Students can communicate information, ideas, problems and solutions to both specialist and non-specialist public
B5	Students have developed those learning skills necessary to undertake further studies with a high level of autonomy
B6	Knowing the history and theories of architecture and the arts, technologies and human sciences related to architecture
B7	Knowing the role of the fine arts as a factor that influences the quality of architectural design
B12	Understanding the relationship between people and buildings and between these and their environment, and the need to relate buildings and the spaces between them according to the needs and human scale
C1	Adequate oral and written expression in the official languages.
C2	Mastering oral and written expression in a foreign language.
C3	Using ICT in working contexts and lifelong learning.
C4	Exercising an open, educated, critical, committed, democratic and caring citizenship, being able to analyse facts, diagnose problems, formulate and implement solutions based on knowledge and solutions for the common good
C5	Understanding the importance of entrepreneurial culture and the useful means for enterprising people.
C6	Critically evaluate the knowledge, technology and information available to solve the problems they must face
C7	Assuming as professionals and citizens the importance of learning throughout life
C8	Valuing the importance of research, innovation and technological development for the socioeconomic and cultural progress of society.

## Learning outcomes



Learning outcomes	Study programme competences		
<p>Ability to apply graphic representation systems.</p> <p>Ability to handle projection and section systems.</p> <p>Ability to handle the quantitative and selective aspect of the scale.</p> <p>Ability to establish the relationship between the plane and depth.</p>	A1	B1 B4 B5 B6 B7 B12	C1 C2 C3 C4 C5 C6 C7 C8
<p>Ability to conceive and represent the figure, color, texture and brightness and also dominate the objects proportion. Knowledge of the drawing techniques, all of them fundamental to the correct approach to the projectual skill, a prelude to the project representation. Knowledge and understanding of the stages of graphic learning, from the initial preceptual stage to the final creative representation.</p>	A2	B1 B4 B5 B6 B7 B12	C1 C2 C3 C4 C5 C6 C7 C8
<p>Knowledge and understanding of systems of spatial representation and their relation to the processes of graphical conceptualisation and visualisation of the different stages of architectural and urban design.</p>	A3	B1 B4 B5 B6 B7 B12	C1 C2 C3 C4 C5 C6 C7 C8
<p>Knowledge and understanding of the laws of proportion and visual perception, theories of form and image, aesthetic theories of color and phenomenological analysis of architectural and urban form.</p>	A4	B1 B4 B5 B6 B7 B12	C1 C2 C3 C4 C5 C6 C7 C8
<p>Knowledge and understanding of the metric and projective geometry as the foundations of the layout, design and architectural composition.</p>	A5	B1 B4 B5 B6 B7 B12	C1 C2 C3 C4 C5 C6 C7 C8
<p>Ability to apply knowledge and skills in relation to Systems of Representation, Graphical Conceptualisation, Analysis of forms and Graphical Restoration, for the production, presentation and defense before a University Board of Examiners of an original piece of academic work based on the student's own research in relation to any of the areas covered by the course.</p>	A63	B1 B4 B5 B6 B7 B12	C1 C2 C3 C4 C5 C6 C7 C8



Contents	
Topic	Sub-topic
FREEHAND DRAWING	Graphic learning methodology applied to architectural perception. Expressive representation as a first step concerning graphic learning. Lineal perspective applied to freehand drawing. Expressive volume representations: axonometric, perspectives, models...
INTRODUCTION TO ARCHITECTURAL DRAWING	Graphic conventions. Scale and proportions. Plans, elevations and architectural sections.

