

## SUSTAINABLE ARCHITECTURE AND URBAN DEVELOPMENT (2017-18)

<b>Código:</b> D035	<b>Fecha de aprobación:</b> 24/02/2012	<b>Precio:</b> 42,97 1st registration credits
<b>Créditos:</b> 60	<b>Título:</b> Master (ECTS)	

### RAMA

Engineering and Architecture

### PLAN

UNIVERSITY MASTER'S DEGREE IN SUSTAINABLE ARCHITECTURE AND URBAN PLANNING

### TIPO DE ENSEÑANZA

Face-to-face

### CENTROS DONDE SE IMPARTE

Polytechnic School

### ESTUDIO IMPARTIDO CONJUNTAMENTE CON

Solo se imparte en esta universidad

### FECHAS DE EXAMEN

[Acceda al listado de fechas de examen para esta titulación.](#)

## PLAN DE ESTUDIOS OFERTADO EN EL CURSO 2017-18

Leyenda: No ofertada Sin docencia

### MASTER'S DEGREE IN SUSTAINABLE ARCHITECTURE AND URBAN PLANNING

#### COMPULSORY SUBJECTS

48 créditos

Curso	Título	Créditos	Subject
1	END OF MASTER WORK	15	<a href="#">38421 - MASTER'S DEGREE FINAL PROJECT</a>
1	COMPULSORY	3	<a href="#">38404 - NEW MODELS OF URBAN AND TERRITORIAL OCCUPATION</a>
1	COMPULSORY	3	<a href="#">38405 - GEOGRAPHIC INFORMATION SYSTEMS FOR A NEW DESCRIPTION OF THE TERRITORY</a>
1	COMPULSORY	3	<a href="#">38407 - NEW ARCHITECTURAL MODELS AND APPLIED MATHEMATICS</a>
1	COMPULSORY	3	<a href="#">38409 - RESUSABLE URBAN ARCHITECTURE (IN SURROUNDING ENVIRONMENTS)</a>
1	COMPULSORY	3	<a href="#">38411 - STRUCTURE AND PROCESSES: STRUCTURES AS TECHNOLOGIES FOR A NEW DESCRIPTION</a>
1	COMPULSORY	3	<a href="#">38412 - SUSTAINABLE CONSTRUCTION</a>
1	COMPULSORY	3	<a href="#">38415 - DURABILITY OF BUILDING MATERIALS: REINFORCED CONCRETE AND METALS</a>
1	COMPULSORY	3	<a href="#">38418 - HABITAT AND ENERGY</a>
1	COMPULSORY	9	<a href="#">38420 - SUPERVISED RESEARCH SEMINAR</a>

#### OPTIONAL SUBJECTS

12 créditos

Curso	Título	Créditos	Subject
1	OPTIONAL	3	<a href="#">38406 - URBAN PLANNING INTERVENTIONS; LEGISLATION</a>
1	OPTIONAL	3	<a href="#">38408 - EXTREME CITIES: TOKYO, LONDON AND LAS VEGAS. THEIR ORIGINS AND SOCIAL, CULTURAL AND ECONOMIC FUTURE</a>
1	OPTIONAL	3	<a href="#">38410 - RESEARCH IN ARCHITECTURE AND URBAN PLANNING</a>
1	OPTIONAL	3	<a href="#">38413 - SUSTAINABILITY AND BUILDING MATERIALS</a>
1	OPTIONAL	3	<a href="#">38414 - EVOLUTION OF SUSTAINABLE ARCHITECTURE</a>
1	OPTIONAL	3	<a href="#">38416 - DURABILITY OF BUILDING MATERIALS: OTHER MATERIALS</a>
1	OPTIONAL	3	<a href="#">38417 - HERITAGE INTERVENTIONS</a>
1	OPTIONAL	3	<a href="#">38419 - SURFACE AND RADIANT ENERGY</a>

Superado este bloque se obtiene

**UNIVERSITY MASTER'S DEGREE IN SUSTAINABLE ARCHITECTURE AND URBAN PLANNING**

## AIMS

The principal aim of the course is to offer students a multi-disciplinary training at the highest level which is oriented towards professional research and will enable them to apply the criteria governing sustainable transformation of the land, the city and architecture efficiently at simple and inter-related levels. Students will develop skills and proficiencies in the understanding, projection and management of the sustainable relationship between built and natural environments. Other vital aspects with regard to designing new buildings and urban planning, such as the rational use of materials and the “scarce” resources available to us, keeping abreast of the latest developments in construction technology and an understanding of the tools needed to understand current energy requirements for new buildings, will also be analysed.

