[MNC001] PLATFORMS AND INFRASTRUCTURES

GENERAL INFORMATION

Studies	MASTER DEGREE IN DATA ANALYSIS, CYBERSECURITY AND CLOUD COMPUTING	**Subject**	Development and Operations
Semester	1	**Course** 1	
Character	COMPULSORY	**Mention / Field of specialisation**	
Plan	2019	**Modality** Adapted Face-to-face	**Language** CASTELLANO
Credits	6	**Hours/week** 0	**Total hours** 64 class hours + 86 non-class hours = **150 total hours**

PROFESSORS

AGIRRE BASTEGIETA, JOSEBA ANDONI

ILLARRAMENDI REZABAL, MIREN

REQUIRED PREVIOUS KNOWLEDGE

Subjects	**Knowledge**
(No specific previous subjects required)	*(No previous knowledge required)*

SKILLS

VERIFICA SKILLS

SPECIFIC

MNCE10 - Defining, designing and implementing scalable, flexible and resilient architectures that address existing problems and accelerating the deployment of different applications.

CROSS

MNCTR1 - Ability to work in multidisciplinary teams and in a multilingual environment (Basque/Spanish/English) and to communicate, both orally and in writing, knowledge, procedures, results and ideas related to the life cycle of the data, cybersecurity, and development and operations.

BASIC

M_CB7 - To know how to apply the acquired knowledge and competencies and the ability to solve problems in new or unfamiliar contexts within wider (or multidisciplinary) environments related to their field of study

M_CB9 - To share knowledge, conclusions and their rationale with specialised and lay audiences in a clear, unambiguous manner

LEARNING RESULTS

RA311 [!] *Diseña, despliega y monitoriza infraestructuras escalables, flexibles y de alta disponibilidad utilizando los servicios de la nube*

LEARNING ACTIVITIES	CH	NCH	TH
Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams	7 h.	13 h.	20 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	1 h.	3 h.	4 h.
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams	3 h.	2 h.	5 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	7 h.	2 h.	9 h.
Carrying out exercises and solving problems individually and/or in teams	7 h.	10 h.	17 h.

EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	40%	Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems
Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems	20%	Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems
Individual written and/or oral tests or individual coding/programming tests	40%	Individual written and/or oral tests or individual coding/programming tests

CH - Class hours: 25 h.
NCH - Non-class hours: 30 h.
TH - Total hours: 55 h.

RA312 [!] *Diseña, despliega y monitoriza infraestructuras escalables, flexibles y de alta disponibilidad utilizando contenedores virtuales*

LEARNING ACTIVITIES	CH	NCH	TH
Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams	8 h.	7 h.	15 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	1 h.	2 h.	3 h.
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams	2 h.	4 h.	6 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	4 h.	1 h.	5 h.
Carrying out exercises and solving problems individually and/or in teams	11 h.	10 h.	21 h.

EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	40%	Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems
Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems	20%	Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems
Individual written and/or oral tests or individual coding/programming tests	40%	Individual written and/or oral tests or individual coding/programming tests

CH - Class hours: 26 h.
NCH - Non-class hours: 24 h.
TH - Total hours: 50 h.

RA313 [!] *Es capaz de crear sistemas automáticos de aprovisionamiento de la infraestructura de aplicaciones escalables, flexibles y de alta disponibilidad, afrontando la problemática o el proyecto individualmente y en grupo*

LEARNING ACTIVITIES	CH	NCH	TH
Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams	6 h.	16 h.	22 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	1 h.	4 h.	5 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	3 h.	2 h.	5 h.
Carrying out exercises and solving problems individually and/or in teams	3 h.	10 h.	13 h.

EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	40%	Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems
Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems	20%	Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems
Individual written and/or oral tests or individual coding/programming tests	40%	Individual written and/or oral tests or individual coding/programming tests

CH - Class hours: 13 h.
NCH - Non-class hours: 32 h.
TH - Total hours: 45 h.

CONTENTS

1. Docker Containers basic concepts
2. Cluster management: basic concepts
3. Cloud computing
4. Infrastructure provisioning

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Moodle Platform	http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_ln k.pl?grupo=MASTERDATUANALISIA11&ejecuta=25&
Class presentations	
Computer practical training	