

APPLICATIONS DEVELOPMENT AND WEB SERVICES (2020-21)

Código: D045	Fecha de aprobación: 18/06/2011	Precio: 39,27 1st registration credits
Créditos: 60	Título: Master (ECTS)	

RAMA

Engineering and Architecture

PLAN

UNIVERSITY MASTER'S DEGREE IN APPLICATIONS DEVELOPMENT AND WEB SERVICES

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 2020-21

Nodo inicial:

Leyenda: No ofertada Sin docencia

UNIVERSITY MASTER'S DEGREE IN APPLICATIONS DEVELOPMENT AND WEB SERVICES

COMPULSORY SUBJECTS

49 créditos

Curso	Título	Créditos	Subject
1	END OF MASTER WORK	8	38219 - MASTER'S DEGREE FINAL PROJECT
1	COMPULSORY	3	38200 - ADVANCED SOFTWARE DEVELOPMENT METHODOLOGIES
1	COMPULSORY	3	38201 - ANALYSIS AND SPECIFICATION OF SOFTWARE SYSTEMS
1	COMPULSORY	3	38202 - PATTERN-DIRECTED DESIGN
1	COMPULSORY	2	38203 - USER INTERFACE DESIGN
1	COMPULSORY	3	38204 - QUALITY CHECKS AND CONTROL
1	COMPULSORY	3	38205 - SOFTWARE SYSTEMS ARCHITECTURE
1	COMPULSORY	2	38206 - WEB SERVERS
1	COMPULSORY	2	38207 - APPLICATION SERVERS
1	COMPULSORY	4	38208 - ADVANCED PROGRAMMING IN DESKTOP ENVIRONMENTS
1	COMPULSORY	2	38209 - XML
1	COMPULSORY	4	38210 - DATABASES
1	COMPULSORY	3	38211 - DEVELOPING WEB APPLICATIONS
1	COMPULSORY	3	38212 - DEVELOPING DISTRIBUTED APPLICATIONS
1	COMPULSORY	4	38213 - PROGRAMMING MOBILE DEVICES

OPTIONAL SUBJECTS

11 créditos

ANALYSIS AND DEVELOPMENT OF NEW TECHNOLOGIES FOR INTERNET

Curso	Título	Créditos	Subject
-	OPTIONAL	3	38214 - ANALYSIS OF INTERNET TRENDS
-	OPTIONAL	3	38215 - BROWSER FRIENDLY INTERNET TECHNOLOGIES
-	OPTIONAL	5	38216 - DEVELOPING RICH INTERNET INTERFACES

DEVELOPING LARGE SYSTEMS

Superado este bloque se obtiene

UNIVERSITY MASTER'S DEGREE IN APPLICATIONS DEVELOPMENT AND WEB SERVICES

UNIVERSITY MASTER'S DEGREE IN APPLICATIONS DEVELOPMENT AND WEB SERVICES

COMPULSORY SUBJECTS

60 créditos

Curso	Título	Créditos	Subject
1	COMPULSORY	3	38200 - ADVANCED SOFTWARE DEVELOPMENT METHODOLOGIES
1	COMPULSORY	3	38201 - ANALYSIS AND SPECIFICATION OF SOFTWARE SYSTEMS
1	COMPULSORY	3	38202 - PATTERN-DIRECTED DESIGN
1	COMPULSORY	2	38203 - USER INTERFACE DESIGN
1	COMPULSORY	3	38204 - QUALITY CHECKS AND CONTROL
1	COMPULSORY	3	38205 - SOFTWARE SYSTEMS ARCHITECTURE
1	COMPULSORY	2	38206 - WEB SERVERS
1	COMPULSORY	2	38207 - APPLICATION SERVERS
1	COMPULSORY	4	38208 - ADVANCED PROGRAMMING IN DESKTOP ENVIRONMENTS
1	COMPULSORY	2	38209 - XML
1	COMPULSORY	4	38210 - DATABASES
1	COMPULSORY	3	38211 - DEVELOPING WEB APPLICATIONS
1	COMPULSORY	3	38212 - DEVELOPING DISTRIBUTED APPLICATIONS
1	COMPULSORY	4	38213 - PROGRAMMING MOBILE DEVICES
1	COMPULSORY	3	38214 - ANALYSIS OF INTERNET TRENDS
1	COMPULSORY	3	38215 - BROWSER FRIENDLY INTERNET TECHNOLOGIES
1	COMPULSORY	5	38216 - DEVELOPING RICH INTERNET INTERFACES
1	END OF MASTER WORK	8	38219 - MASTER'S DEGREE FINAL PROJECT

