

**COURSE DATA****Data Subject**

Code	44823
Name	Resource Management and Automation of Operations
Cycle	Master's degree
ECTS Credits	4.0
Academic year	2022 - 2023

Study (s)

Degree	Center	Acad. Period
2234 - M.D. in Web Technology, Cloud Computing and Mobile Apps	School of Engineering	1 First term

Subject-matter

Degree	Subject-matter	Character
2234 - M.D. in Web Technology, Cloud Computing and Mobile Apps	1 - Infrastructure and Infrastructure Management	Obligatory

Coordination

Name	Department
BONET ESTEBAN, ENRIQUE VICENTE	240 - Computer Science

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.

OUTCOMES

2234 - M.D. in Web Technology, Cloud Computing and Mobile Apps

- Students can apply the knowledge acquired and their ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study.
- Students are able to integrate knowledge and handle the complexity of formulating judgments based on information that, while being incomplete or limited, includes reflection on social and ethical responsibilities linked to the application of their knowledge and judgments.
- Students can communicate their conclusions, and the knowledge and rationale underpinning these, to specialist and non-specialist audiences, clearly and unambiguously.
- Students have the learning skills that will allow them to continue studying in a way that will be largely self-directed or autonomous.
- Students have the knowledge and understanding that provide a basis or an opportunity for originality in developing and/or applying ideas, often within a research context.
- 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.
- 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.
- 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.



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

LEARNING OUTCOMES

- Specify and complete computer tasks that are complex, incompletely defined or unfamiliar
- Describe and explain techniques and methods applicable to their particular area of study and identify their limitations
- Organize your own work independently, demonstrating initiative and exercising personal responsibility
- Perform bibliographic searches and reviews using databases and other sources of information
- Learning and improving personal performance as the basis for lifelong learning and professional development
- Communicate effectively both verbally and through other media to a variety of audiences and preferably in a second language
- Use server install tools (bare metal installers)
- Configure servers based on security
- Install and configure application servers based on security
- Install and configure database management systems taking into account security
- Configure application servers to access database management systems
- Install, configure, and use resource monitoring tools
- Install, configure, and use operations automation tools

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

ACTIVITY	Hours	% To be attended
Theoretical and practical classes	40,00	100
Development of group work	6,00	0
Study and independent work	35,00	0
Preparation of practical classes and problem	16,00	0
Resolution of online questionnaires	3,00	0
TOTAL	100,00	

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:

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

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



Basic

- MySQL administrator's bible / Sheeri Cabral, Keith Murphy. Indianapolis, Ind. : Wiley Pub., c2009. ISBN: 0470416912
- Automating Linux and UNIX system administration [Rekurs 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 / Filippe 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 [Rekurs electrònic] : From Beginner to Pro / by Michael Heap. Berkeley, CA : Apress : Imprint: Apress, 2016. ISBN: 9781484216590 978-1-4842-1659-0

Additional

- 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 [Rekurs 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