

**COURSE DATA****DATA SUBJECT**

Code: 44823
Name: Resource Management and Automation of Operations
Cycle: Master's Degree
ECTS Credits: 4
Academic year: 2026-27

STUDY (S)

Degree	Center	Acad. year	Period
2234 - Master's Degree in Web Technology, Cloud Computing and Mobile Applications	Escola Tècnica Superior d'Enginyeria	1	First quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
2234 - Master's Degree in Web Technology, Cloud Computing and Mobile Applications	Infrastructure and Infrastructure Management	COMPULSORY

COORDINATION

BONET ESTEBAN ENRIQUE VICENTE

SUMMARY

The administration of computer servers that provide the necessary resources for the applications is fundamental within the knowledge that a student of a master in "Technologies Web, Cloud Computing and Mobile Applications" must acquire.

Students must know the infrastructures and how to configure them in order to meet the requirements necessary for the proper operation of the applications running on those infrastructures.

Additionally, in the administration of computer servers there are certain tasks that are performed repetitively and that can be automated, so it is necessary to expose some elements that allow to automate these repetitive tasks.

PREVIOUS KNOWLEDGE**RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE**



There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS

Although formally there is no prerequisite, it is recommended to have knowledge about operating systems, computer security, fundamentals and architecture of computer networks and administration and maintenance of systems, etc. Which will allow the student to study without difficulty the subject.

COMPETENCES / LEARNING OUTCOMES

2234 - Master's Degree in Web Technology, Cloud Computing and Mobile Applications

Ability to apply acquired knowledge and solve problems in new or little-known environments within broader and multidisciplinary contexts, being able to integrate this knowledge.

Ability to assess risk and security issues in systems and applications and take measures to mitigate them in the fields of Web technologies, cloud computing and mobile applications.

Ability to design and evaluate servers, applications and systems based on distributed computing.

Ability to model, design, define the architecture, implement, manage, operate, and maintain applications, systems, services, networks and content in the field of Web technologies, cloud computing and mobile applications.

Students should apply acquired knowledge to solve problems in unfamiliar contexts within their field of study, including multidisciplinary scenarios.

Students should be able to integrate knowledge and address the complexity of making informed judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities associated with the application of their knowledge and judgments.

Students should communicate conclusions and underlying knowledge clearly and unambiguously to both specialized and non-specialized audiences.

Students should demonstrate self-directed learning skills for continued academic growth.

Students should possess and understand foundational knowledge that enables original thinking and research in the field.

To foster, in academic and professional contexts, technological, social or cultural advancement within a society based on In knowledge and respect for: a) fundamental rights and equal opportunities between men and women; b) principles of equal opportunities and universal accessibility of persons with disabilities; and, c) the values ​​of a culture of peace and democratic values.



DESCRIPTION OF CONTENTS

1. Installation, configuration and security on multiple servers
2. Installation, configuration and security on application servers
3. Installation, configuration and security in databases
4. Resource Monitoring Tools
5. Tools for provisioning services
6. Shell Programming for resource management
7. Systems configuration management tools

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theoretical and practical classes	28,90
Laboratory	11,10
Total hours	40,00

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00



Individual or group project	6,00
Independent study and work	35,00
Preparation of lessons	16,00
Preparation for assessment activities	3,00
Resolution of case studies	0,00
Total hours	60,00

TEACHING METHODOLOGY

- Theory class
- Problem resolution
- Project-oriented learning

EVALUATION

The assesment modalities used in this subject are:

SE1: Online assessment and/or degree of participation

SE2: Assessment of problems, works, reports and/or memories

SE4: Exam or face-to-face assessment

SE6: Assessment of laboratory

- First call:

$$\text{Score} = 0,1 * \text{SE1} + 0,3 * \text{SE2} + 0,2 * \text{SE4} + 0,4 * \text{SE6}$$

- Second call:

The works (SE2, SE6) not passed in the first call can be submitted.

$$\text{Score} = 0,3 * \text{SE2} + 0,3 * \text{SE4} + 0,4 * \text{SE6}$$



The grading system is specified at the following link:

<http://www.uv.es/uvweb/universidad/es/estudios-postgrado/informacion-administrativa-postgrado/permanencia-calificaciones/calificaciones-1285897761928.html>

The applicable regulations can be found at the following link:

<http://www.uv.es/uvweb/universidad/es/estudios-grado/informacion-academica-administrativa/normativas/normativas-universidad-valencia-1285850677111.html>

REFERENCES



- MySQL administrator's bible / Sheeri Cabral, Keith Murphy. Indianapolis, Ind. : Wiley Pub., c2009. ISBN: 0470416912
- Automating Linux and UNIX system administration [Recurs electrònic] / Nate Campi and Kirk Bauer. Berkeley, Calif. : Apress ; New York : Distributed to the book trade by Springer-Verlag, c2009. ISBN: 9781430210597
- WildFly : new features : get acquainted with the exciting new features that WildFly has to offer / Filipe Costa Spolti. Birmingham, England : Packt Publishing, 2014. ISBN: 9781783285907
- PostgreSQL administration essentials: discover efficient ways to administer, monitor, replicate, and hadle your PostgreSQL databases / Hans-Jürgen Schönig, Birmingham, England : Packt Publishing, 2014. ISBN: 9781783988990
- Ansible [Recurs electrònic] : From Beginner to Pro / by Michael Heap. Berkeley, CA : Apress : Imprint: Apress, 2016. ISBN: 9781484216590 978-1-4842-1659-0
- WildFly performance tuning : develop high-performing server applications using the widely successful WildFly platform / Arnold Johansson, Anders Welén ; cover image by Bartosz Chucherko. Birmingham, [England] : Packt Publishing, 2014. ISBN: 9781783980574
- PostgreSQL 9 administration cookbook [Recurs electrònic] : solve real-world PostgreSQL problems with over 100 simple, yet incredibly effective recipes / Simon Riggs, Hannu Krosing. Birmingham, U.K. : Packt, 2010. ISBN: 9781849510288
- Ansible configuration management / Daniel Hall. Birmingham : Packt Publishing, 2013. ISBN: 9781783280827