Accordingly, the general aims of the Master’s Degree programme can be listed as follows:

1. An efficient application of the criteria governing the sustainable development of the land, cities and architecture, at simple and inter-related levels.
2. Understanding, projecting and managing sustainable use of the built and natural environments.
3. Understanding aspects governing new building design and sustainable urban planning.
4. Understanding the rational use of materials and scarce natural resources, with the constant aim of maximising durability.
5. Keeping abreast of new developments in construction technology and knowing how to use the tools needed in order to comply with current energy requirements for new buildings.

The underlying aim is to develop new lines of research in sustainability and energy-saving in our cities and buildings, contributing to a better articulation of existing resources, and as preparation for the doctorate and applied investigation. The multi-disciplinary approach prepares students for research in sustainable architecture, land and cities, and the interactive processes between all three.



- [Master's Degree Course - Credits and Subjects](#)
- [Distribution of modules and subjects by course/semester](#)
- [General Course Programme](#)

## MASTER'S DEGREE COURSE - CREDITS AND SUBJECTS

Subject type	Credits
Compulsory (OB)	33
Optional (OP)	12
Final project (OB)	15
<b>TOTAL CREDITS</b>	<b>60</b>

## MODULES AND SUBJECTS BY COURSE / SEMESTER

UNIT	FIRST SEMESTER 30 ECTS			SECOND SEMESTER 30 ECTS		
	SUBJECT	TYPE	ECTS	SUBJECT	TYPE	ECTS
CITY AND TERRITORY	NEW MODELS OF URBAN AND TERRITORIAL OCCUPATION	OB	3	URBAN PLANNING INTERVENTIONS; LEGISLATION	OP	3
	GEOGRAPHICAL INFORMATION SYSTEMS FOR A NEW DESCRIPTION OF THE TERRITORY	OB	3			
CITY AND LANDSCAPE	NEW ARCHITECTURAL MODELS AND APPLIED MATHEMATICS	OB	3	EXTREME CITIES: TOKYO, LONDON, LAS VEGAS. THEIR ORIGINS AND SOCIAL, CULTURAL, ECONOMIC AND ENVIRONMENTAL FUTURES	OP	3
CITIES AND REUSABLE ARCHITECTURE	RESUSABLE URBAN ARCHITECTURE (IN SURROUNDING ENVIRONMENTS)	OB	3	RESEARCH IN ARCHITECTURE AND URBAN PLANNING	OP	3
MATERIAL SUSTAINABILITY	STRUCTURE AND PROCESSES: STRUCTURES AS TECHNOLOGIES FOR A NEW DESCRIPTION	OB	3	SUSTAINABILITY AND BUILDING MATERIALS	OP	3
	SUSTAINABLE CONSTRUCTION	OB	3	THE EVOLUTION OF SUSTAINABILITY IN ARCHITECTURE	OP	3
DURABILITY	DURABILITY OF BUILDING MATERIALS: REINFORCED CONCRETE AND METALS	OB	3	DURABILITY OF BUILDING MATERIALS: OTHER MATERIALS	OP	3
				INTERVENING IN HERITAGE	OP	3
ENERGY EFFICIENCY	HABITAT AND ENERGY	OB	3	SURFACE AND RADIANT ENERGY	OP	3
SUPERVISED RESEARCH SEMINAR					OB	9
FINAL PROJECT					OB	15

## GENERAL STUDY PLAN

The course programme is organised into 6 groups of subjects, each, in turn, made up of compulsory and optional subjects. All subjects are worth 3 ECTS, except the research seminar, which is worth 9 ECTS, and the Master's Degree Final Project, worth 15 ECTS.