Planning				
Methodologies / tests	Competencies	Ordinary class hours	Student?s personal work hours	Total hours
Introductory activities	A1 A2 A3 A4 A5 A63 B1 B4 B5 B6 B7 B12 C1 C2 C3 C4 C5 C6 C7 C8	2	0	2
Supervised projects	A1 A2 A3 A4 A5 A63 B1 B4 B5 B6 B7 B12 C1 C2 C3 C4 C5 C6 C7 C8	22	45	67
Workshop	A1 A2 A3 A4 A5 A63 B1 B4 B5 B6 B7 B12 C1 C2 C3 C4 C5 C6 C7 C8	22	45	67
Guest lecture / keynote speech	A1 A2 A3 A4 A5 A63 B1 B4 B5 B6 B7 B12 C1 C2 C3 C4 C5 C6 C7 C8	13	0	13
Personalized attention		1	0	1

(\*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies	
Methodologies	Description
Introductory activities	With these activities, it is aimed guiding the students in the content, methodologies, learning outcomes of this subject (and AAF) and how he will be evaluated.
Supervised projects	This methodology is based on competences and contents of Architectural Technical Drawing; students will be required to complete several assignments during both class time practice sessions and non-class time hours allocated for these activities. One of the Supervised Projects will consist of an exam. This section of the course focuses on learning ?how things are done? and the promotion of supervised independent learning (under the supervision of the teacher). Class contact hours will be used for the proposal and discussion of project topics and related theoretical considerations. Class time will also include a series of group and/or individual project monitoring sessions, and time for carrying out particular tasks on the project in process. The test assignment (exam) will be done during part of the class hours.



Workshop	<p>The workshop section of the module includes both class time practice sessions and non-class time spent on workshop tasks assigned and supervised by the lecturer.</p> <p>This methodology is based on competences and contents of Freehand Drawing.</p> <p>Workshop tasks are focused on learning ?how things are done? and encouraging supervised independent learning.</p> <p>Students will be required to produce a set amount of graphical work (defined in advance by the lecturer) during the hours allocated for workshop activities.</p> <p>Workshop activities will be based on the following categories and assessed individually, with each task accounting for a specific portion of the overall mark:</p> <ol style="list-style-type: none"> <li>1) Class work (ordinary class hours)</li> <li>2) Weekly practical tasks (student's personal work hours)</li> <li>3) Final test drawings (final exam)</li> </ol>
Guest lecture / keynote speech	<p>Oral presentations, using audiovisual aids and other resources, intended to convey knowledge and encourage learning.</p> <p>Theoretical contents will be divided according to the module's two main subject areas and taught using a non-linear approach, based on the make-up of the group and the learning objectives proposed by the lecturers.</p> <p>In the Supervised project methodology, the theoretical contents will be taught under the teaching strategy known as the flipped classroom.</p> <p>On the other hand, the theoretical contents in the Workshop methodology will be developed in theoretical-practical sessions.</p>

### Personalized attention

Methodologies	Description
Introductory activities Guest lecture / keynote speech Supervised projects Workshop	<p>Individualised attention refers to one-to-one meetings between lecturers and students, or small group tutoring sessions, designed to offer guidance, support and motivation to students throughout the learning process, and an opportunity to discuss any questions or difficulties they may have in relation to specific module tasks and activities.</p> <p>For this section of the module, as in the other sections, students will be required to keep the lecturer informed as to the progress of their assignments, to ensure projects meet the necessary standards in each case.</p> <p>Given the emphasis on personalised teaching and learning in this module, students will be strictly required to avail of all opportunities for engagement offered by the syllabus. Students who fail to attend the weekly tutorial meetings (at the minimum 1 hour) defined in the timetable will be recorded as ?Absent? and have their assessment deferred to a subsequent examination period.</p>

### Assessment

Methodologies	Competencies	Description	Qualification
Guest lecture / keynote speech	A1 A2 A3 A4 A5 A63 B1 B4 B5 B6 B7 B12 C1 C2 C3 C4 C5 C6 C7 C8	<p>Class attendance is compulsory for this section of the subject.</p> <p>Students will be required to attend a minimum 80% of all classes; absences due to illness or other unforeseen circumstances should not exceed the remaining 20%.</p> <p>Students who fail to attend this 80% to all classes will be recorded as ?Absent?.</p>	0