Superado este bloque se obtiene

UNIVERSITY MASTER'S DEGREE IN APPLICATIONS DEVELOPMENT AND WEB SERVICES

AIMS

The Master's Degree in Developing Web Applications and Services has been designed with the aim of teaching students how to develop web-based computer systems and large business systems, applying best practices to software engineering.

The compulsory section of the programme focuses mainly on providing methodological training in the field of Software Engineering, teaching students the most relevant and advanced software methodologies (ranging from the most traditional approaches, such as the Rational Unified Process, to agile processes and applying model-led development methods) and using the pertinent tools to capture and correctly validate requirements which will subsequently be applied to the design and implementation of the software developed. Development is led by good practice through learning and applying those patterns of analysis, architecture and design that provide the best solutions to the applications in question.

The course also teaches the principles of usability and design required to define a user interface which meets quality criteria. Finally, the course identifies appropriate testing stage practices. Throughout this process, models are established as the most important artefacts in the development process, from which traceability policies are defined in order to obtain the final application.

Another primary objective of the Master's Degree course is to provide advanced technical training based on the technologies pertaining to platforms that currently have greater professional protection. In terms of web applications, the Microsoft .NET and Java platforms are covered extensively.

This ranges from learning how to prepare the persistence layer for database managers to preparation of the business logic layer in distributed environments for .NET and Java. It also includes the user interfaces layer for desktop environments, web environments and mobile devices.

Furthermore, in recent years rich internet applications (RIAs) have become increasingly important, and the course teaches solutions for .NET and Java.

The course also contains two optional routes, each focusing on one of the two following aspects:

- **Analysis and Development of New Technologies for the Internet**
- **Developing Large Systems**

Analysing and Developing New Technologies for the Internet focuses on technologies that substantially improve interaction and usability of traditional web-based application user interfaces.

Developing Large Systems focuses on learning two types of applications – enterprise resource planning systems and developing large mainframe systems.

In both cases, students acquire the theoretical and practical knowledge needed to understand and use applications of this type, which are never studied at first degree level.

It should be stressed that one objective of the course is annual updating to include new technologies as they appear on the market, and with this purpose in mind the programme will change, as new technologies are introduced to replace those which have become obsolete or have lost their relevance.

- [Structure of the Master's Degree: credits and subject groups](#)
- [Distribution of subjects by module](#)
- [General course programme](#)

MASTER'S DEGREE COURSE - CREDITS AND SUBJECTS

Type of subject	Credits
Compulsory (OB)	52
Final project (OB)	8
TOTAL CREDITS	60

DISTRIBUTION OF SUBJECTS BY MODULE

MODULES	SUBJECTS	TYPE	ECTS
ADVANCED SOFTWARE ENGINEERING	ADVANCED SOFTWARE DEVELOPMENT METHODOLOGIES	OB	3
	ADVANCED SOFTWARE SYSTEMS ANALYSIS	OB	3
	PATTERN-LED DESIGN	OB	3
	USER INTERFACE DESIGN	OB	2
	QUALITY TESTING AND CONTROL	OB	3
	SOFTWARE SYSTEMS ARCHITECTURE	OB	3
SOFTWARE SYSTEM TECHNOLOGIES	ADVANCED PROGRAMMING IN DESKTOP ENVIRONMENTS	OB	4
	DEVELOPING WEB APPLICATIONS	OB	3
	DEVELOPING DISTRIBUTED APPLICATIONS	OB	3
	PROGRAMMING MOBILE DEVICES	OB	2
	XML	OB	2
	DATABASES	OB	3
SERVER ADMINISTRATION	WEB SERVERS	OB	2
	APPLICATION SERVERS	OB	2
ANALYSIS AND DEVELOPMENT OF NEW TECHNOLOGIES FOR THE INTERNET	ANALYSING INTERNET TRENDS	OB	3
	BROWSER-ORIENTATED INTERNET TECHNOLOGIES	OB	3
	DEVELOPING RICH INTERNET INTERFACES	OB	5
MASTER'S FINAL PROJECT	DISTRIBUTED WEB APPLICATION PROJECT	OB	8

