



## IDENTIFYING DATA

### (\*)Novos servizos telemáticos

Subject	(*)Novos servizos telemáticos			
Code	V05G300V01945			
Study programme	(*)Grao en Enxeñaría de Tecnoloxías de Telecomunicación			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Optional	4th	1st
Teaching language	Spanish			
Department				
Coordinator	Llamas Nistal, Martín			
Lecturers	Álvarez Sabucedo, Luis Modesto Llamas Nistal, Martín			
E-mail	martin@uvigo.es			
Web	http://fatic.uvigo.es			
General description	The overall objective of the course is that students gain a global vision of the new technologies in the field of telematic services. Thus the contents of this course will be open and try to gradually adapt to technological developments in this field. At first we focus on semantic technologies.			

## Competencies

Code	
A4	CG4: The ability to solve problems with initiative, to make creative decisions and to communicate and transmit knowledge and skills, understanding the ethical and professional responsibility of the Technical Telecommunication Engineer activity.
A7	CG7: The ability to analyze and assess the social and environmental impact of technical solutions.
A9	CG9: The ability to work in multidisciplinary groups in a Multilanguage environment and to communicate, in writing and orally, knowledge, procedures, results and ideas related with Telecommunications and Electronics.
A98	(CE89/OP32) The ability to design and construct new computer services.

## Learning aims

Expected results from this subject	Training and Learning Results
CG4: The ability to solve problems with initiative, to make creative decisions and to communicate and transmit knowledge and skills, understanding the ethical and professional responsibility of the Technical Telecommunication Engineer activity.	A4
CG7: The ability to analyze and assess the social and environmental impact of technical solutions.	A7
CG9: The ability to work in multidisciplinary groups in a Multilanguage environment and to communicate, in writing and orally, knowledge, procedures, results and ideas related with Telecommunications and Electronics.	A9
(CE89/OP32) The ability to design and construct new computer services.	A98

## Contents

Topic	
Information Retrieval.	Algorithms and classic applications. Algorithms based on links.
Structure of a typical search engine.	Basic architecture of a search engine. Description and objectives of each of the modules.
Introduction to semantic web.	Metadata, RDF. Examples of metadata: LOM and Dublin Core.
Semantic web and related technologies.	Semantic Web languages and tools:OWL, SPARQL and RIF.
e-technologies	e-learning, e-government and e-health

## Planning

	Class hours	Hours outside the classroom	Total hours
Master Session	16	40	56
Laboratory practises	14	28	42
Case studies / analysis of situations	5	25	30
Introductory activities	3	6	9
Jobs and projects	1	3	4
Jobs and projects	1	4	5
Long answer tests and development	2	2	4

\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

## Methodologies

	Description
Master Session	Theoretical contents and their practical application will be presented during the lectures. Student are expected to play an active role during lectures.
Laboratory practises	During practical sessions, it will be developed a semantic project with the support of adhoc software tools.
Case studies / analysis of situations	Use cases will presented to the students. Thus, they will be able to analyze and to study them in depth in order to prepare their academic projects.
Introductory activities	Program of the subject will be presented along with the methodologies used, the classroom, practical contents, final project, final and continuous evaluation criteria, and, in general, all aspects of the subject.

## Personalized attention

Methodologies	Description
Master Session	In the tutorial class, all questions related to practices, problem solving sessions and lectures will be tackled. Through continuous evaluation, students with non optimal performance will be identified. In order to tackle those issues, some procedures will be launched such as call for mentoring and analyzing the reasons that are leading to these bad results, and to search for solutions. Students will have the opportunity to attend personal tutorials in the professor's office at hours established by the professor for this purpose at the beginning of the semester and published online.
Laboratory practises	In the tutorial class, all questions related to practices, problem solving sessions and lectures will be tackled. Through continuous evaluation, students with non optimal performance will be identified. In order to tackle those issues, some procedures will be launched such as call for mentoring and analyzing the reasons that are leading to these bad results, and to search for solutions. Students will have the opportunity to attend personal tutorials in the professor's office at hours established by the professor for this purpose at the beginning of the semester and published online.
Case studies / analysis of situations	In the tutorial class, all questions related to practices, problem solving sessions and lectures will be tackled. Through continuous evaluation, students with non optimal performance will be identified. In order to tackle those issues, some procedures will be launched such as call for mentoring and analyzing the reasons that are leading to these bad results, and to search for solutions. Students will have the opportunity to attend personal tutorials in the professor's office at hours established by the professor for this purpose at the beginning of the semester and published online.

Tests	Description
Jobs and projects	In the tutorial class, all questions related to practices, problem solving sessions and lectures will be tackled. Through continuous evaluation, students with non optimal performance will be identified. In order to tackle those issues, some procedures will be launched such as call for mentoring and analyzing the reasons that are leading to these bad results, and to search for solutions. Students will have the opportunity to attend personal tutorials in the professor's office at hours established by the professor for this purpose at the beginning of the semester and published online.
Jobs and projects	In the tutorial class, all questions related to practices, problem solving sessions and lectures will be tackled. Through continuous evaluation, students with non optimal performance will be identified. In order to tackle those issues, some procedures will be launched such as call for mentoring and analyzing the reasons that are leading to these bad results, and to search for solutions. Students will have the opportunity to attend personal tutorials in the professor's office at hours established by the professor for this purpose at the beginning of the semester and published online.
Long answer tests and development	In the tutorial class, all questions related to practices, problem solving sessions and lectures will be tackled. Through continuous evaluation, students with non optimal performance will be identified. In order to tackle those issues, some procedures will be launched such as call for mentoring and analyzing the reasons that are leading to these bad results, and to search for solutions. Students will have the opportunity to attend personal tutorials in the professor's office at hours established by the professor for this purpose at the beginning of the semester and published online.

