

Academic Year: ( 2024 / 2025 )

Review date: 29-04-2024

Department assigned to the subject: Library and Information Sciences Department

Coordinating teacher: ROBEDANO ARILLO, JESUS

Type: Compulsory ECTS Credits : 3.0

Year : 1 Semester : 1

## REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Training complements related to the Web and its standards of structure and semantics (HTML markup language) and rendering (CSS style sheet language) will be required if the student doesn't have previous knowledge on these subjects.

## OBJECTIVES

The student will acquire extensive knowledge about the procedures, means and typologies in which administrative documents are currently produced in their different production contexts, the modalities and legal aspects of the reuse of information, and the methods and languages used for their XML markup.

The student, after passing the subject, must:

- Understand the basis of production, management and exploitation of information and documentation in public and private organizations on all storage media, especially digital media.
- To know the diversity of technologies dedicated to the management of documents and files.
- Select and evaluate the appropriate technologies for the implementation of electronic document management systems.
- Know the legal and ethical principles and legislation that supports the reuse of information.
- To know the main initiatives and projects in the field of the reuse of information in the public sector in different administrative and geographical levels.
- Be able to propose a project to reuse information and documents.
- Know how to apply standards and tools that support the standardization and interoperability of data and documents.

## LEARNING OUTCOMES:

The student, after passing the course, must:

- Understand the meaning of common terms in the field of markup languages, and to know the main standards in this area.
- Recognize and represent schematically, at different levels of depth, the logical structure of different types of documents, outside of their particular representation, and identify any node in the structure by means of a path.
- Know some common markup languages of use in libraries and information centers.
- Correctly interpret the markup of SGML or XML documents.
- Read and interpret an XML schema, either DTD (Document Type Definition) or XSD (XML Schema Definition), and identify the structural constraints imposed.
- Describe and represent the generic structure for a given document type using the DTD syntax; to convert a DTD into an XML Schema, adding the needed constraints.
- Transform XML documents into another format, such as HTML, using XSLT and XPath.
- Handle specific software to work with XML documents and its related specifications.

## DESCRIPTION OF CONTENTS: PROGRAMME

Topics common to the subject:

- Analysis and design of processes, elements, techniques and controls needed for the management, reuse and dissemination of open data, documents and digital evidence.

Specific topics of the course:

Markup languages, particularly XML and the set of its related specifications, are the lingua franca of the Web who provides interoperability among applications that handle the very diverse collections of both structured data and text documents. This course treats these topics, especially in its application to text documents, and also aims to provide basic knowledge that allows to approach, in other courses, the study of various XML-based standards.

Theory:

- Markup basics.
- Meta-markup languages: SGML y XML.
- XML markup syntax.
- Creation of specific languages for specific document types: the DTD and XSD schema models and their syntaxes.
- Identification and selection of components for processing XML documents: XPath.
- Transforming XML documents: XSLT.
- Overview of XML related specifications.
- Some markup languages of special interest in libraries and information centers.
- Software for working with XML.

Practice

- Various practical cases about XML markup, document modeling in a DTD or XSD, and XML document transformation with XSLT and XPath
- Final team work including everything discussed in the course.

Unit 1: History and characteristics of markup languages.

Topic 2: Definition of document types.

The XMLA file production cycle. Definition of document types. File. Specific software installation. Design of a schema for XML. Create and edit XML documents.

Theme 3: . Transformation and conversion of XML, XSLT documents. CSS, apply a style sheet to an XML document.

Unit 4: Markup languages of special interest in the field of information units.

Topic 5: Data storage and XML repositories. Indexing of XML content. Databases and repositories. Indexing of contents.

## LEARNING ACTIVITIES AND METHODOLOGY

\* THE TRAINING ACTIVITIES ACORDING TO THE STUDY PLANIFICATION WILL BE:

AF1 Individual work for the study of theoretical and practical materials developed and contributed by the teacher.

AF2 Individual work for problem solving and case studies.

AF3 Theoretical-practical classes.

AF4 Tutorials.

AF5 Group work.

AF6 Active participation in forums enabled by the teacher in the virtual educational platform.

AF7 Perform self-assessment test for content review.

AF8 Synchronous online debates and colloquiums

Type of activity Is it synchronous? Total hours Hours of synchronous interactivity No. In-person hours % In-person attendance Student

AF1	NO	24,7	0	0
0				
AF2	NO	22	0	0
0				
AF3	SI	3	3	3
100				

AF4 0	SI	3	3	0
AF5 0	NO	30	0	0
AF6 0	NO	1,3	0	0
AF7 0	SI	3	3	0
AF8 0	SI	3	3	0
	Total	90	12	3
3,33%				

\* TEACHING METHODOLOGIES:

MD1 Presentations in the teacher's class with support of computer and audiovisual media, in which the main concepts of the subject are developed and the bibliography is provided to complement the students' learning.

MD2 Critical reading of texts recommended by the teacher of the subject:

Press articles, reports, manuals and / or academic articles, either for later discussion in class, or to expand and consolidate the knowledge of the subject.

