VNIVERSITAT DE VALÈNCIA

Course Guide
44823 Resource Management and Automation of Operations

COURSE DATA

Data Subject	
Code	44823
Name	Resource Management and Automation of Operations
Cycle	Master's degree
ECTS Credits	4.0
Academic year	2018 - 2019

Study (s)

Degree	Center	Acad. year	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 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.
- 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. Shell Programming for resource management

3. Installation, configuration and security on application servers

4. Installation, configuration and security in databases

5. Resource Monitoring Tools

6. Tools for provisioning services

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:

Score = 0,1 * SE1 + 0,3 * SE2 + 0,2 * SE4 + 0,4 * SE6

- Second call:

Score = 0,1 * SE1 + 0,3 * SE2 + 0,2 * SE4 + 0,4 * 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

- WildFly configuration, deployment, and administration : build a functional and efficient WildFly server with this step-by-step, practical guide / Christopher Ritchie. Birmingham, UK : Packt Publishing, 2014. ISBN: 9781783286232
- 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
- PostgreSQL [Recurs electrònic] : the comprehensive guide to building, programming, and administering PostgreSQL databases. Indianapolis, Ind. : Sams Pub., c2006. ISBN: 0672327562

Additional

- PostgreSQL 9 administration cookbook : over 150 recipes to help you run an efficient PostgreSQL database in the cloud / Simon Riggs ... [and three others]. Birmingham, UK : Packt Publishing, 2015. ISBN: 9781849519069
- WildFly cookbook : over 90 hands-on recipes to configure, deploy, and manage Java-based applications using WildFly / Luigi Fugaro. Birmingham, UK : Packt Publishing, 2015. ISBN: 9781784392413