Students are required to take 60 credits, of which 33 are compulsory and correspond to the 8 subjects considered fundamental and the research seminar. These credits correspond to a range of subjects, promoting inter-disciplinary study.

Students are also required to take 4 optional subjects and prepare a **Master's Degree Final Project** dissertation, worth 15 ECTS. The purpose of the **Master's Degree Final Project** is to introduce students to advanced research in any of the research lines forming part of the course programme. The emphasis on research prepares students to undertake their doctoral thesis immediately, and is a key element in same. Priority will be given to subjects directly or indirectly related to the Research Projects conducted by the Groups sponsoring the Master's Degree. Chosen research subjects must be authorised by the Master's Degree Academic Committee.

The following subjects are defined as part of the course programme:

- **City and Territory.** The changes in urban planning which have taken place in recent decades have resulted in the need to widen the scope of the study of settlements at territorial level. Accordingly, this unit, consisting of three subjects, aims to identify and study emerging urban planning models. To do this, we will focus not only on our immediately surrounding environment, but also on contextualising urban and territorial transformations within the framework of peninsular and international dynamics. Three lines of study have been established: the first is based on the potential of geographical information systems as a technology for describing the territory; the second concentrates on morphological analysis, which enables the new forms observed in emerging settlements to be identified; the third focuses on the legislative framework, studying the extent to which different legislations favour or hinder certain urban planning models.
- **City and Landscape.** The joint aim of this subject is to respond to the new emerging architectural systems and to interpret tendencies and apply them to the new reality. Students will learn to tackle sustainability, innovative social models and the structure of architecture, taking an active approach to the description of and innovation in contemporary reality. Innovative processes will be based on models, systems and technologies, enabling students to locate themselves with regard to emerging working systems and new definitions of the work of the architect and his/her position within the social network. Students are expected to experiment and work with new architectural models, taking a new approach to the construction parameters and paradigms of the contemporary city. Through these models, students will learn to formulate and manage a critical view of the city as a whole.
- **The City and Reusable Architecture.** Approaching urban and architectural construction by means of recycling and reusing current resources and avoiding wastefulness demands that we rediscover the built heritage around us, the types of buildings and the possibility of converting them to new purposes, optimising their formal, functional and technical values. This is made possible through an understanding of their cultural background and from a position of critical intervention informed by current thought.
- **Material sustainability.** Applying sustainability criteria to construction involves the rational use of available natural resources and requires significant changes to traditional construction values. The principles of sustainability strive for the conservation of natural resources, maximum reuse of resources, life-cycle management and overall reduction in the use of energy and water during construction and occupation. Houses should be considered not as isolated elements, but rather as inseparable from and naturally integrated with their environment, meeting the present and future needs of their users through flexibility, adaptability and intrinsic quality. Lessons must be learnt from the past in order to avoid repeating errors whilst providing continuity to successful choices. Moreover, the difficulty of achieving sustainability indicators or parameters implies that the efforts made towards this end may, at times, appear implausible. However, our intention is to propose a new reading which emphasises the value of multi-disciplinarity, risk-taking, good timing and seeking and, above all, discovering the concept of "informal", understood as the effort to move from situations of uncertainty towards others which can be perceived rather as being to a certain extent complex, but nevertheless susceptible to description.
- **Durability.** The concept of Sustainability implies conservation. Accordingly, it is important to ensure that buildings perform well for the maximum time possible. This ineluctably involves maintaining the properties of their component materials. In this regard, the subject concentrates on the durability of concrete buildings, analysing the science and technology of bonding agents, metal corrosion, and methods for the prevention and detection of damage. Although concrete has been the preferred building material for over a century, from the point of view of durability we should not forget the performance of other important materials in our built heritage and in new architecture, such as natural stone, ceramics, glass, plaster, lime, wood and polymers. Materials are very rarely found in isolation in constructions. Their interaction with the environment and with the other materials also affects their durability. Accordingly, we will analyse possible incompatibilities between materials which significantly influence the performance of the building, and which should be taken into account during design and construction. Complementarily, we will also study the techniques used to characterise the most useful construction materials.
- **Energy efficiency.** We will study and analyse the concept of energy efficiency, defined as reducing energy consumption whilst maintaining the same energy services, without decreasing comfort or quality of life, protecting the environment, ensuring supply and promoting sustainable use. Construction is a key sector in energy consumption, and buildings are