## Assessment

	Description	Qualification
Jobs and projects	-It consists of the presentation of a practical project using semantics. -It will take place at about the 11th week of the course. - Competencies A7, A9 and A98 are evaluated.	30
Jobs and projects	- It consists of the presentation of a project covering all telematics solution. - It will take place at the end of the course. - Competencies A7, A9 and A98 are evaluated.	30
Long answer tests and development	- It will cover all the theoretical contents. - It will take place on the 8th week of the course. - A4 competence is evaluated.	40

## Other comments on the Evaluation

### 1. Continuous assessment

The course can be passed with full marks from continuous assessment, with no need to sit the final exam.

Students who sit any of the assessment tests may not be listed as "Not Present".

The weighting and content of each continuous assessment test are as follows:

Assessment 1 (40%):

- All theoretical contents.
- It will take place about the 8th week of the course.

Assessment 2 (30%):

- It will consist of the presentation of a semantic project (specified in due course).
- It will take place about the 11th week of the course.

Assessment 3 (30%):

- It will consist of a presentation of a holistic project involving telematic based services
- At the end of the course.

It is mandatory to pass each part of the continuous assessment (that is, the minimum score of each part must be 5 out of 10)

The course may be passed only with continuous assessment. Those students who failed the first assessment are allowed to compensate it in the final exam.

### 2. Final exam

- There is a final exam in December-January and another in July. All content presented along the course is included in this exam.
- Students sitting this final exam will be asked to submit in advance some works to be done according to specific instructions on each call. These works must be original and will involve task related to assessments 2 and 3. Should the work not be original, the student will be banned from the entire course.
- The pass mark for this test is 5 out of 10.

## Sources of information

R. Baeza-Yates y B. Ribeiro-Neto., **R. Baeza-Yates y B. Ribeiro-Neto. "Modern Information Retrieval"**, R. Baeza-Yates y B. Ribeiro-Neto. "Modern Information Retrieval". Addison Wesley.,  
Gómez-Pérez, A.; Fernández-López, M.; Corcho, O, **Ontological Engineering**, Springer-Verlag,

## BIBLIOGRAPHY

- Arasu, A., Cho, J., García-Molina, H., Paepcke, A., and Raghavan, S. [Searching the web]. ACM Transactions on Internet Technology, Vol. 1, No. 1, pp. 2-43, August 2001.

- S. Chakrabarti, B. Dom, D. Gibson, J. Kleinberg, P. Raghavan, and S. Rajagopalan. Automatic resource compilation by analyzing hyperlink structure and associated text. In *Proceedings of the 7th World-wide web conference (WWW7)*, 1998. Online at <http://www7.scu.edu.au/1898/com1898.htm>.
- S. Brin and L. Page. The anatomy of a large-scale hypertextual Web search engine. *7th International World Wide Web Conference*, Brisbane, Australia, April 1998. Online at <http://www7.scu.edu.au/1921/com1921.htm> and <http://infolab.stanford.edu/~backrub/google.html>
- Lassila, O., and Swick, R.R. [Resource Description Framework (RDF) Model and Syntax Specification]. World Wide Web Consortium Recommendation. Available on: <http://www.w3.org/TR/REC-rdf-syntax>
- Lassila, Ora [Web Metadata: A Matter of Semantics]. IEEE Internet Computing, Vol. 2, No. 4, pp.30-37, Julio-Agosto 1998. Available on: <http://computer.org/internet/ic1998/w4030abs.htm>
- Deborah L. McGuinness. [Ontologies Come of Age]. [http://www.ksl.stanford.edu/people/dlm/papers/ontologies-come-of-age-mit-press-\(with-citation\).htm](http://www.ksl.stanford.edu/people/dlm/papers/ontologies-come-of-age-mit-press-(with-citation).htm)
- Grigoris Antoniou and Frank van Harmelen. [Web Ontology Language: OWL]. <http://www.cs.vu.nl/~frankh/postscript/OnoHandbook03OWL.pdf>
- RDF web-site: <http://w3c.org/RDF>
- Dublin Core web-site: <http://dublincore.org>
- LOM web-site: <http://ltsc.ieee.org/wg12>. Standard available on [http://ltsc.ieee.org/wg12/files/LOM\\_1484\\_12\\_1\\_v1\\_Final\\_Draft.pdf](http://ltsc.ieee.org/wg12/files/LOM_1484_12_1_v1_Final_Draft.pdf)
- Semantic Web Activity web-site : <http://www.w3.org/2001/sw/>

---

## Recommendations

---