Supervised projects	A1 A2 A3 A4 A5 A63 B1 B4 B5 B6 B7 B12 C1 C2 C3 C4 C5 C6 C7 C8	<p>Class attendance is compulsory for this section of the subject.</p> <p>Students will be required to attend a minimum 80% of all classes; absences due to illness or other unforeseen circumstances should not exceed the remaining 20%.</p> <p>Aggregated marks for all supervised projects will be averaged to give the student's overall mark for this section of the module. However 100% of all assigned work in this methodology should be done.</p> <p>Supervised projects will account for 50% of the total final mark for the module.</p> <p>All practical work (tests) will be evaluated by the whole staff of lecturers of the subject to guarantee the homogeneity of the level in all the subgroups.</p> <p>A mark under 5 in this methodology will result in a failing grade in this subject.</p>	50
Workshop	A1 A2 A3 A4 A5 A63 B1 B4 B5 B6 B7 B12 C1 C2 C3 C4 C5 C6 C7 C8	<p>Class attendance is compulsory for this section of the subject.</p> <p>Students will be required to attend a minimum 80% of all classes; absences due to illness or other unforeseen circumstances should not exceed the remaining 20%;</p> <p>However, 100% of all assigned work in this methodology should be done.</p> <p>Total aggregated marks for workshop tasks in each category will account for the following percentages of the total final mark for the module:</p> <ol style="list-style-type: none"><li>1) Class work (ordinary class hours)</li><li>2) Weekly practical tasks (student's personal work hours)</li></ol> <p>Class work and Weekly practical tasks will account for a 40% of the total final mark for the module.</p> <ol style="list-style-type: none"><li>3) Final assessment control drawings (final exam):</li></ol> <p>Final assessment control drawings (final exam) will account for a 60% of the total final mark for the module.</p> <p>All practical work (final exam) will be evaluated by the whole staff of lecturers of the subject to guarantee the homogeneity of the level in all the subgroups.</p> <p>A mark under 5 in this methodology will result in a failing grade in this subject.</p> <p>The content of the final exam will be agreed jointly between all teachers on the interactive portion of the module.</p>	50

Assessment comments



Delivery requirements that shall be met:

- Workshop: Class work assignments will be handed in weekly at the end of the class session; non-class assignments will be handed the week following the proposal. Deliveries cannot be postponed. Late delivery is not allowed.
- Supervised Projects: Assignments will be collected on the day set. Deliveries cannot be postponed. Late delivery is not allowed. Students who fail to meet this requirement will be recorded as ?Absent?.

In order to pass the module, either during the first-opportunity term exams in June, or during the second-opportunity examination period in July, students will be required to have done 100% of all assigned work in each methodology, and achieve the minimum specified mark for each of the compulsory assignments, under the appropriate direction and supervision of the lecturer. Students who fail to meet this requirement will be recorded as ?Absent (NP)? and have their assessment deferred to a subsequent examination period.

Project supervision will only be deemed to have taken place where the supervising lecturer can confirm that student work on projects during class time is consistent with work completed outside of class hours.

Consequently the following shall be met:

- 1) Students recorded as ?Absent? in the first opportunity, will be required to deliver all the assigned work of the different methodologies (not delivered in the first opportunity) to be evaluated in the second opportunity.
- 2) Students who only sit for the second opportunity (in July), will be strictly required to do all the assigned work during the course with particular emphasis to the lecturer supervision of all these tasks.
- 3) Students who need to sit for the second opportunity and hadn't got the minimum mark for the supervised projects, should develop a new 'development assignment' posed by the lecturers at the beginning of the second semester, to give students enough time to do it and to have it supervised by their teachers. The deadline to deliver this task will be 15 days before the date of the exam of the second opportunity. The mark of this new task will be considered instead of the previous one obtained during the first semester for this methodology.
- 4) Students who need to sit for the second opportunity and hadn't got the minimum mark for the workshop, should develop a new 'sketchpad' posed by the lecturers at the beginning of the second semester, to give students enough time to do it and to have it supervised by their teachers. The deadline to deliver this task will be the date of the exam of the

second opportunity.

#### Class

attendance is compulsory for both methodologies workshop and supervised projects (theoretical and practical sessions). Students who fail to attend to the 80% to all classes will be recorded as ?Absent?.