estimated to account for almost 40% of energy consumption, whilst potential energy savings have been estimated at over 20%. Changes to the legislative framework brought about by the approval of the European Directive on the energy performance of buildings has led to new requirements in the construction sector with regard to energy consumption, lighting, insulation, heating, climate control, hot water, energy certification and the use of solar energy. The aim of this subject is to enable students to understand and analyse the factors that intervene in the fitting out of buildings and the application of bioclimatic techniques, construction systems and installations that result in greater energy efficiency. We will also examine renewable energies, energy certification of buildings and waste-water treatment.

- [Entry Requirements](#)
- [Admission and Assessment Criteria](#)
- [Pre-enrolment and Enrolment](#)
- [Number of Places](#)

## ENTRY REQUIREMENTS

According to the Regulations of the University of Alicante, the following requirements must be complied to have access to official taught Master's degrees:

1. To be in possession of a SPANISH OFFICIAL GRADUATE DEGREE CERTIFICATE or other issued by an institution of higher education within the [EHEA](#) (European Higher Education) that enables the holder to have access to Master's degrees in the issuing .
2. To be in possession of an officially approved FOREIGN HIGHER EDUCATION DEGREE CERTIFICATE that had been recognised as equal to the degree that allows access to the requested studies.
3. To be in possession of a UNIVERSITY DEGREE CERTIFICATE obtained in a University or Higher Education Institution of COUNTRIES OUTSIDE THE EHEA, without the prior approval of their studies. In this case, the following should be considered:
  - Non- recognised degree certificates shall require a technical report showing an equivalence statement issued by the University of Alicante ([ContinUA – Continuing Education Centre](#)), for which the [corresponding fee](#) should be paid.
  - Access through this way does under no circumstances imply prior official approval of the holder's degree certificate, nor its recognition for purposes other than studying a master's degree.

## ADMISSION AND ASSESSMENT CRITERIA

### 1. Admission criteria

Admission will be based on the following criteria:

- a) An officially recognised 5-year degree in Architecture or Roads, Canals and Port Engineering, or a 3-year degree in Architecture or Civil Works Engineering, or a corresponding degree qualification in Architecture, Construction Engineering, Civil Engineering, or related areas equivalent to 240 ECTS credits.
- b) Level of achievement reflected in the academic record.
- c) Grades obtained in subjects related to the Master's degree course.

The criteria for admission to the Title, and the weighting with respect to the final assessment of each candidate will be:

- Studies of origin: 30%
- Average score for the diploma giving access to Master: 50%
- Average score in subjects corresponding to the profile of the Master: 10%
- Work, seminars or additional training courses related to the profile of the Master: 10%

Studies of origin shall be valued as follows:

- Official title or degree in Architecture Architect: 5 points
- Official title of Senior Engineer in Roads, Canals and Ports or degree in Building Engineering or Civil Engineering degree: 4 points
- Technical Architecture and Engineering Works: 3 points
- Related Areas: 2 points

### 2. Assessment criteria

In addition, the Master's Academic Commission will clearly specify the selection criteria employed when adjudicating admission to the course. These criteria will be made public and will be published in the Master's official web page during the pre-enrolment period. Where admission is denied, the Commission will provide the applicant with a written explanation of this decision.

## PRE-ENROLMENT AND ENROLMENT

[PRE-ENROLMENT +info](#)



Students who wish to study for an Officially Recognised Master's Degree at the UA should complete pre-enrolment in accordance with the deadlines and conditions specified annually.

#### ENROLMENT [+info](#)

Following publication of the definitive list of those admitted to the course, an email containing the user password will be sent to the students, enabling them to enrol via the **Campus Virtual** in accordance with the deadlines and conditions specified annually.