MD3 Resolution of practical cases, problems, etc. Raised by the teacher individually or in a group.

MD4 Exposition and discussion in class, under the moderation of the professor of subjects related to the content of the subject, as well as of practical cases.

MD5 Preparation of individual and group work and reports.

MD6 Reading of theoretical and practical teaching materials.

TUTORIALS SCHEME

The schedules of the tutorials, adjusted to the disposition by the University, can be consulted in the space of the course in the platform (Aula Global). They will include at least two sections, one for face-to-face and the other for online tutorials. In addition to these official tutorials, students can request and arrange with the teacher online or on-site tutorials outside those times.

ASSESSMENT SYSTEM

<b>% end-of-term-examination:</b>	50
<b>% of continuous assessment (assignments, laboratory, practicals...):</b>	50

ASSESSMENT ACTIVITIES:

SE1 Participation in class and forums of the educational platform

SE2 Individual or team work done during the course

SE3 Evaluable and scoring tests

SE4 Exam or Final Work \*

SE5 Presentation and public defense of TFM

\* The final exam will be taken in person at the Carlos III University of Madrid, or online (with prior authorization from the Master's Directorate), and must be passed in order to pass the subject.

Evaluation system	Weighting (%)
SE1 .....	5
- Participation in forums and in-person sessions	5
SE2 .....	30
- Individual practice: XML markup	10
- Individual practice: creating XML schema	10
- Individual practice: XML-HTML transformation	10
SE3 .....	15
- Self-assessment tests	10
- Tests on readings	5
SE4 .....	50

<b>% end-of-term-examination:</b>	50
<b>% of continuous assessment (assignments, laboratory, practicals...):</b>	50
- Final work in group	30
- Final exam in person	20

The final grade is summative, but you must pass the final exam to pass the subject.

In this course, in the absence of specific University regulations for postgraduate studies, if the student has not followed the continuous assessment, the exam will allow to obtain 60% of the maximum final grade in the regular exam session. In the extra exam session, it will allow to obtain up to 75% of the maximum final mark.

#### BASIC BIBLIOGRAPHY

- Arciniegas, Fabio Programación Avanzada con XML, México [etc.]: McGraw Hill, 2002
- Eito Brun, Ricardo Lenguajes de marcas para la gestión de recursos digitales : aproximación técnica, especificaciones y referencia, Gijón (Asturias): Trea, 2008
- Eito Brun, Ricardo XML-based Content Management: Integration, Methodologies and Tools, London, etc.: Chandos, 2018
- Harold, Elliotte R. XML : [imprescindible], Madrid : Anaya Multimedia, 2005

#### ADDITIONAL BIBLIOGRAPHY

- Fung, Khun Yee XSLT : working with XML and HTML, Boston [etc.] : Addison-Wesley, 2000
- Geroimenko, Vladimir; Chen, Chaomei (eds.) Visualizing the semantic web : XML-based internet and information visualization, London : Springer, 2003
- Gilmour, Ronald W XML : A Guide for Librarians, Chicago ; London : Lita, 2003
- Goldberg, K.H XML: Visual QuickStart Guide [2ª ed.], Berkeley, CA: Peachpit Press, 2008
- Goldfarb, Charles F.; Prescod, Paul Manual de XML, Madrid [etc.]: Prentice Hall, 1999
- Harold, Elliotte Rusty; W. Scott Means XML in a Nutshell: A Desktop Quick Reference, Sebastopol [etc.]: O'Reilly Media, 2001
- Holman, G. Ken Definitive XSLT and XPath, Upper Saddle River, NJ: Prentice Hall, 2002
- Marchal, Benoît XML by Example, Indianapolis : QUE, 1999
- Miller, Dick R.; Clarke, Kevin S Putting XML to Work in the Library, Chicago: American Library Association, 2004
- Morrison, Michael, et al XML al Descubierto. Madrid [etc.]: Prentice Hall, 2000, Madrid [etc.]: Prentice Hall, 2000
- Ng, Kwong B Using XML : a how-to-do-it Manual and CD-ROM for Librarians, Nueva York : Neal-Shuman, 2007
- Tennant, Roy (ed.) XML in libraries, New York : Neal-Schuman Pub, 2002

## BASIC ELECTRONIC RESOURCES

- W3C . Extensible Markup Language (XML) 1.0 (Fifth Edition) W3C Recommendation 26 November 2008:  
<https://www.w3.org/TR/xml/>
- W3C . XML Schema Definition Language (XSD) 1.1 Part 1: Structures W3C Recommendation 5 April 2012:  
<https://www.w3.org/TR/xmlschema11-1/>
- W3C . XML Schema Definition Language (XSD) 1.1 Part 2: Datatypes W3C Recommendation 5 April 2012:  
<https://www.w3.org/TR/xmlschema11-2/>
- W3C . XML Path Language (XPath) Version 1.0 W3C Recommendation 16 November 1999 (Status updated October 2016): <https://www.w3.org/TR/xpath/>
- W3C . XSL Transformations (XSLT) Version 1.0 W3C Recommendation 16 November 1999:  
<https://www.w3.org/TR/xslt>