Given the emphasis on personalized teaching and learning in this module, students will be strictly required to avail of the opportunities for engagement offered by the syllabus. Students who fail to attend the weekly tutorial meetings (at the minimum 1 hour), will be recorded as ?Absent?.

#### Teaching,

testing and assessment in respect of mobility programme students will be adapted to meet any special circumstances or supervision needs these students may have.



## Sources of information

<b>Basic</b>	<ul style="list-style-type: none"><li>- Campanario, Gabriel (2012). THE ART OF THE URBAN SKETCHING. Massacgusetts. Ed. Quarry Books</li><li>- Cooper, Douglas (1992). DRAWING AND PERCEIVING. Nueva York. Ed. John Wiley &amp; Sons</li><li>- Ching, Francis (1982). MANUAL DE DIBUJO ARQUITECTÓNICO. México. Ed. G.G. México</li><li>- Ching, Francis (1990). DRAWING. A CREATIVE PROCESS. New York. Ed. Wiley and Son</li><li>- Ching, Francis (1999). DIBUJO Y PROYECTO. México. Ed. G.G. México</li><li>- Edwards, Betty (1979). APRENDER A DIBUJAR CON EL LADO DERECHO DEL CEREBRO. Nueva York. Ed. Urano</li><li>- Gonzalez, Lorenzo; Bertazzoni, L. (2000). MAQUETAS. LA REPRESENTACIÓN DEL ESPACIO EN EL PROYECTO ARQUITECTÓNICO. México. Ed. G.G. México</li><li>- Jacoby, Helmut (1973). NUEVOS DIBUJOS DE ARQUITECTURA. Barcelona. Ed. G.G.</li><li>- Janke, Rolf (1978). ARCHITECTURAL MODELS. Londres, Academy Editions</li><li>- Knoll, W. y Hechinger, M. (1982). MAQUETAS DE ARQUITECTURA: TECNICAS Y CONSTRUCCIÓN. México. Ed. G.G. México</li><li>- Mills, Criss B. (2000). DESIGNING WITH MODELS. Nueva York. Ed. John Wiley &amp; Sons</li><li>- Moneo, R. y Cortés, J. (1982). COMENTARIO SOBRE 20 ARQUITECTOS DEL SIGLO XX. Barcelona. Ed. U. Politecnica Cataluña</li><li>- Navarro Lizandra, José Luis (2000). MAQUETAS, MODELOS Y MOLDES: MATERIALES Y TÉCNICAS PARA DAR FORMA A LAS IDEAS . Castelló de la Plana. Publicacions de la Universitat Jaume I.</li><li>- Nicolaides, Kimon (1990). The Natural Way to Draw: A Working Plan for Art Study. Harcourt Brace and Company</li><li>- Porter y Goodman (1983-1984-1985). MANUAL DE TÉCNICAS GRÁFICAS PARA ARQUITECTOS. VOL 1,2,3 Y 4. Barcelona. Ed. G.G.</li><li>- Redondo, E. y Delgado, M. (). DIBUJO A MANO ALZADA PARA ARQUITECTOS.. Barcelona. Ed. Parramón</li><li>- Richards, James (2013). FREEHAND DRAWING AND DISCOVERY. New Jersey. Ed. Wiley and Son</li><li>- Uddin, M.S. (2000). DIBUJO AXONOMÉTRICO. México. Ed. McGraw Hill</li><li>- Uddin, M.S. (2000). DIBUJO DE COMPOSICIÓN. México. Ed. McGraw Hill</li><li>- VanDyke, Scott (1984). DE LA LINEA AL DISEÑO. México. Ed. G.G. México</li></ul>
<b>Complementary</b>	

## Recommendations

### Subjects that it is recommended to have taken before

### Subjects that are recommended to be taken simultaneously

Descriptive Geometry/630G02003

Introduction to Architecture/630G02005

### Subjects that continue the syllabus

Analysis of Architectural Forms/630G02007

### Other comments

It would be advisable for new students before joining this subject, that previously had completed courses in high school on technical and freehand drawing.

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