In the registration process, the **documents issued abroad** must be official, duly notarised and translated. Further information:

- <http://sqa.ua.es/en/academic-regulations/legalizacion/legalization-of-documents.html>

#### NUMBER OF PLACES

COURSE	NUMBER OF PLACES
2012-13	30
2013-14	30
2014-15	30

## **FOCUS**

Research.

## **SPECIALISATION**

Introduction to research in sustainable architecture, territory and city, and the interactions between them.

## **PROFESSIONAL PROFILES**

None. This degree is a Master's Degree in research, as training for a subsequent doctorate.

## IMPLEMENTATION

### 1. Timescale for implementation of the Master's Degree Course

Academic Year	Implementation of the Master's Degree
2010-2011	1 <sup>st</sup> Year

### 2. Procedure for equivalence recognition, where appropriate, between the current and the new course programme.

Not applicable

### 3. Studies being phased out and replaced by the proposed degree course:

Doctorate in Architecture, City Planning, Civil Works and Construction (RD 778/1998).

- [Verified Report](#)
- [Resolution from the Universities Council: Positive verification](#)
- [Authorization from the Valencian Government](#)

#### **Internal Quality Assurance System (SGIC) of the Title**

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- Structure of the Centre for Quality
  - [Comission of Internal Quality Guarantee](#)
  - [Other Commissions](#)
- [Handbook SGIC](#)
- [Procedures](#)
  - [Strategic \(PE\)](#)
  - [Key \(PC\)](#)
  - [Support \(PA\)](#)
  - [Measurement \(PM\)](#)
- [Management of the SGIC \(Access to ASTUA\)](#)

#### **Follow-up of the Title**

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- [Self-reports UA](#)
- [External reports AVAP](#)
- [Other reports](#)
- [Improvement Plans](#)
- [Progress and Learning Outcomes](#)

Information about the Centre	General information for students
<ul style="list-style-type: none"> <li>• <b>Polytechnic University College</b>  Campus de San Vicente del Raspeig Ctra. de Alicante s/n 03690 San Vicente del Raspeig (Alicante) Telephone:+ 34 96 590 3648 Fax:+ 34 96 590 3644 <a href="mailto:eps@ua.es">eps@ua.es</a> <a href="http://www.eps.ua.es">http://www.eps.ua.es</a></li> <li>• <b>Department of Achitectural Construction</b>  Campus de San Vicente del Raspeig Ctra. de Alicante s/n 03690 San Vicente del Raspeig (Alicante) Telephone:+ 34 96 590 3677 Fax:+ 34 96 590 3702 <a href="mailto:dcarq@ua.es">dcarq@ua.es</a> <a href="http://dca.ua.es/en/">http://dca.ua.es/en/</a></li> <li>• <b>Life Long Learning Centre (ContinUA)</b></li> </ul> <p><b>Only for pre-enrolment formalities</b></p> <p>Germán Bernácer Building. Ground Floor Telephone:+ 34 96 590 9422 Fax: + 34 96 590 9442 <a href="mailto:continua@ua.es">continua@ua.es</a> <a href="https://web.ua.es/en/continua/">https://web.ua.es/en/continua/</a></p>	<ul style="list-style-type: none"> <li>• <a href="#">Grants and assistance</a></li> <li>• <a href="#">Accommodation</a></li> <li>• <a href="#">Student refectories and cafeterias</a></li> <li>• <a href="#">Transport</a></li> <li>• <a href="#">Emergency medical care</a></li> <li>• <a href="#">Insurance</a></li> <li>• <a href="#">Services for students with special needs</a></li> <li>• <a href="#">Student representation and participation</a></li> <li>• <a href="#">University student identity card (TIU)</a></li> <li>• <a href="#">Frequently asked questions</a></li> </ul>
UA: General Regulations	+ Information about qualifications
<ul style="list-style-type: none"> <li>• <a href="#">Academic regulations and procedures of the University of Alicante</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Official State Gazette (BOE) on publication of course programmes</a></li> <li>• <a href="#">Own Web</a></li> <li>• <a href="#">Information pamphlet</a></li> <li>• <a href="#">Video presentation of the degree</a></li> <li>• <a href="#">Details title on RUCT</a></li> </ul>