GENERAL COURSE PROGRAMME

The course programme is made up of five modules, of which three are compulsory and contain fourteen subjects, and two are optional, containing five subjects. The compulsory subjects provide students with a solid theoretical and practical grounding, enabling them to develop and distribute the software project that they will be working on throughout the year.

The purpose of the course programme is to apply project-led learning, where ASE will provide students with the theoretical knowledge of software engineering necessary to develop a project using best practices, and SDT will teach them all of the technologies needed for the software that they will be developing. Last, but not least, ASA will enable them to acquire knowledge regarding administration of the applications developed.

Students are also given two optional routes, focusing on very different aspects of software development which are both currently of great importance: developing applications on large systems and developing internet applications using the latest technologies.

The different modules taught on the Master's course are described below:

- **Advanced Software Engineering:** provides students with the methodological tools needed to develop complex applications, i.e. multitier architectures, distributed business logic, relational object mapping with batch transaction and processes treatment, and interactive and independent user interface logic. Each of the six subjects emphasises the different disciplines involved in software engineering: studying software processes, requirement capture and analysis, studying the architecture of the system software, pattern-based design, creating a good design for a user interface with best practices for usability, and applying a coherent testing stage to improve quality assurance for the application. It is important to note that these subjects place a special emphasis on aspects not previously covered in degree subjects, such as applying model-led development techniques, using agile development methodologies, and applying design patterns directly to the most relevant platforms, such as .NET and Java. It is important to note that all this is applied directly to the final project, so that students are developing their skills from their first day in class, as their knowledge base increases.
- **Software Development Technologies:** this module teaches the most important technologies for developing desktop, web and mobile applications in distributed environments. This involves six subjects, each focusing on a different type of application and based on the most relevant applications today, such as .NET and Java, and the use of standards such as XML and SQL. Students learn to develop interactive applications for different devices, ranging from desktop to web applications, and including mobile devices. All allow for remote communication, and by learning technologies for developing middleware, students are able to develop applications under distributed environments, by using calls to remote procedures, or by means of the MOM paradigm, managing asynchronous messages. The teaching also includes managing and handling XML documents, which are essential for administering different frameworks, remote data communication, etc. Last, but not least, this module also covers efficient management and use of relational database access and management. As with ASE, the aim is for the knowledge acquired on the different software technologies to be applied directly in the final project.
- **Server Administration:** This module teaches students how to administer application servers and web servers so that the different distributed web applications that have been developed can be successfully deployed. Students thus learn how to improve important aspects such as security, scalability, performance and tolerance to failures of applications that have been deployed on such servers. As with ASE, the aim is for the administration knowledge acquired to be applied directly in the final project.

Finally, the two optional modules comprising the two alternative routes in this Master's course are as follows:

- **Developing Large Systems:** The subjects in this group are designed for students to learn about managing, administering and developing large software systems. This entails developing applications for mainframe environments, with the problems involved in acquiring all the theoretical and technological knowledge of such environments, completely changing working methods at the level of operating system, programming and data storage. A further subject examines large enterprise resource planning (ERP) systems, and students will learn to identify the different components that make up a company and how to set the parameters for and programme an ERP system. Both subjects have a mainly business approach, and help students to learn about systems that are not taught on University of Alicante first degree courses.
- **Analysis and Development of New Technologies for the Internet:** In this module, students learn about the new possibilities of the internet, such as the latest technologies for developing enriched web applications. There are three subjects, of which Analysing Internet Trends focuses more on the conceptual aspect of the new social internet, and on showing students the possibility of incorporating aspects into their projects that improve their online projection. Browser-Orientated Internet Technologies and Developing Rich Internet Interfaces focus on technologies that substantially improve interaction and usability of traditional internet application user interfaces of, whether these are components provided by the browser or installed through external applications (plug-ins).

