



GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Master of Computer Applications, 5th Semester

Subject Name: Web Data Management (WDM)

Subject Code: 4659311

With effective
from academic
year 2018-19

1. Learning Objectives:

- To understand data models, syntax, query languages, schemas, query analysis, type-checking, publishing, indexes, and storage methods for semi structured data represented in XML.

2. Prerequisites:

- Database Programming, Database Management Systems

3. Course Contents:

Unit	Course Content	Weightage Percentage
Unit I	Introduction: Modelling Web Data Database Technology and Web Applications, Semi structured data, Web Data Management with XML, XML and syntax, XML Data Model, XLink and XPointer	20 %
Unit II	XPath and XQuery Regular Path Expressions, XPath Basics, XPath Steps and expressions, path evaluations, axes, node tests, predicates, XQuery Syntax, Flwor, expression, advanced features, Xupdate	20 %
Unit III	Typing Automata on ranked trees, unranked trees, XML schema, other schema languages, Graph Semi structured data, graph bisimulation, data guides, XML query evaluation, XML identifiers, XML evaluation technique.	20 %
Unit IV	Ontologies, Querying and Data Integration RDF, RDF Schema, OWL, Description Logic, Querying data through ontologies, Querying RDF data, querying through RDFS, Answering queries though DL, Global-as-view (GAV) and Local-as-view (LAV) mediation, Ontology based mediation, Peer-to-peer data management Systems	20 %
Unit V	Building Web scale applications Web search, web crawlers, web information retrieval, Web graph mining and current topics in web search, Distributed systems, failure management, Required properties of a distributed system, P2P networks, Hash-based structures, distributed indexing, Distributed computing with MapReduce	20 %

4. Text Book:

- 1) S. Abiteboul, I. Manolescu, P. Rigaux, M. Rousset and P. Senellart, Web Data Management, Cambridge University Press, 2012

5. Reference Books:

- 1) S. Abiteboul, P. Buneman and D. Suciu, Data on the Web: From Relational to Semistructured Data to XML, Morgan Kaufman Publisher
- 2) Research papers and W3C web site



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6. Accomplishment of the student after completing the course:

- 1) Have thorough understanding about state of the art in designing and building web applications and services, largely focusing on issues and challenges that revolve around the management and processing of web data.
- 2) Students will be able to use (i) current web technologies to develop dynamic web sites (ii) develop web sites that use dynamic content generated from a database