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

ENTRY REQUIREMENTS AND SELECTION CRITERIA

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 Profile

The Master's Academic Committee will base their selection on the following criteria:

- (a) A Higher Qualification or Degree in Computer Science, Mathematics, Telecommunications Engineering, Industrial Engineering or related areas.
- (b) Academic Record
- (c) Academic achievement in subjects related to the Master's Degree.

2. Assessment criteria

In order to assess applicants' suitability for admission as regards criterion (c), the number of credits successfully completed will be taken into account, as will the average grade attained in the following subjects, which form part of the course programme of the Degree in Computer Engineering, currently taught at the University of Alicante:

- Advanced Application Design and Programming
- Software Design (only applicable for Technical Computer Engineering graduates)
- Software Engineering I (only applicable for Computer Engineering graduates)
- Software Engineering II
- Object-Based Programming
- Internet Programming

During the selection process, the Master's Academic Committee (MAC) will also consider subjects similar to those listed above, taught at other universities.

The Master's Academic Committee (MAC) will also clearly specify the selection criteria employed for admission to the course, and it will be publicly available throughout the pre-enrolment period on the official web page of the Master's Degree <http://www.eps.ua.es/masterweb>. Where an application for admission is rejected, the Master's Academic Committee will inform the person concerned via a written report explaining the rationale for the decision taken.

PRE-ENROLMENT AND ENROLMENT

PRE-ENROLMENT [+info](#)

Students who intend to study for an officially recognised Master's Degree at the UA should complete pre-enrolment in accordance with the guidelines and deadlines specified annually.

ENROLMENT [+info](#)

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

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

- <http://sga.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
2015-16	30
2016-17	30

FOCUS

Professional.

MASTER'S DEGREE SPECIALISATION PROFILE

Professional specialisation.

MASTER'S DEGREE COURSE PROFESSIONAL PROFILES

Professions for which the degree qualifies its holder.

Analyst, software architect, project manager, software designer, programmer.

TIMESCALE FOR IMPLEMENTATION

1. Timescale for implementation of the Master's Degree course

Academic year	Implementation of Master's degree
2010-2011	1st year

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


Measures have been taken to ensure credit equivalence recognition for subjects taken on the previous Official Master's Degree in Web Application and Service Development. It should be borne in mind that due to continual technological advances in this field, changes and modifications may be introduced into the new Master's Degree course. In the event of this affecting credit equivalence of subjects taught on the former programme, the Master's Academic Commission will decide on the specific credit equivalence procedure.

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

This Master's Degree proposal implies the discontinuation of the former "Official Master's Degree in Web Application and Service Development", approved by Royal Decree 56/2005. The new Master's degree course spans one academic year; thus, the former programme will come to an end in 2009-2010.

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

Internal Quality Assurance System (SGIC) of the Title

- 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

- [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"> • Polytechnic University College <p>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 eps@ua.es http://www.eps.ua.es</p> <ul style="list-style-type: none"> • Life Long Learning Centre (ContinUA) <p>Only for pre-enrolment formalities</p> <p>Germán Bernácer Building. Ground Floor Telephone: + 34 96 590 9422 Fax: + 34 96 590 9442 continua@ua.es https://web.ua.es/en/continua/</p>	<ul style="list-style-type: none"> • Grants and assistance • Accommodation • Student refectories and cafeterias • Transport • Emergency medical care • Insurance • Services for students with special needs • Student representation and participation • University student identity card (TIU) • Frequently asked questions
UA: General Regulations	+ Information about qualifications
<ul style="list-style-type: none"> • Academic regulations and procedures of the University of Alicante 	<ul style="list-style-type: none"> • Official State Gazette (BOE) on publication of course programmes Error Correction Modification • Own Web • Information pamphlet • Video presentation of the degree • Details title on the RUCT